南山大学言語学研究センター

私立大学戦略的研究基盤形成支援事業
『言語比較に基づく統語理論の国際共同研究』

平成 20 年度～平成 24 年度
研究成果報告書

はしがき

　言語学研究センターは、本年 3 月をもって、文部科学省の補助を受けた 5 年間の研究プロジェクト「言語比較に基づく統語理論の国際共同研究」を完了しました。本学では、2006~2007 年度に、大学院人間文化研究科言語科学専攻が文部科学省「魅力ある大学院教育イニシアティブ」（大学院 GP）の事業として、海外 8 大学（言語学領域では、ケンブリッジ、シエナ、コネティカット、清華、EFL–ハイデラバード）とコンソーシアム協定を締結し、研究科目の開講、学生ワークショップの開催、学生の個別研究指導などを共同で行いました。本研究プロジェクトでは、この教育プログラムの成果を引き継ぎ、協定校の研究者とともに、詳細な言語比較に基づく統語論および言語獲得論の研究を遂行しました。

　共同研究は日常的に e-mail 等を使用して行われましたが、同時に集中的な討議を目的とした公開プロジェクト・ワークショップを 18 回開催しました。海外からの参加者は 27 名（台湾 8 名、アメリカ 7 名、インド 4 名、イタリア 4 名、韓国、オランダ、ベルギー、スペイン各 1 名）に登り、活発な議論がなされました。また、5 年の間にコロキュアムや講演会も数多く開催しました。25 回に及ぶコロキュアムの発表者は、海外からの 21 名（アメリカ 10 名、イギリス 5 名、香港 2 名、ドイツ 2 名、フランス、ベルギー各 1 名）を含みます。

　「報告書概要」に示されているように、本プロジェクトを通して、名詞句構造、削除現象、移動現象、演算子の作用域と解釈、文法格、文周縁部構造、言語獲得における普遍性等のテーマにおいて、多くの成果を得ることができました。成果は、17 名の国内研究者によってまとめられ、その一部は毎年度末に発行する *Nanzan Linguistics* 5〜9 に公表しました。プロジェクト期間中に研究者が公表した著書・論文の一覧は、「研究業績一覧」にリストしてあります。プロジェクト前半には、日本語と他のアジア諸言語との比較を中心にプロジェクトを遂行しましたが、この期間の成果を代表する論文 10 編を所収した論文集 *Japanese Syntax in Comparative Perspective* が、2013 年度中にオックスフォード大学出版会から刊行されます。本報告書には、より広範な比較研究と理論研究を行ったプロジェクト後半の代表的な論文 17 編を掲載しました。

　本プロジェクトの遂行にあたっては、多数の海外研究協力者に加え、本学の事務職員の方々にお世話になりました。この場を借りて、教育・研究支援事務室の山田真紀氏、藤田哲也氏、言語学研究センターの中嶌紀子氏、小林幸子氏、西田聖子氏、新野理恵氏にお礼を申し上げます。

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2013 年 3 月 31 日
言語学研究センター長
斎藤　衛

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平成20年度〜平成24年度「私立大学戦略的研究基盤形成支援事業」
研究成果報告書概要

1 学校法人名：南山学園

2 大学名：南山大学

3 研究組織名：言語学研究センター

4 プロジェクト所在地：愛知県名古屋市昭和区山里町 18

5 研究プロジェクト名：言語比較に基づく統語理論の国際共同研究

6 研究観点：研究拠点を形成する研究

7 研究代表者

研究代表者名	所属部局名	職名
斎藤 衛	人文学部	教授

8 プロジェクト参加研究者数： １７ 名

9 該当審査区分： 人文・社会

１０ 研究プロジェクトに参加する主な研究者

研究者名	所属・職名	プロジェクトでの研究課題	プロジェクトでの役割
斎藤 衛	人文学部・教授	名詞句構造、自由語順	言語比較に基づくパラメターの解明
阿部 泰明	人文学部・教授	空辞、意味構造	言語比較に基づくパラメターの解明
青柳 宏	人文学部・教授	文法格、複合動詞	言語比較に基づくパラメターの解明
有元 將剛	外国語学部・教授	焦点化、制御現象	言語比較に基づくパラメターの解明
村杉 恵子	外国語学部・教授	言語獲得全般、削除現象	言語比較に基づくパラメターの解明
鈴木 達也	外国語学部・教授	主題化、名詞句構造	言語比較に基づくパラメターの解明
宮本 陽一	大阪大学言語文化研究科・准教授	計量詞、名詞句構造	言語比較に基づくパラメターの解明
野村 昌司	中京大学国際教養学部・准教授	複合動詞、文法格	言語比較に基づくパラメターの解明

杉崎　鉱司	三重大学人文学部・准教授	言語獲得全般、Wh疑問文	言語比較に基づくパラメーターの解明
高橋　大厚	東北大学国際文化研究科・准教授	項省略、自由語順	言語比較に基づくパラメーターの解明
藤井　友比呂	横浜国立大学人間科学部・准教授	補文構造、制御現象	言語比較に基づくパラメーターの解明
岸本　秀樹	神戸大学人文学研究科・教授	文法格、述部-項構造	言語比較に基づくパラメーターの解明
小泉　政利	東北大学文学研究科・准教授	複合動詞、文法格	言語比較に基づくパラメーターの解明
Martin, Roger	横浜国立大学環境情報研究院・准教授	制御現象、文法格	言語比較に基づくパラメーターの解明
越智　正男	大阪大学言語文化研究科・准教授	文法格、束縛現象	言語比較に基づくパラメーターの解明
高野　祐二	金城学院大学文学部・教授	自由語順、制御現象	言語比較に基づくパラメーターの解明
浦　啓之	関西学院大学文学部・教授	文法格、一致現象	言語比較に基づくパラメーターの解明
北原　久嗣	慶應義塾大学言語文化研究所・教授	句構造形成、一致現象	言語比較に基づくパラメーターの解明
瀧田　健介	東北大学国際文化研究科・日本学術振興会特別研究員(PD)	線状化、削除現象	言語比較に基づくパラメーターの解明

＜研究者の変更状況（研究代表者を含む）＞

旧

プロジェクトでの研究課題	所属・職名	研究者氏名	プロジェクトでの役割

（変更の時期：平成 21 年 5 月 1 日）

新
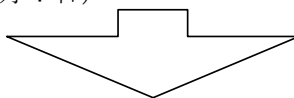
変更前の所属・職名	変更（就任）後の所属・職名	研究者氏名	プロジェクトでの役割
横浜国立大学人間科学部・准教授	同左	藤井　友比呂	言語比較に基づくパラメーターの解明
神戸大学人文学研究科・教授	同左	岸本　秀樹	言語比較に基づくパラメーターの解明
東北大学文学研究科・准教授	同左	小泉　政利	言語比較に基づくパラメーターの解明
横浜国立大学環境情報研究院・准教授	同左	Martin, Roger	言語比較に基づくパラメーターの解明
大阪大学言語文化研究科・准教授	同左	越智　正男	言語比較に基づくパラメーターの解明
金城学院大学文学部・教授	同左	高野　祐二	言語比較に基づくパラメーターの解明

関西学院大学文学部・教授	同左	浦　啓之	言語比較に基づくパラメターの解明

旧

プロジェクトでの研究課題	所属・職名	研究者氏名	プロジェクトでの役割
空辞、意味構造	人文学部・教授	阿部　泰明	言語比較に基づくパラメターの解明
文法格、複合動詞	人文学部・教授	青柳　宏	言語比較に基づくパラメターの解明

（変更の時期：平成 24 年 2 月 1 日）

新
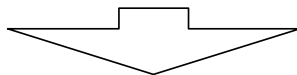
変更前の所属・職名	変更（就任）後の所属・職名	研究者氏名	プロジェクトでの役割
慶應義塾大学言語文化研究所・教授	同左	北原　久嗣	言語比較に基づくパラメターの解明
東北大学国際文化研究科・日本学術振興会特別研究員(PD)	同左	瀧田　健介	言語比較に基づくパラメターの解明

１１　研究の概要

（１）研究プロジェクトの目的・意義及び計画の概要

　理論言語学は、個別言語の詳細な記述を基礎として言語間の比較研究を遂行することにより、人間言語の普遍的な文法と、言語間のバリエーションを可能にするパラメーターを解明することをめざす。この研究は近年大きな成果を挙げつつあるが、同時に、言語理論の枠組みが、英語を中心とするヨーロッパ諸語の研究に基づいて形成されてきた歴史的経緯があり、類型的に大きく異なる日本語研究からの貢献が期待されている。本事業は、この国際的要請に応えるために、(1)日本語と様々な他言語との比較を行って、その理論的帰結を探求する国際共同研究を展開し、(2)その成果を公表するとともに、(3)日本語研究を基礎として国際共同研究に寄与しうる若手研究者を育成することを目的とする。

　研究テーマは、特に理論的成果が期待できる A. 名詞句構造と文法格、B. 空辞、一致、および自由語順、C. 焦点、主題、および計量詞の作用域、の三つを中心とし、国立清華大学 (台湾)、ハイデラバード EFL 大学、コネティカット大学、シエナ大学、ケンブリッジ大学の協力の下に、日本語と中国語、ドラヴィダ系言語、インド・アーリア系言語、ロマンス系言語、ゲルマン系言語、スラヴ系言語、ケルト系言語を比較しつつ、共同研究を行う。共同研究は、日常的なメールのやりとりを通して遂行するが、集中的な討議を目的として、国際ワークショップを年３ー４回開催する。また、必要に応じて、研究協力者を招聘あるいは訪問して、共同研究を進める。

（２）研究組織

　言語学研究センターの研究員 6 名、学外研究員 11 名、PD 各年度 1 名、および大学院言語科学専攻言語学領域の大学院生が中心となって、研究を遂行している。本センターは、本事業に先立って、2006 年度から国立清華大学 (台湾)、ハイデラバード EFL 大学、コネティカット大学、シエナ大学、ケンブリッジ大学と協力体制を組んでおり、本事業も、この海外 5 大学に所属する中国語、トルコ語、ドラヴィダ系言語、インド・アーリア系言語、ロマンス系言語、ゲルマン系言語、スラヴ系言語、ケルト系言語の専門家とともに構想したものである。これらの大学から 16 名の言語学者が、研究協力者 (共同研究者)として、大学院生とともに事業に参加している。

（３）研究施設・設備等

　図書館、教室、会議室等、大学の施設を活用するが、言語学研究センター独自の施設としては、１万冊程度の蔵書、専門誌を有する資料室に加え、作業室２室、実

験室、応接室、事務室がある。事務室には職員が常駐し、事業の事務補助を行っている。

（４）研究成果の概要

2008 年度から現在まで、計画通りに、日本語と他言語との比較研究を展開し、その理論的帰結を追究して、事業を進めてきた。日常的な研究活動に加え、事業の推進を目的とした国際ワークショップを 16 回、コロキュアムを 23 回、また、必要に応じて、講演会も随時開催した。2012 年度後半には、シエナ大学と合同で、文左方周縁部構造に関するヨーロッパ諸語との比較研究を集中的に遂行するための第 17 回ワークショップを計画しており、事業の成果を最終的に確認し、公表するための第 18 回も予定している。(これまでの言語学研究センター開催ワークショップ、コロキュアム、講演会一覧については、資料 1 を参照されたい。) また、共同研究や成果の公表を目的とした研究員の出張は、39 回にのぼる。(北米 10、インド 5、台湾 3、ヨーロッパ 2、中国 2、韓国 1、国内 16)

こうした活動を通して、予想を超える研究成果が得られている。比較研究によって、日本語と他言語との共通性とともに日本語の統語的特徴が明確になり、また、言語間の相違を説明するパラメーターについても、具体的な提案をするに至っている。日本語を軸とした比較研究を展開することにより、統語理論に貢献するという目標は確実に達成されつつある。

プロジェクト前半 (2008 年度〜2010 年度)では、日本語と他のアジア諸言語との比較を中心に記述的研究を進めた。日中語の名詞句構造の比較を基礎とした主要部パラメーターの研究、日韓語の相違を説明するミクロパラメーターの研究、アジアの言語の特徴ともいえる項削除現象の比較研究とその文法的基礎の解明、演算子—変項関係の形成に関する日中語比較研究、アジアの言語において多用される与格主語、属格主語、主格目的語の分析などが主なテーマであった。それぞれのテーマについて、具体的な成果を得たのみならず、新たな研究領域を確立することができた。例えば、本プロジェクトの名詞句構造の日中語比較研究では、属格の分布、分類辞の分布、削除現象、関係節構造の派生について多くの論文を公表し、二言語間の様々な複雑な相違を指摘するとともに、それらが主要部パラメーターにより一括して説明しうることを論じたが、最近の学会では、名詞句の日中語比較を扱う発表が顕著に増加しており、これも本プロジェクトの成果とみなすことができる。また、項削除については、統語論と言語獲得論の双方から取り組み、特に、高橋大厚を中心に、項削除現象と項—時制/動詞の一致現象との関連を広範な比較研究により検証したが、項削除の比較研究は、中国やスペインでも遂行されるようになり、このテーマをめぐる国際的な研究者集団が形成されつつある。

具体的な研究成果の詳細については後述するが、プロジェクト前半の特に重要な成果については、*Japanese Syntax in Comparative Perspective* と題する論文集としてオ

ックスフォード出版会から公刊することが決まっている。(以下、オックスフォード論文集と略す。) 同出版会から刊行の打診があり、2010 年度に原稿を提出したが、査読に１年余を有し、微修正を経て、現在は校正を進めている。索引の作成、最終版の印刷が残されているため、出版は 2013 年度前半の予定である。(論文集の目次、概要については、資料１を参照されたい。)

プロジェクト後半(2010 年度〜2012 年度)の研究計画は、現在も遂行中であるが、すでに多くの成果を得ている。前半の成果を基礎としたヨーロッパ諸言語を含むより広範な比較研究、理論研究が主な目的である。多くのテーマに取り組んできたが、項削除の記述的研究を発展させる研究テーマとしては、削除現象の統一的分析と文法格の再分析がある。削除現象の可能な分析として、PF 削除仮説と LF コピー仮説があり、ヨーロッパ言語でも観察される VP 削除、N'削除、スルーシング等の現象に項削除を加えた場合、いずれの仮説がより妥当となるのかが一つ目の研究課題である。また、前半の研究により、項削除現象が、項—時制/動詞の一致の欠如に起因することが示されたが、特にヨーロッパ系言語の分析では、項−時制/動詞の一致と文法格が表裏一体の現象であることが広く仮定されている。そこで、項—時制/動詞の一致がない日本語のような項削除言語における文法格の分析が、二つ目の研究課題となる。この課題は、プロジェクト前半に行ったアジア諸言語の与格主語、属格主語、主格目的語の分析とも密接に関わるものであり、統語理論の根幹をなす格理論への貢献を目標とする。

ヨーロッパ諸語との比較研究においては、主要な研究テーマの一つとして、文周縁部構造の解明と説明が挙げられる。ヨーロッパ系言語の研究において、文の類型を示し、主題、焦点等の談話的要素が表れる文左方周縁部構造のカートグラフィーが、大きな研究テーマとなっている。日本語のような主要部後置型言語を基礎として、このテーマを追究することはむずかしいと考えられてきたが、本研究プロジェクトでは、補文標識の分布と階層性を手がかりとして、日本語にもヨーロッパ系言語に類似する文周縁部構造が存在することを示した。この成果は、今後の比較研究、パラメーター研究の基礎になりうるものである。さらに、モーダルや終助詞に研究を拡大して、日本語文周縁部のカートグラフィー構造を明らかにするとともに、カートグラフィー構造そのものを、意味的選択制限や言語行為の整合性により説明することをめざす理論研究を遂行し、言語獲得理論に対する帰結も追究した。この結果として、カートグラフィー研究の国際ワークショップにおいて日本語が主要な言語として取り上げられるようになり、本プロジェクトの研究者が発表者として招聘されることも多くなっている。

プロジェクト後半には、以上の研究に加えて、日本語特有のデータに基づく制御理論の研究などでも顕著な成果が得られている。上記オックスフォード論文集の続編として、これらの成果を公刊する予定であるが、出版には２年程度を要することから、とりあえず、本プロジェクトの最終報告書に主要論文を掲載することにしている。

＜優れた成果があがった点＞

　以下、(1) 名詞句の構造、(2) 削除現象、(3) 移動現象、(4) 計量詞の作用域と Wh句の解釈、 (5) 文法格、(6) 文周縁部構造、(7) 言語獲得、という研究テーマ毎に、研究成果を報告する。

(1) 名詞句の構造

　人間言語は、主要部前置型 (SVO, 前置詞)と主要部後置型 (SOV, 後置詞)に大別されるが、近年、この区分に疑問が投げかけられている。この問題に正面から取り組んだ論文が、Saito, Lin and Murasugi (2008) である。日本語が典型的な主要部後置型言語であるのに対して、中国語は概して主要部前置型である。然るに、中国語名詞句は、表層的には主要部後置型であり、日本語名詞句と極めて類似する構造をもつとされてきた。本論文は、まず、N'削除現象を手がかりとして、日中語名詞句の詳細な比較研究を行い、これまで気付かれなかった数々の相違点を明らかにする。その上で、これらの相違が、中国語名詞句が実は主要部前置型であることを仮定することによって、一般統語理論から説明しうることを示す。この結論は、主要部前置型／後置型の区分を支持するものである。

　名詞句における類型的区分として、分類辞言語 (一冊、一本等) ／数辞言語 (複数形等) がある。日本語と中国語は、複数を表す接辞が極めて限られており (〜たち／〜men)、典型的な分類辞言語とされている。近年では、分類辞と数辞を同一のものとする仮説が広く受け入れられているが、この仮説に従えば、日中語は数辞を持たないことになる。Ueda (2009) は、国立清華大学の Hui-Chin Joyce Tsai 氏の協力を得て、分類辞と複数接辞の分布に関する詳細な日中語比較研究を行い、二言語間の相違が、Saito, Lin and Murasugi (2008) の分析および日中語が分類辞とは独立した数辞を有するとする仮説に基づいて説明されることを示す。このことは、数辞の普遍性を示唆し、言語間の相違が、単純に分類辞の有無に起因する可能性を提示する。

　宮本陽一は、以上の成果をふまえて、国立清華大学を訪問し、日中語関係節比較の詳細な共同研究を行った。Saito, Lin and Murasugi (2008) および Ueda (2009) の分析は、中国語に二種、日本語に一種の関係節があることを予測するが、この予測が正しいことが検証され、この時点で日中語名詞句の比較分析がほぼ完成するに至った。この成果もすでに "On Chinese and Japanese Relative Clauses and NP Ellipsis" (2010)と題する論文にまとめられており、オックスフォード論文集にて公刊される。

　名詞句の日中語比較は、プロジェクト前半の課題であったが、以上の 3 編の論文はすでに広く読まれており、代案の提示もなされている。本プロジェクトの分析によれば、中国語では分類辞が名詞句内の主要部であるのに対して、日本語では分類辞句が名詞修飾の要素であることになる。これに対して、例えば、Akira Watanabe (2010, "Notes on Nominal Ellipsis and the Nature of *no* and Classifiers in Japanese," *Journal of East Asian Linguistics*) は、日本語においても分類辞が中国語と同様にふるまうと考えられる例を提示し、反論を展開した。本プロジェクトでは、こうした反響をふ

まえ、斎藤衛、瀧田健介、村杉恵子を中心として、台湾・国立清華大学の研究協力者と共に、さらなる分類辞の日中語比較研究を進めている。この成果は、最終報告書に掲載する。また、オックフォード大学出版会より、日中語比較統語論に関する単著執筆の打診を受けており、この可能性も追究しつつ、2013 年度以降も研究を継続していく予定である。

(2) 削除現象

　現在の統語理論研究においては、削除現象の分析が重要な位置を占める。上記の名詞句構造の研究においても N'削除現象の考察が重要な役割を果たしたが、本事業では削除現象自体の研究にも取り組み、その成果が、Saito (2008), Saito and An (2010), Sugisaki (2009b, 2011), Takahashi (2008a, 2008b, 2009, to appear), Şener and Takahashi (2010), Kimura and Takahashi (2012), Dejima, Nakatani and Murasugi (2009), Kitahara (2011), Takita (2011, 2012)　として結実している。

　近年、日本語や韓国語で観察される項削除が、類型的に特異な現象として注目を集めている。本プロジェクトにおいても、項削除現象を重要な研究課題として取り上げ、多くの成果を得た。Şener and Takahashi (2010) は、日本語とトルコ語の比較を通して、項削除を可能にする文法のメカニズムを探る。日本語では、一致現象がなく、主語、目的語を含むすべての項が削除の対象となる。一方、トルコ語では、時制文において主語-動詞の一致現象がみられる。Şener and Takahashi は、トルコ語において、目的語や、動詞と一致しない主語のみが削除の対象となることを示して、一致の欠如と項削除の関連を考察し、さらにこの一般化が統語理論の帰結として導かれることを明らかにする。高橋大厚は、コネティカット大学の Hsu-Te Johnny Cheng 氏の協力を得て、中国語のデータを含め、さらに分析を深めた論文 "Argument Ellipsis, Anti-agreement, Scrambling" を完成させた。この論文もオックスフォード論文集において公刊される。

　この項削除現象の研究をふまえて、プロジェクト後半では、その理論的・経験的帰結を追究している。削除現象一般の分析として、(i)「空所」が PF (音声部門) における削除により生じるとする PF 削除分析と (ii)「空所」は統語的にも存在し、LF (意味解釈部門) において解釈が与えられるとする LF コピー分析があり、論争が続いている。Saito (2008), Şener and Takahashi (2010) では、項削除現象の分析から LF コピー分析を支持する議論を展開したが、最終的な結論を得るためには、ヨーロッパ系の言語でも観察される VP 削除、N'削除、スルーシング等、他の削除現象も合わせて考察する必要がある。本プロジェクトでは、現在この課題に取り組んでおり、第 15 回ワークショップ (2012 年 7 月 28 日〜29 日) に集中的に討議した。この成果は、高橋大厚がまとめ、最終報告書に掲載する予定である。また、Şener and Takahashi (2010) による項削除が一致の欠如に起因するとの提案は、日本語文法格の再分析という新たな研究課題を提示する。Noam Chomsky (2008) 等の一般理論では、文法格の認可と一致は表裏一体の関係にあり、文法格は一致を通して認可・予値されると考えられているからである。この課題には、斎藤衛を中心として取り組み、

成果が Saito (2012) として公刊されているが、「(5) 文法格」において概要を述べることとする。

　本事業の当初の計画では、日韓語が類似するため、日韓語比較は主要な研究テーマとしていなかったが、この二言語が類似するが故に、日韓語比較がミクロパラメーターの解明において重要な役割を果たしうることが明らかになってきた。これをふまえ、Aoyagi (2010), Saito and An (2010), Takita (to appear b) では、日韓語比較研究が展開されている。

　Saito and An (2010) は、日韓語の削除現象を体系的に比較・検討する。双方の言語において、同様の項削除現象が観察されることは知られていたが、スルーシング、N'削除については、詳細な比較がなされていなかった。Saito and An は、日本語と韓国語のスルーシングと呼ばれる現象が、共に、英語等の典型的なスルーシングとは異なり、項削除の一形態であることを示す。また、日本語において観察される N'削除が韓国語には存在しないことを明らかにし、この相違を属格挿入規則の定式化におけるミクロパラメーターによるものとして分析する。Takita (to appear b) は、この結論を受け入れつつも、制御構文という極めて限られたコンテクストで、日本語にも英語同様のスルーシング現象が存在することを指摘し、分析を提示する。さらに、この現象が韓国語にはないことを示して、動詞上昇に係わるミクロパラメーターにより、この相違の説明を試みる。Takita の分析によれば、日本語のスルーシングは、アイルランド語の VP 削除と類似する性質を有する。特に、主要部編入と削除の相互作用において同様のパターンが観察されることは、削除現象の具体的な分析に関して多くの帰結を有する。この点については、現在、アイルランド語削除現象の研究者である James McCloskey 氏と共同研究を遂行しており、その成果を最終報告書に掲載すべく準備を進めている。

(3) 移動現象

　移動現象については、Saito (2009, 2010, 2011), Aoyagi and Kato (2009), Kishimoto (2009, 2010, 2011), Sugisaki (2008, 2012), Takano (2010, 2012, to appear), Takita (2009b, 2012), Takita and Yang (to appear) 等、日本語におけるスクランブリングや主題化に関する多くの論文が公表された。まず、スクランブリングについては、Saito (2010) がそれまでの研究成果を統合しつつ、いわゆる A/A'の区別について新たな提案を行った。数量詞作用域、焦点化のデータに基づいて、TP の上位に Pred という機能範疇が位置することを示した上で、TP を着点とする A スクランブリングと PredP (あるいは CP) を着点とする A'スクランブリングが構造的に区別しうることを示したものである。この論文は、「(6) 文周縁部構造」で概観するヨーロッパ諸言語の左方周縁部と日本語の右方周縁部との比較研究の契機ともなった。

　この研究領域におけるプロジェクト前半期の最も顕著な成果は、高野祐二の "A Comparative Approach to Japanese Postposing" (オックスフォード論文集に収録) であろう。日本語の右方スクランブリングについては、様々な分析が提示されているが、この論文は、表層的には類似する現象を有するトルコ語との比較をふまえて、日本

語の右方スクランブリングの分析を行い、理論的帰結を検討したものである。まず、トルコ語の右方スクランブリングが、統語的移動としての性質を備えていることを示し、これと比較することによって、日本語の右方スクランブリングが、音韻部門での移動の性質を有することを明らかにする。次に、日本語における統語的な右方スクランブリングの欠如を、日本語の補文標識の形態的特徴から説明する。最後に、提示した分析が、日本語においても統語的移動が限られたコンテクストでは許容されることを予測することを指摘し、この予測が正しいことを示す。比較研究によって、日本語の記述を正確なものとし、さらに言語間のバリエーションを説明するこの論文は、本事業の意義を明確に示すものである。

　高野祐二は、その後、スクランブリング研究を発展させ、特に制御理論への帰結を詳細に検討して Takano (2010) として発表した。制御構文については、伝統的な PRO 分析と Norbert Hornstein 氏等が新たに提唱している移動分析がある。Takano (2010) は、制御文におけるスクランブリングの一見奇異に見えるふるまいを詳細に記述し、その上で、観察されたパターンが、本プロジェクトのスクランブリング分析と制御文の移動分析によって説明されることを示す。日本語に特有の現象を基に、制御文の移動分析を支持する議論を展開した独創的な論文である。この成果を受けて、2011 年度より、高野祐二と制御理論を専門とする藤井友比呂が、制御文の移動分析を支持する日本語のデータをより広範に収集し、まとめている。まず、藤井が Fujii (2012) において、本プロジェクト全般の研究成果をふまえつつ、自らの博士論文を発展させて、日本語制御文の基礎的な分析を提示した。これを基礎とした共同研究の成果は、2013 年 2 月に予定されている第 18 回ワークショップで検討し、最終報告書に掲載することになっている。

(4) 計量詞の作用域と Wh 句の解釈

　この研究領域における成果としては、Kishimoto (2008b), Miyamoto (2008, 2009a, 2009b), Takita and Yang (to appear) があるが、以下、藤井友比呂と瀧田健介の Wh 疑問文に関する研究を中心に成果を示す。いずれも、研究協力者との共著論文として、オックスフォード論文集に収録される。

　1982 年の C.-T. James Huang 氏による研究 (MIT 博士論文) において、日中語は、顕在的な Wh 移動を有しない典型的な言語として、同様の分析が与えられた。この研究を契機として、日中語の双方においてより詳細な研究がなされ、両言語間の共通性のみならず、相違も明らかになってきたが、本格的な比較研究はなされていなかった。藤井は、瀧田とともに、清華大学の研究協力者 W.-T. Dylan Tsai 氏, Barry C.-Y. Yang 氏の協力を得て、Huang 氏によって指摘され、Tsai 氏の博士論文 (1995, MIT) において分析が深められた名詞 Wh 句と副詞 Wh 句の非対称性を、日中語比較研究を通して検証した。この成果は、4 名の共著論文 "Comparative Remarks on Wh-adverbials in-situ in Japanese and Chinese" として上記論文集にて公刊される。(Fujii, Takita, Yang and Tsai (to appear)) 瀧田は、Barry C.-Y. Yang 氏との共著論文 (Takita and Yang (to appear)) において、非優位性現象の有無等にみられる日中語間の相違を

詳細に検討した。まず、副詞 Wh 句の特異な性質を明らかにしつつ、Tsai 氏の非選択的束縛と非顕在的移動による分析を発展させる。その上で、日中語の相違を取り上げ、名詞 Wh 句が、中国語では非選択的束縛によって解釈されるのに対して、日本語では非顕在的移動によって認可されるという仮説を提示して、両言語間の様々な相違に統一的な分析を与えている。

(5) 文法格

　文法格も統語理論における主要な研究テーマであり、Murasugi and Watanabe (2009), Koizumi (2008), Ochi (2009), Sugisaki (2009a), Sawada, Murasugi and Fuji (2010), Takeuchi (2010), Kishimoto (2010, 2011), Saito (2012), Kitahara (2011, 2012) 等、多くの論文が公表された。まず、独創的な記述研究として、Takeuchi (2010) および岸本秀樹、浦啓之による日本語とインド諸言語の比較研究を紹介する。次に、項削除分析の成果をふまえて、日本語文法格を再分析し、句構造形成のメカニズムを論じた Saito (2012), Kitahara (2012) を概観する。

　<u>Takeuchi (2010)</u> は、まず、日本語における例外的格付与現象を詳細に検討し、極小主義理論における素性移行メカニズムを採用しつつ、これまで指摘されていた経験的問題を解決する新たな分析を提示する。次に、コネティカット大学の研究協力者 Serkan Şener 氏の協力の下に、日本語とトルコ語の比較研究を行い、興味深い多くの相違点を指摘する。そして最後に、素性移行を随意的に行う補文標識の差異というミクロパラメーターによって、これらの相違点が統一的に説明されることを示す。

　岸本と浦の研究は、非主格主語に関するものである。非主格主語は、インド・アーリア系、ドラヴィダ系を問わず、多くのインドの言語において観察され、インドにおける言語学の主要な研究テーマとなっている。本事業では、岸本と浦が、インド EFL 大学の研究協力者 K. A. Jayaseelan 氏と R. Amritavalli 氏の協力を得て、非主格主語に関する比較研究を行っており、岸本の研究成果は "Dative/Genitive Subjects in Japanese: A Comparative Perspective"、浦の研究成果は "Dative Subjects and Impersonals in Null-subject Languages"と題する論文にまとめられている。(いずれもオックスフォード論文集に収録。) 岸本は、まず、日本語の記述的研究によって、ヒンディ、ベンガリ等のインド・アーリア系言語に見られる経験主属格主語が、日本語においても観察されることを示す。その上で、Jayaseelan 氏、Amritavalli 氏のヒンディ語分析を基礎として、日本語の属格主語文、与格主語文を分析し、日本語の特徴を説明するパラメーターを追究する。

　他方、浦は、マラヤラム、カンナダ等のドラヴィダ系言語には、与格主語が TP 指定部にある日本語タイプの与格主語構文は存在しないという Jayaseelan, Amritavalli 両氏の指摘に着目し、その原因を探る。はじめに、日本語においても与格主語が予想に反して許容されない場合があることを示し、複合述部による経験主意味役割の付与が、項の TP 指定部への移動を不可能にするとの分析を示す。次に、この分析をマラヤラム語に適用する可能性を検討し、与格主語の有無に関する日本語とマラヤラム語の相違の説明を試みる。普遍文法の枠組みを仮定した日本語とインド諸言語

の比較研究は、まだ開始されたばかりであり、多くの課題を残すが、岸本論文、浦論文が今後の研究の基礎となることが期待される。

「(2) 削除現象」で触れたように、本プロジェクトの項削除分析により、日本語文法格を根本的に見直す必要が生じた。1960 年代以降、日本語文法格の特殊性が様々な形で論じられてきたが、1990 年代から、英語と同様の形で分析するアプローチが主流になっている。(例えば、Hiroyuki Ura (1999), Ken Hiraiwa (2001), Masahiko Takahashi (2010) を参照。) 主語−時制、目的語−動詞の一致が基本としてあり、文法格をこの操作の一部に位置付ける考え方である。一方で、日英語比較研究においては、日本語の特殊性を一致の欠如により説明しようとする試みがなされてきた。S.-Y Kuroda (1988) が代表的な論文として挙げられる。本プロジェクトにおける項削除の分析は、これを発展させ、日本語、韓国語、トルコ語、中国語における項削除現象が一致の欠如により可能になることを提案したものである。この結論は、日本語の文法格が、一致とは独立したものであることを含意する。

Saito (2012) は、この問題に取り組み、日本語文法格の新たな分析を提示した論文である。まず、日本語文法格の特徴を詳細に検討した上で、PP の格、主格目的語の広作用域等、一致分析とは相容れない現象が多々あることを指摘する。次に、日本語文法格を一致ではなく、併合の一部として位置付けることを提案し、Junri Shimada (2007), Tonoike (2009) の句構造形成メカニズムを採用しつつ、具体的な分析を提示する。さらに、これまで問題とされてきた属格主語の分布や日本語の主要部後置型句構造が、この分析の帰結として説明されることを示す。この成果を受けて、Kitahara (2012) は、句構造形成という文法上最も基本的な操作において、日英語間に相違があるのか、という問いに答えようとしている。両言語において、句構造が同様に形成され、相違は一致の有無に還元できるのか、それとも、一致の有無が句構造形成のメカニズムそのものに影響を与えるのか、という問いである。Kitahara (2012) は後者の可能性を追究し、帰結を論じており、明確な結論が示されたわけではないが、典型的な主要部前置型言語である英語と典型的な主要部後置型言語である日本語の根源的な相違に迫る論文として、今後、注目されることになろう。斎藤と北原は、現在も研究を継続しており、Saito (2012), Kitahara (2012) をより発展させた論文を最終報告書に掲載する予定である。

(6) 文周縁部の構造

Luigi Rizzi 氏のイタリア語左方周縁部に関する研究 (1997) 以降、談話構造を示す文上層部の統語研究が、特にロマンス系言語、ゲルマン系言語のデータに基づいて盛んに行われている。談話的言語と言われる日本語とヨーロッパ系言語の比較を行うには、格好な材料を提供しているが、日本語は主要部後置型である上にスクランブリングを多用するために、文左方周縁部の構造が捉えにくい。そこで、Saito (to appear a) は、文右方周縁、特に補文標識の階層構造に注目し、日本語とスペイン語およびイタリア語の比較を行った。まず、補文標識「と」が通常仮定されているように命題の補文標識ではなく、スペイン語の *que* と同様に直接引用の言い換えを埋

め込む機能を有し、また、この機能に特化した補文標識であることを示す。次に、「と」ではなく「の」が命題文の補文標識であることを例証し、「の-か-と」という階層性がロマンス系言語の Finite-Force-Report に対応することを示す。最後に、主文のみに生起すると言われてきた主題の補文内の分布を再検討して、Finite-*(Topic)-Force-Report の階層を提示する。この結論は、日本語の文周縁部構造がイタリア語に極めて類似していることを示す。Rizzi (1997) では、Force-*(Topic)-(Focus)-*(Topic)-Finite というイタリア語の構造が提案されているが、これに従えば、日本語にはスペイン語でも観察される Report があり、Focus が欠如していることのみがイタリア語との相違となる。初めて日本語とヨーロッパ系言語の周縁部構造の類似性を指摘することにより、パラメター研究の展望も開けたと言えよう。

　Saito and Haraguchi (to appear) は、この分析をモーダルと終助詞に拡張する。モーダルについては上田由起子 (2007)、終助詞については遠藤善雄 (2010) の記述的研究があるが、これを発展させ、それぞれの階層性を明確にするとともに、階層性そのものを説明することを試みる。日本語のモーダルには、英語と同様に単一条件が課せられるが、これを形態的、意味的選択制限から導く。また、終助詞は分布が主文に限られる言語行為的要素であることを例証し、「わ-よ-ね/な」という階層性が、意味的選択と言語行為の整合性から導かれることを示す。この研究は、階層性の指摘に留まることが多かったいわゆるカートグラフィー研究を一歩進めて、極小主義理論をふまえて階層性の説明性に踏み込んだものである。また、モーダルの多くが接辞であり、終助詞を多用する日本語の特徴に依拠した議論を展開しており、日本語研究に基づく理論研究の典型でもある。

(7) 言語獲得

　言語獲得研究は、村杉恵子と杉崎鉱司を中心に展開され、すでに多くの論文が公表されている。統語研究を検証し、統語研究にヒントを与える典型的な論文としては、Murasugi and Sugisaki (2008), Sugisaki (2010, 2011), Fuji, Hashimoto and Murasugi (2008a), Murasugi (2010) 等がある。また、言語獲得領域固有の独想的研究テーマとして、幼児の言語獲得段階の比較研究をあげることができる。Murasugi and Fuji (2009), Murasugi and Nakatani-Murai (2009), Dejima, Nakatani and Murasugi (2009), Murasugi (2011, 2012) を中心に、後者の研究成果を概観する。

　幼児の発話は、一語文から始まり、いくつかの段階を経て、主張、疑問、依頼などを文法的に表す段階に至る。文法獲得の発達段階に関する仮説として、下位の動詞から始めて徐々に上位の時制、補文標識に至るという語彙範疇仮説 (Andrew Radford)、当初から上位構造を仮定するという完全構造仮説 (Kenneth Wexler)、幼児は上位構造を獲得しているものの、部分構造を用いるという上位構造省略仮説 (Luigi Rizzi) がある。本プロジェクトにおける言語獲得研究では、これらの仮説を検証するために有用と考えられる日本語のデータを収集し、それに基づいて理論的研究を遂行することをめざしている。

上記のいずれの仮説も、英語等の言語において、主文に不定動詞を用いる発達段階があることが指摘し、重要なデータとして位置付けている。しかし、この発達段階は、代名詞省略 (あるいは項削除) を許容しない言語においてのみ観察されると仮定されており、関連するデータは日本語からは得られないとされていた。これに対して、Murasugi and Fuji (2009) は、日本語の発達段階を詳細に分析し、主文不定詞段階の普遍性を示す。代名詞省略が可能な言語は、典型的に、動詞の語幹をそのまま語として使うことができず、時制等の接辞を加えてはじめて動詞が語となる。したがって、幼児が「不定形」を発話しないことは当然といえる。しかし、Murasugi and Fuji は、発話データの分析に基づき、例えば日本語において、英語の不定動詞発話に対応する段階があることを示す。具体的には、同様の時期に、日本語を話す幼児は、文の時制に関わらず動詞の過去形を用いる。このことは、過去形が、不定形と同様に「無標の形態」と捉えられていることを示し、さらに、言語の段階的発達に普遍性があることを示唆する。この結果をふまえ、村杉恵子を中心として、現在日本語データに基づく上記三仮説の検証を進めつつある。また、データ分析に基づいて、時制、補文標識、文法格等の発達過程とその連関も明確になってきており、幼児による日本語獲得の過程そのものが明らかになりつつある。これらの成果は、最終報告書に掲載することとしている。

　詳細な日本語発話データの分析の過程で、日本語を母語とする幼児が極めて早い段階で終助詞を多用するようになることが示された。これまでの分析では、終助詞は文上位構造に位置するため、語彙範疇仮説や上位構造省略仮説にとって問題となりうる事象である。この現象についても、村杉恵子、中谷友美を中心に平行して研究を進めた。まず、Murasugi and Nakatani-Murai (2009), Dejima, Nakatani and Murasugi (2009) は、喃語の分析を行い、一語文以前の段階から、主張、疑問、依頼などの概念があり、これがイントネーションで表されていることを示す。これにより、幼児が極めて早い段階から、言語行為の基本概念を有していることが明らかにされた。この結果に基づき、Murasugi (2011, 2012) では、言語行為概念の具現化として幼児の終助詞を分析する。また、終助詞を主文に限定された言語行為要素として、統語構造の根幹の外部に位置付ける Saito and Haraguchi (to appear) の分析をふまえて、語彙範疇と言語行為要素から出発し、中間に位置する時制、補文標識等の機能範疇を獲得していく言語発達モデルを提示する。現在は、終助詞に類似する小辞がフラマン語でも多用されることから、ゲント大学の Liliane Haegeman 氏の協力を得て、さらに比較研究を行っている。

＜問題点＞
　新型インフルエンザの流行や東日本大震災の影響により、ワークショップや共同研究を延期せざるを得ない事態も生じたが、研究員、研究協力者の努力により、研究活動を計画通りに進めることができた。研究を進めていくにつれ、プロジェクトの根幹に関わる理論的成果があげられた研究領域と未だに記述的貢献に留まっている研究領域が出てきたが、これは致し方ないものと考えている。予想を超える成果

が得られていることから、事業終了後も研究を継続し、成果を公表していく必要がある。論文集の公刊については上述した通りであるが、これに加え、研究成果の発信を目的とした大規模なシンポジウムも企画する予定である。

＜評価体制＞

　毎年度末に、自己点検・評価報告書を提出し、学内の評価を受けている。一定の役割分担はあるものの、研究員全員がプロジェクト全体の活動に参加し、また、研究者対象の公開イベントも多く開催しているので、常に内外から示唆を受けており、それに出来るだけ応えるようにしている。外部評価は実施しなかったが、オックスフォード論文集の公刊に加え、研究者が海外のいわゆる一流の査読付きジャーナルに論文を XX 編公表している。（掲載予定を含む。）これは、本プロジェクトの研究が海外においても高い評価を受けていることを示すものと考えている。

＜研究期間終了後の展望＞

　本研究プロジェクトの研究組織を維持し、研究を継続する。今後は、海外の研究プロジェクトと連携しつつ、主要テーマを追究していく予定である。名詞句構造の分析では、台湾・国立清華大学との協力関係を維持する。加えて、イギリス・ヨーク大学が名詞句に関するパラメターを主要テーマとする大規模プロジェクトを 11 月から開始することになっており、すでに共同研究の打ち合わせを始めている。コネティカット大学も 9 月より心理学・言語学の大規模プロジェクトを開始しており、本学が正式な協力機関となっている。文法格、項削除、言語獲得の研究を中心に協力体制を継続していく予定である。項削除については、ケンブリッジ大学が空項に関する大規模研究プロジェクトを遂行しており、本学プロジェクトの協力が要請されている。さらに、フランクフルト大学の関係節プロジェクトとも連携の話し合いを始めている。本年度末の最終報告書作成と総括をふまえて、2013 年度以降の具体的な研究計画を作成するが、準備はほぼ整っている。また、上述したように、オックフォード論文集の続編および日中語比較統語論に関する単著の刊行も視野に入れて、研究を継続する予定である。

＜研究成果の副次的効果＞

　本研究プロジェクトの目的は、比較統語論研究を展開して統語理論の発展に寄与することにあるが、比較研究をふまえた日本語の正確な記述においても、大きな成果があがっている。これも含めて、成果をウェブ上に公開し、国内外の研究者と共有するようにする。

１２　キーワード（当該研究内容をよく表していると思われるものを８項目以内で記載してください。）

（１）　比較統語論　　　（２）　普遍文法　　　　　（３）　パラメター
（４）　生成文法　　　　（５）　言語獲得　　　　　（６）　言語発達
（７）　日本語文法　　　（８）　国際共同研究

１３　研究発表の状況（研究論文等公表状況。印刷中も含む。）

　著書・学術論文・学会発表については「研究業績一覧」、シンポジウム・学会等の実施状況については「活動報告」を参照されたい。

＜インターネットでの公開＞
http://www.nanzan-u.ac.jp/LINGUISTICS/index.html
　事業の目的と概要、研究員と大学院生の紹介（執筆論文を含む）、イベントの案内および報告、機関誌 Nanzan Linguistics 等を掲載し、公開している。

＜機関誌 Nanzan Linguistics＞
　年１回刊行。論文数編と活動報告を掲載し、国内外の研究機関、研究者に発送している。
　研究プロジェクトを遂行する際は、通常その成果を集めた特別号を発行するが、本プロジェクト中間報告については、オックスフォード大学出版会から論文集を刊行するため、これを行わなかった。
　(Nanzan Linguistics 5 (2009 年 3 月), Nanzan Linguistics 6 (2010 年 4 月), Nanzan Linguistics 7 (2011 年 6 月), Nanzan Linguistics 8 (2012 年 3 月) の目次については、資料４を参照されたい。)

１４　その他の研究成果等

　特になし。

１５　「選定時」及び「中間評価時」に付された留意事項とそれへの対応

＜「選定時」に付された留意事項＞
　該当なし

＜「中間評価時」に付された留意事項＞
「できれば、一般社会に対する発信も努力した方がよい」とのご意見をいただいた。

＜「中間評価時」に付された留意事項への対応＞
　以下の一般・学部生向け講演会を新たに企画・実施した。

2011 年 3 月 4 日 (共催、外国語学部英米学科主催)
　Thomas Hun-Tak Lee 氏 (香港中文大学)
　"Logical Structures in Early Child Language" – 幼児言語に見られる論理性
2011 年 7 月 8 日
　Soowon Kim 氏 (アメリカ防衛省言語局)
　"Locative-Marked Agentive Subjects in Korean" – 主語格助詞の日韓語比較
2011 年 9 月 30 日
　Diane Lillo-Martin 氏 (コネティカット大学)
　"Sign Language and Language Universals" – 手話にみられる人間言語の特徴
2012 年 1 月 6 日
　James Douglas Saddy 氏 (レディング大学)
　"Measuring Language in the Brain" – 言語の脳科学入門

活動報告

2008 年度〜2012 年度

コロキュアムとワークショップ一覧 2008 ~ 2012

<第 24 回コロキュアム>
2008 年 6 月 7 日（土) 13:30 ~ 17:00
南山大学名古屋キャンパス L 棟 9 階会議室 910　参加者 40 名

Satoshi Tomioka (University of Delaware)
"Contrastive Topic as Wide(st)-scope Focus"

Kyle Johnson (University of Massachusetts, Amherst)
"Fitting a Multidominant Model of Movement to Reconstruction"

<第 25 回コロキュアム>
2008 年 7 月 19 日（土）13:00 ~ 18:00
南山大学名古屋キャンパス J 棟 1 階プレゼンテーションルーム　参加者 33 名

Roger Martin (Yokohama National University)
"On the Nature of Chains and Agree"

Atsushi Ito (Nanzan University)
"NP-movement in Resultatives"

Yoichi Miyamoto (Osaka University)
"On the Comparative Operator in Japanese"

<**26 回コロキュアム**>
2008 年 7 月 30 日（水）16:00 ~ 17:30
南山大学名古屋キャンパス J 棟 1 階プレゼンテーションルーム　参加者 25 名

Peter Svenonius (University of Tromsø)
"On the Timing of Lexical Insertion"

<**第 3 回統語論ワークショップ**>
2008 年 8 月 3 日（日）12:45 ~ 19:00
南山大学名古屋キャンパス L 棟 9 階会議室 910　参加者 61 名

Juan Uriagereka (University of Maryland)
"Re-examining Sub-Extraction: A Response to Stepanov"

Yuji Takano (Kinjo Gakuin University)
"Scrambling and Control"

Daiko Takahashi (Tohoku University)
"How to Find Antecedents for Argument Ellipsis"

Howard Lasnik (University of Maryland)
"'Raising to Object' in Small Clauses and Full Clauses"

<Tsing Hua-CUHK-Nanzan Joint Workshop on Comparative Syntax and Language Acquisition>
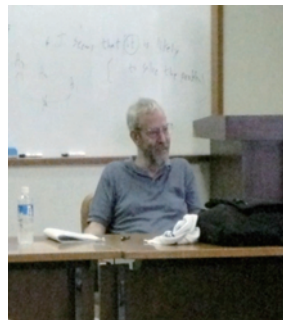
2008 年 9 月 17 日（水）14:00～17:00
南山大学名古屋キャンパス J 棟 5 階 L5　参加者 30 名

Mamoru Saito (Nanzan University)
"Semantic and Discourse Interpretation of the Japanese Left Periphery"

Hui-Yu Huang (National Chiao Tung University)
"Ambiguity in the [V u/bo NP] Construction in Taiwanese"

Jhao-Ling Li (National Tsing Hua University)
"The Syntax of Prefix Concord in Saaroa"

2008 年 9 月 18 日（木）14:00～17:00
南山大学名古屋キャンパス L 棟 9 階会議室 910　参加者 28 名

T.-H. Jonah Lin (National Tsing Hua University)
"Occurrence of Event and Locative Subjects in Mandarin Chinese"

Yasuki Ueda (Nanzan University)
"On Plurality in Japanese"

Hui-Chin Tsai (National Tsing Hua University)
"Modifier Licensing in Chinese Noun Phrase"

Chung-Yu Yang (National Tsing Hua University)
"Intervention Effects as Minimality and Competition Effects"

Mayumi Dejima, Tomomi Nakatani, and Keiko Murasugi (Nanzan University)
"The Emergence of Speech Act Phrase: Evidence from a Longitudinal Study of two
　Japanese-speaking Infants"

Thomas Hun-Tak Lee and Aijun Huang (Chinese University of Hong Kong)
"The Count-Mass Distinction in Chinese and the Acquisition of Classifiers"

<The First Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2008 年 11 月 22 日（土）14:00～16:00
南山大学名古屋キャンパス J 棟 1 階プレゼンテーションルーム　参加者 35 名

Masashi Nomura (Chukyo University)
"How is It that Nominative Case Can Surface on NPs Other than Finite Subjects?"

Hideki Kishimoto (Kobe University)
"Some Issues on the Syntax and Morphology of Arguments"

2008 年 11 月 23 日（日）10:00～17:00
南山大学名古屋キャンパス L 棟 9 階会議室 910　参加者 33 名

Hiroshi Aoyagi (Nanzan University)
"On the Left-edge Puzzle: How Does Scrambling Interact with Semantics and
 Information Structure?"

Yuji Takano (Kinjo Gakuin University)
"Scrambling and the Theory of Movement"

Keiko Murasugi (Nanzan University)
"Underspecification of Functional Heads in Language Acquisition"

Koji Sugisaki (Mie University)
"Evaluating Syntactic Analyses with Children:
 The Case of Swiping and Intensional Transitives"

Yoichi Miyamoto (Osaka University)
"On Ways of Measurement and Structure of NP"

<The Second Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2009 年 1 月 15 日（木）15:30 ~ 18:15
南山大学名古屋キャンパス L 棟 9 階大会議室 910　参加者 35 名

Duk-Ho An (Nanzan University)
"On the Nature of Genitive Case in Korean: With Reference to Japanese"

Shigeru Miyagawa (MIT)
"Distinguishing A and A' Movements without Reference to Case"

<The Third Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2009 年 3 月 15 日（木）10:00 ~ 18:30
南山大学名古屋キャンパス L 棟 9 階大会議室 910　参加者 53 名

W.-T. Dylan Tsai (National Tsing Hua University)
"EPP as a Topic Feature: Evidence from Chinese Applicatives and Reflexive Adverbials"

Daiko Takahashi (Tohoku University)
"Comparative Syntax of Argument Ellipsis"

Yasuki Ueda (Nanzan University)
"Number in Classifier Languages"

R. Amritavalli (EFL University, Hyderabad)
"Case and Phi-features"

Hiroyuki Ura (Kansei Gakuin University)
"Some Notes on the Interaction of Case with Subjecthood"

K. A. Jayaseelan (EFL University, Hyderabad)
"Case Hierarchy and Theories of Case"

<The Fourth Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2009 年 7 月 25 日（土）15:30 ~ 18:30
南山大学名古屋キャンパス F 棟 13 教室　参加者 30 名

Lin-Yu Madelaine Chien (National Tsing Hua University)
"The Acquisition of Transitive Predicates in Mandarin Chinese"

Tomohiro Fujii (Yokohama National University)
"Nominalizing Complementizers and Control/Raising"

2009 年 7 月 26 日（日）10:00 ~ 17:30
南山大学名古屋キャンパス JB12 教室　参加者 32 名

Mamoru Saito (Nanzan University)
"Clause Types and the Japanese Right Periphery"

Hui-Chin Joyce Tsai (National Tsing Hua University)
"Remarks on Ordinal Constructions in Mandarin Chinese"

Takashi Munakata (Yokohama National University)
"The Division of C-I and its Consequences"

Tzong-Hong Jonah Lin (National Tsing Hua University)
"Finiteness of Clauses and QR"

<第 27 回コロキュアム>
2009 年 9 月 3 日（木）16:30 ~ 18:00
南山大学名古屋キャンパス L 棟 9 階大会議室 910
参加者 45 名

Hideki Kishimoto (Kobe University)
"Experiencer Subjects and Transitive Nominals in Japanese"

<The Fifth Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2009 年 9 月 13 日（日）14:00 ~ 18:30
南山大学名古屋キャンパス D 棟 3 階 D32 教室　参加者 48 名

Yuji Takano (Kinjo Gakuin University)
"Postposing in Japanese and Turkish"

Kensuke Takita (Nanzan University) and Barry C.-Y. Yang (National United University)
"Feature Valuation and Antisuperiority"

Jun Abe (Tohoku Gakuin University)
"Oblique vs. Remnant Movement: A Case of Japanese Multiple Sluicing"

Daiko Takahashi and Hiroko Kimura (Tohoku University)
"A *Wh*-in-situ Analysis of Sluicing"
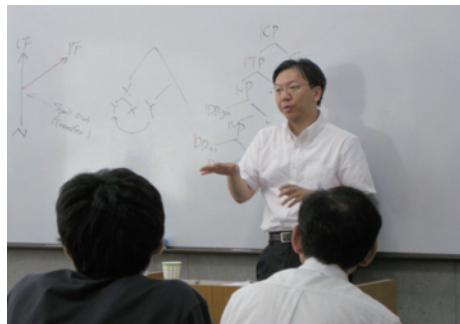
<The Sixth Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2009 年 10 月 28 日（水）13:00 ~ 18:00
南山大学名古屋キャンパス L 棟 9 階大会議室 910　参加者 28 名

Koji Sugisaki (Mie University)
"Configurational Structure in Child Japanese"

Keiko Murasugi, Tomomi Nakatani, and Chisato Fuji (Nanzan University)
"The Roots of Root Infinitive Analogues: The Surrogate Verb Forms Common in Adult and Child Grammars"

Naoko Sawada, Keiko Murasugi, and Chisato Fuji (Nanzan University)
"A Theoretical Account for the 'Erroneous' Genitive Subjects in Child Japanese and the Specification of Tense"

Aafke Hulk (University of Amsterdam)
"The Role of Gender and Number Features in the L1/L2 Acquisition of Determiners and (Pro)nouns: A Cross-linguistic Perspective"

<連続講演会>
2009 年 12 月 12 日（土）13:00 ~ 18:00
2009 年 12 月 13 日（日）10:00 ~ 11:30
南山大学名古屋キャンパス J 棟 1 階プレゼンテーションルーム参加者 30 名

Hisatsugu Kitahara (Keio University)
"Narrow Syntax in Minimalism:
Syntactic Operations and Their Applications"

<第 28 回コロキュアム>
2009 年 12 月 19 日 15:00 ~ 16:30
南山大学名古屋キャンパス D 棟 3 階 33 教室　参加者 18 名

Junri Shimada (Keio University)
"A New Outlook on Head Movement"

<第 29 回コロキュアム>
2010 年 1 月 9 日 13:30 ~ 17:00
南山大学名古屋キャンパス D 棟 3 階 D32 教室　参加者 21 名

Nilufer Şener (University of Connecticut)
"On the Relation between Evidentiality and Free Choice Herhangi bir in Turkish"

Serkan Şener (University of Connecticut)
"Phrases of Nouns in Turkish"

<The Seventh Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2010 年 1 月 31 日（日）10:00～18:00
南山大学名古屋キャンパス L 棟 9 階大会議室 910　参加者 36 名

Tomohiro Fujii (Yokohama National University) and Kensuke Takita (Nanzan University)
"Wh-adverbials in-situ in Japanese and Mandarin Chinese"

Rahul Balusu (EFL University)
"The Semantics of Reduplicative Numerals in Telugu"

Naoko Sawada and Keiko Murasugi (Nanzan University)
"'Erroneous' Genitive Subjects in Child Grammar"

B. R. Srivatsa (EFL University)
"Word Order in Sanskrit"

Hideki Kishimoto (Kobe University)
"Dative/Genitive Subjects in Japanese: A Comparative Perspective"

K. A. Jayaseelan (EFL University)
"The Syntax of the Dative Case"

<講演会> 外国語学部英米学科主催・言語学研究センター共催
2010 年 2 月 22 日（月）13:30～17:30
南山大学名古屋キャンパス M 棟 1 階 MB1　参加者 42 名

Masatake Arimoto (Nanzan University)
"Introduction: Basics in Binding"

Kamil Deen (University of Hawai'i)
"Binding in Thai: The Case for Nativism"

Keiko Murasugi (Nanzan University)
"Introduction to Grammar Acquisition"

Bonnie Schwartz (University of Hawai'i)
"Let's Go on a Hawaiian Tour (of Child L2 Acquisition)"

<The Eighth Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2010 年 3 月 14 日（日）10:00 ~ 18:00
南山大学名古屋キャンパス L 棟 9 階大会議室 910　参加者 37 名

Daiko Takahashi (Tohoku University)
"Argument Ellipsis, Anti-agreement, and Scrambling"

Yoichi Miyamoto (Osaka University)
"On Chinese Relative Clauses and NP-Ellipsis"

Kensuke Takita (Nanzan University) and Barry C.-Y. Yang (National UnitedUniversity)
"Feature Valuation and Antisuperiority

Hiroyuki Ura (Kwansei Gakuin University)
"Dative Subjects and Impersonals in Null-subject Languages"

Yuji Takano (Kinjo Gakuin University)
"A Comparative Approach to Japanese Postposing"

Hajime Takeuchi (Nanzan University)
"Exceptional Case Marking in Japanese and Optional Feature Inheritance

<講演会>
2010 年 5 月 15 日（土）14:00 ~ 17:00
南山大学名古屋キャンパス J 棟地下 1 階 JB12 教室 参加者 61 名

柴谷方良氏 (Rice University)
"On the Typology of Relative Clauses"

<第 30 回コロキュアム>
2010 年 7 月 31 日（土）16:30 ~ 18:00
南山大学名古屋キャンパス L 棟 9 階大会議室 910　参加者 33 名

小畑美貴氏（三重大学）
「素性継承の一般化理論
－統語システムからインターフェイスへの「転送」のメカニズムについて－」

<The Ninth Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2010 年 9 月 12 日（日）10:00 ~ 18:10
南山大学名古屋キャンパス L 棟 9 階大会議室 910　参加者 42 名

Pei-Jung Kuo (National Chiayi University)
"Applicative Projections in the vP Periphery"

Kazunori Kikushima (National Tsing Hua University)
"High Applicative and Transference Verbs in Japanese and Mandarin Chinese"

Duk-Ho An (Konkuk University)
"Issues on Case in Korean"

Hajime Takeuchi (Nanzan University)
"Exceptional Case Marking in Japanese and Optional Feature Transmission"

Jui-Yi Zoey Chung (National Tsing Hua University)
"Investigating the Syntax of Postverbal Modal in Hakka"

Masao Ochi (Osaka University)
"Numeral Classifier and Extended Nominal Projections in Japanese (and Chinese)"

<第31回コロキュアム>
2010 年 11 月 13 日（土）10:00～12:45
南山大学名古屋キャンパス D 棟 3 階 D33　参加者 25 名

Stephanie Solt (ZAS Berlin)
"The Semantics of Quantity Adjectives"

William McClure and Mamori Sugita (Queens College and the CUNY Graduate Center)
"Progressive, Perfective, and Experiential: A Unified Semantics for Te-iru"

<The Tenth Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2010 年 11 月 13 日（土）14:15～17:00
南山大学名古屋キャンパス D 棟 3 階 D33　参加者 25 名

Koji Sugisaki (Mie University)
"The Acquisition of Argument Ellipsis in Japanese"

Tomomi Nakatani and Keiko Murasugi (Nanzan University)
"The Use of Onomatopoeia as Root Infinitives in Child Japanese"

<第 32 回コロキュアム>
2010 年 11 月 25 日（木）17:00 ~ 18:45
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 18 名

Friederike Moltmann (IHPST, Paris)
"Identificational Sentences"

<第 33 回コロキュアム>
2010 年 12 月 3 日（金）17:00 ~ 18:30
南山大学名古屋キャンパス D 棟 D34　参加者 20 名

倉橋 農 (大阪大学)
「フォーカスと意味論的抱合：その形式と機能」

<第 34 回コロキュアム>
2010 年 12 月 17 日（金）15:15 ~ 16:45
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 37 名

田中　秀和 (University of York)
「英語の目的語の統語的位置について」

<第 35 回コロキュアム>
2011 年 2 月 15 日（火）16:00 ~ 17:30
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 33 名

Norbert Hornstein (University of Maryland)
"In Defense of Sidewards Movement"

<第 1 回研究会　国立国語研究所共同研究プロジェクト>
(言語学研究センター共催)
2011 年 2 月 19 日（土）13:30 ~ 18:40
南山大学名古屋キャンパス D 棟 D34　参加者 46 名

杉崎　紘司 (三重大学)
"Constraints on Argument Ellipsis in Child Japanese"

中谷　友美・村杉　恵子 (南山大学)
「主節不定詞としてのオノマトペ」

村杉　恵子 (南山大学)
「幼児の言語獲得からみる言語の多様性」

言語獲得討論
特別講演：高橋　大厚 (東北大学)
"Parallelism for Argument Ellipsis"

2011 年 2 月 20 日（日）10:00 ~ 11:50
南山大学名古屋キャンパス D 棟 D34　参加者 42 名

斎藤　衛 (南山大学)
「併合による格認可仮説の再考」

岸本　秀樹 (神戸大学)
「日本語の所有者上昇について」

<**英米学科 GP 主催講演会**> (言語学研究センター共催)
2011 年 3 月 4 日（火）13:30 ~ 15:00
南山大学名古屋キャンパス B 棟 4 階 B46 教室　参加者 24 名

Thomas Hun-Tak Lee (The Chinese University of Hong Kong)
"Logical Structures in Early Child Language"

<**第 36 回コロキュアム**>
2011 年 3 月 5 日（火）13:30 ~ 18:00
南山大学名古屋キャンパス J 棟 1 階 P ルーム　参加者 31 名

Hiroaki Tada (Fukuoka University)
"Quantificational state descriptions in Japanese"

Takuya Goro (Ibaraki University)
"The rise of logical connectives in first and second language acquisition"

Thomas Hun-Tak Lee and Margaret Ka-yan Lei (The Chinese Univeristy of Hong-Kong)
"Acquisition of the postverbal universal quantifier affix in Chinese"

<第 37 回コロキュアム>
2011 年 5 月 27 日（金）17:00 ~ 18:30
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 30 名

Hideaki Yamashita
"What Makes Right Dislocation of Wh-elements in Tokyo Japanese and Yatsushiro Japanese (Im)Possible?"

<講演会>
2011 年 7 月 8 日（金）15:15 ~ 16:45
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 43 名

Soowon Kim (U.S. Defense Language Institute)
"Locative-Marked Agentive Subjects in Korean"

<The Eleventh Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2011 年 7 月 9 日（土）13:00 ~ 18:30
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 38 名

Mamoru Saito (Nanzan University)
"What is Japanese Case for: Agree or Merge?"

Duk-Ho An (Konkuk University)
"On Complementizers in Korean and Japanese"

Hideki Kishimoto (Kobe University)
"Case and Subject Raising in Japanese"

Soowon Kim (U.S. Defense Language Institute)
"Syntactic Case, Arguments, and Adjuncts"

<講演会>
2011 年 9 月 30 日（金）15:15～16:45
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 40 名

Diane Lillo-Martin (University of Connecticut)
"Sign Language and linguistic Universals"

<The Twelfth Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2011 年 10 月 1 日（土）10:30～17:30
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 30 名

Yoichi Miyamoto (Osaka University)
"On (the Absence of) Adjunct Condition Effects in Japanese"

Kazumi Matsuoka (Keio University)
"Where Syntax, Semantics, and Pragmatics Interact: Young Children's Interpretation of Focus Particles in Japanese"

Keiko Murasugi (Nanzan University)
"Peripheral Particles in Early Child Japanese"

Diane Lillo-Martin (University of Connecticut)
"Language Architecture: Evidence from the Development of Bimodal Bilingualism"

<第 38 回コロキュアム>

2011 年 10 月 22 日（金）10:30 ~ 17:00

南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 23 名

Koichi Otaki (Mie University)
"Null Arguments in Kaqchikel and Their Theoretical Implications"

Naoyuki Akaso (Nagoya Gakuin University) and Tomoko Haraguchi (Nanzan University)
"Adverbs and Nominative/Genitive Conversion in Japanese Relative Clauses"

Julio Villa-García (University of Connectiut)
"The Spanish CP Layer: Evidence from Recomplementation Patterns"

Kensuke Takita (Tohoku University)
"Pseudo-right Dislocation and the Bare Topic Construction in Japanese"
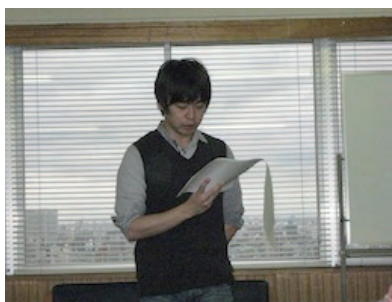
<第 39 回コロキュアム>
2011 年 12 月 17 日（土）10:30 ~ 17:00
南山大学名古屋キャンパス J 棟 1 階 P ルーム　参加者 35 名

Jun Abe (Tohoku Gakuin University)
"The Residue of NIC and Super-Raising: An Examination of Japanese A-Movement"

Hidekazu Tanaka (University of York)
"(Quantificational) Objects at the Edges"

Mamoru Saito (Nanzan University)
"Two Notes on Feature Inheritance: A Parametric Variation in the Distribution of the EPP"

George Tsoulas (University of York)
"Phases and Interpretation"

Hiroaki Tada (Fukuoka University)
"On Deriving the Monotonicity Constraint on MPs: A View from QSDs in Japanese"

<講演会>
2012 年 1 月 6 日（金）15:15 ~ 16:45
南山大学名古屋キャンパス J 棟 1 階 P ルーム　参加者 29 名

James Douglas Saddy (University of Reading)
"Measuring Language in the Brain"

<第 40 回コロキュアム>
2012 年 1 月 7 日（土）10:30 ~ 12:00
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 37 名

James Douglas Saddy (University of Reading)
"Where do Grammars come from?"

<The Thirteenth Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2012 年 2 月 20 日（月）13:00 ~ 17:30
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 26 名

Keiko Murasugi (Nanzan University)
"Tense and Peripheral Particles in Child Japanese"

Tomoko Haraguchi (Nanzan University)
"Distributions of Modals and Sentence Final Particles: Selection or Something Else?"

Liliane Haegeman (Universiteit Gent)
"The Movement Derivation of Adverbial Clauses and its Implications for the Encoding of Focus and Emphasis"

<第 41 回コロキュアム>
2012 年 2 月 21 日（火）10:30 ~ 12:00
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 33 名

Liliane Haegeman (Universiteit Gent)
"The Derivation of Factive Clauses"

<第 3 回研究会 国立国語研究所共同研究プロジェクト>
(言語学研究センター共催)
2012 年 3 月 7 日（水）10:00 ~ 18:00
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 26 名

斎藤 衛 (南山大学)
「幼児日本語にみられる属格主語と Finite Head の性質」

岸本 秀樹 (神戸大学)
「日本語の節構造、語彙認可、および、主節不定節現象」

村杉 恵子 (南山大学)
「主節不定詞と談話不変化詞から探る幼児の文法構造」

杉崎 紘司 (三重大学)
「普遍的制約の早期発見：日英語における移動現象の獲得から」

佐野 哲也 (明治学院大学)
「焦点標識の幼児による解釈について」

<The Fourteenth Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2012 年 3 月 8 日（木）10:30 ~ 15:00
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 28 名

Tomohiro Fujii (Yokohama National University)
"The Calculus of Control and Lack of Overt Agreement Morphology"

Ryosuke Shibagaki
"Syntax-Semantics Interface in Chinese Secondary Predication"

Yuji Takano (Kinjo Gakuin University)
"Movement of Antecedents"

<第 42 回コロキュアム>
2012 年 6 月 9 日（金）17:15 ~ 18:45
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 25 名

Tsuyoshi Sawada (University of Connecticut)
"Japanese Inflection, Interpretability, and Distributed Morphology"
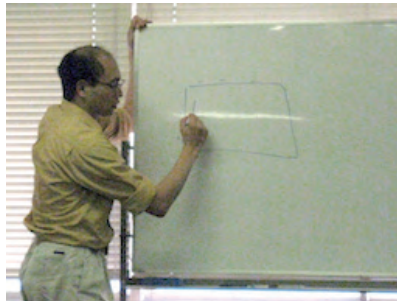
<第 43 回コロキュアム>
2012 年 7 月 5 日（木）17:15～18:45
南山大学名古屋キャンパス J 棟 1 階 P ルーム　参加者 23 名

片岡　邦好 (愛知大学)
「マルチモーダルな民族詩学(ethnopoetics)の展開に向けて」

<第 44 回コロキュアム>
2012 年 7 月 14 日（土）16:00～17:30
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 27 名

Masahiko Takahashi (University of Maryland)
"Case Marking in Japanese and Phases: Evidence from Nominative/Accusative Conversion"

<The Fifteenth Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>

2012 年 7 月 28 日（土）10:00〜18:15
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 43 名

Mamoru Saito (Nanzan University)
"The Pred Projection and the EPP"

Maia Duguine (University of the Basque Country)
"Ellipsis of DPs and the Typology of Pro-drop"

Daiko Takahashi (Tohoku University)
"Looking at Argument Ellipsis Derivationally"

James McCloseky (University of California, Santa Cruz)
"Polarity, Ellipsis, and the Limits of Identity in Irish"

2012 年 7 月 29 日（日）10:00〜16:00
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 39 名

Kensuke Takita (Mie University)
"On XP/X^0-asymmetries in Extractions from Ellipsis Sites"

Yoichi Miyamoto (Osaka University)
"On Chinese and Japanese Relative Clauses and NP-Ellipsis"

Sandra Chung (University of California, Santa Cruz)
"Limited Syntactic Identity in Sluicing"
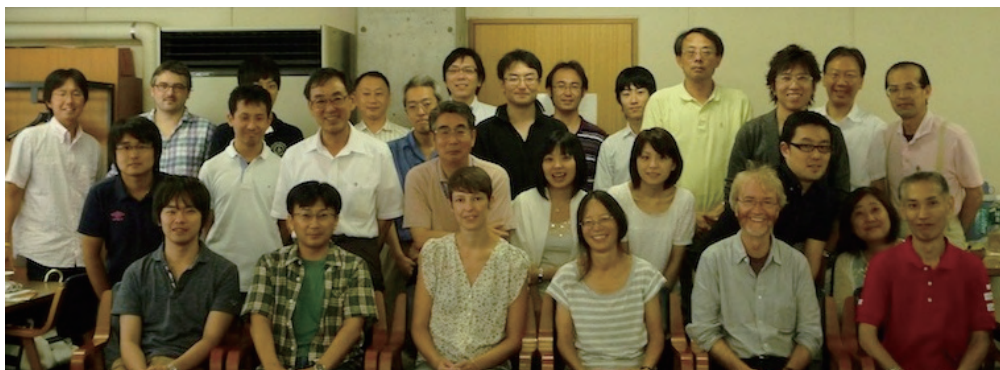
<第 45 回コロキュアム>
2012 年 8 月 2 日（木）17:15 ~ 19:30
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 24 名

Shin-Sook Kim (University of York)
"Wh- and NPI-Intervention Effects: Are They the Same of Different?"

Peter Sells (University of York)
"Unpredicated Particles in English"

<第 46 回コロキュアム>
2012 年 9 月 1 日（土）16:00 ~ 17:30
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 21 名

Günther Grewendorf (Goethe Universität Frankfurt am Main)
"Case and Agreement in Free Relatives"

<The Sixteenth Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>

2012 年 9 月 9 日（日）10:00〜18:15
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 26 名

Seichi Sugawa (Nanzan University)
"Case and Selectional Properties"

Ting Xu (University of Connecticut)
"Do We Need the Semantic Subset Principle? On the Acquisition of *again* in Goal-PP Constructions"

Atsushi Sato (Nanzan University)
"Interpreting Relative Clause Processing as Ambiguity Resolution"

Ryosuke Shibagaki (Nanzan University)
"Recapturing Chinese V-V Constructions: between Complex Predicate and Compound Verb"

Koji Sugisaki (Mie University)
"Ellipsis of Arguments and Adjuncts in Child Japanese"

Lyn Tieu (University of Connecticut)
"Going Wide: 4-year-olds' Knowledge of 'any'"
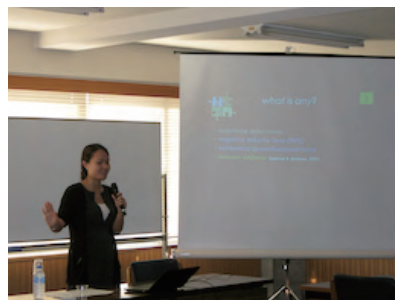
<国立国語研究所共同研究プロジェクト公開講演会> (言語学研究センター共催)
2012 年 10 月 31 日 (水) 16:30〜18:00
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 26 名

Susan Fischer
"Historical Change in Sign Languages"

<第 47 回コロキュアム>
2012 年 12 月 22 日（土）16:00 ~ 18:00
南山大学名古屋キャンパス J 棟地下 1 階 JB12　参加者 16 名

澤田　治 (三重大学)
"An Utterance Situation-based Comparison: The Case of the Japanese Comparative Adverb *motto*"

<**第 5 回研究会 国立国語研究所共同研究プロジェクト**>
(言語学研究センター共催)
2012 年 12 月 23 日（日）16:00 ~ 17:30
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 31 名

Thomas Hun-tak Lee and Zhuang Wu (Chinese University of Hong Kong)
"The Acquisition of Nominal Structure, Word Order and Referentiality in Chinese: Corpus and Experimental Findings"

Koji Sugisaki (Mie University)
"On the Learnability of Japanese Scrambling"

Hiromu Sakai (Hiroshima University)
　"Cognitive Neuroscience of Linguistic Diversity - A View from an ERP Study on Japanese Honorific Processing -"

Mamoru Saito (Nanzan University)
"On the Role of Selection in Syntactic Word Formation"

Thomas Hun-tak Lee (Chinese University of Hong Kong)
"Comments on the Issues Presented in the Workshop"

<**第 48 回コロキュアム**>
2013 年 1 月 12 日（土）15:30 ~ 17:00
南山大学名古屋キャンパス L 棟 9 階大会議室　参加者 14 名

田中　秀和 (University of York)
"Right-Dislocation, Ellipsis, and Island Repair"

<The Seventeenth Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2013 年 2 月 16 日（土）
南山大学名古屋キャンパス　Ｌ棟９階大会議室　参加者 45 名

Keiko Murasugi (Nanzan University)
"Steps in the Emergence of Full Syntactic Structure in Child Grammar"

Koji Sugisaki (Mie University)
"VP-internal Subjects in Child English Revisited"

Yoichi Miyamoto (Osaka University)
"On the Availability of NP-Ellipsis with Japanese and Chinese Relative Clauses"

Hideki Kishimoto (Kobe University)
"Subject Raising and NPI Licensing in Japanese"

Daiko Takahashi (Tohoku University)
"Argument Ellipsis and Agreement"

2013 年 2 月 16 日（土）〜17 日（日）
南山大学名古屋キャンパス　Ｌ棟９階大会議室　参加者 37 名

Mamoru Saito (Nanzan University)
"Ways of Phrase Structure Construction: From Morphology to Pragmatics"

Tomohiro Fujii (Yokohama National University)
"(N)OC into Verbal Noun Phrases"

Hisatsugu Kitahara (Keio University)
"Simplest Merge and Language Variation"

Yuji Takano (Kinjo Gakuin University)
"Extending Movement Derivations from Control to Binding"
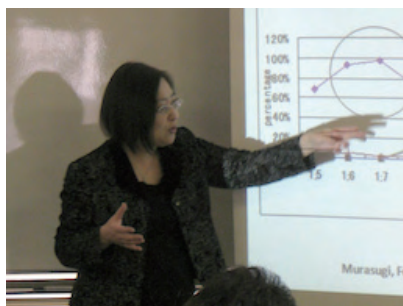
<The Eighteenth Workshop of the Nanzan International Research Project on Comparative Syntax and Language Acquisition>
2013 年 3 月 10 日（日）〜11 日（月）
南山大学名古屋キャンパス　Ｌ棟９階大会議室　参加者 68 名

W.-T. Dylan Tsai (National Tsing Hua University)
"Merging Prepositions VP-externally in Chinese - A Cartographic View"

Emilio Servidio (University of Siena)
"Responding Particles and Polarity Focus in Italian"

Yoshio Endo (Kanda University of International Studies)
"Information Structure and Criterial Freezing"

Seng-Hian Lau (National Tsing Hua University)
"A Cartographic Analysis of BE in Taiwan Southern Min and Mandarin: From a Comparative Perspective"

Keiko Murasugi (Nanzan University)
"Discourse Particles in Child Grammar and the Truncation Hypothesis"

Adriana Belletti (University of Siena)
"Extraposition and Predication in Clefts"

2013 年 3 月 10 日（日）〜11 日（月）
南山大学名古屋キャンパス　Ｌ棟９階大会議室　参加者 70 名

Duk-Ho An (Konkuk University)
"Red Herrings in NP-ellipsis Research in Korean"

Kensuke Takita (Mie University)
"Identity in Ellipsis: A View from Antecedent-Contained Sluicing"

Claudia Manetti and Adriana Belletti (University of Siena)
"Causative and the Acquisition of Italian Passive"

Mamoru Saito (Nanzan University)
"Case as an Anti-Labeling Device"

Ching-Yu Yang (National Tsing Hua University)
"The Ins and Outs of 'lian … dou' Constructions in Mandarin Chinese"

Luigi Rizzi (University of Siena)
"Criteria and Labeling"
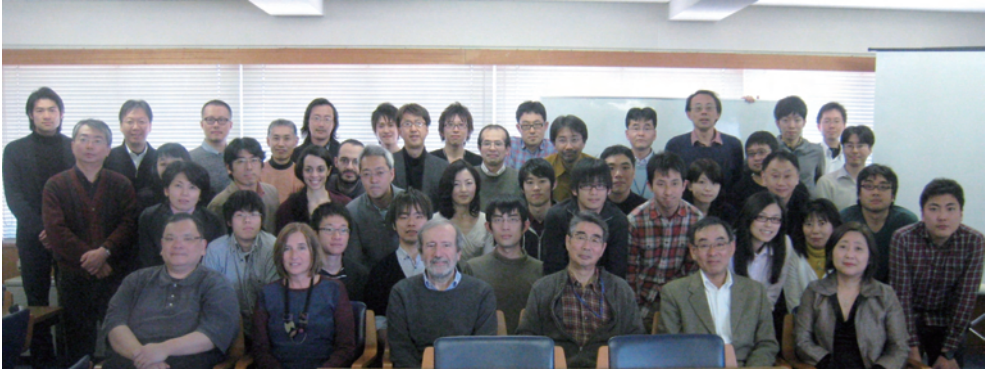
研究業績一覧

2008 年度〜2012 年度

著書・学術論文・学会発表一覧

A. 著書・学術論文

＜学内研究員＞

<u>斎藤　衛</u>

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宗像 孝

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島田 純理

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＜学外研究員＞

藤井 友比呂

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岸本 秀樹

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研究成果 1

Nanzan Linguistics 8 より

ON THE CALCULUS OF CONTROL
AND LACK OF OVERT AGREEMENT MORPHOLOGY*

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1. Introduction

The finite/nonfinite distinction has been playing a crucial role in explaining properties of obligatory control (OC) [e.g., (1a)] and of raising [e.g., (2a)]. A well-accepted way of describing the relevant generalization is by saying that OC and raising are only found with nonfinite subordinate clauses. That is, finite clauses — those inflected for tense and agreement — do not allow either process [(1b), (2b)].

(1) a.   Lisa promised [PRO to leave].

   b. *Lisa promised [PRO would leave]. (cf. Lisa promised she would leave.)

(2) a.   Lisa seems [*t* to have left].

   b. *Lisa seems [*t* has left]. (cf. It seems that Lisa has left.)

This traditional notion of finiteness has been challenged by Landau (2004, 2006). Putting huge data from various languages in perspective, Landau observes that environments allowing OC do not form a natural class and that "the only generalization in this domain that appears to be universal is the incompatibility of indicative clauses with OC" (Landau 2004:849-50).

Landau's typology, as well as a simplified version of it proposed by Nunes (2008) and Boeckx, Hornstein and Nunes (2010) (to which we will turn in section 2), crucially uses semantic tense ([T]) and agreement ([Agr]) to correctly predict when OC is possible and when it fails. In a theory of this type (which we call a Landau-style typology of control), the "incompatibility of indicative clauses with OC" is explained by saying that the Infl head specified [+Agr] and [+T] necessarily licenses a lexical subject. Taking Landau's typology as the point of departure, the present paper asks what a Landau-style typology of control can say about a language without overt agreement morphology. More specifically, the paper attempts to seek a minimally modified version of the theory that can accommodate Japanese, a

language that exhibits no overt morphological agreement but does exhibit overt tense morphology.

In what follows, it is claimed (i) that due to the lack of overt agreement morphology in Japanese, it is not immediately clear whether the Landau-style typology, as it stands, can account for the distribution of OC in the language; and (ii) that the theory can be made to empirically work by revising the feature [Agr] in such a way that it can deal with overt tense morphology as well as overt agreement morphology.

The organization of the paper is as follows. Section 2 introduces the background assumptions concerning Landau's 'scale of finiteness' proposal. We review Landau's theory and the modified version of it that has been proposed by Nunes (2008) and Boeckx, Hornstein and Nunes (2010). Section 3 examines the behavior of OC and non-control complements containing overt tense markers in Japanese, proposing the generalization that independent tense complements, unlike untensed and dependent tense complements, resist OC. Section 4 seeks a way of making a Landau-style typology with this generalization, given that Japanese apparently lacks [Agr]. Three alternatives are considered. Section 5 concludes the paper.

2.   The Calculus of Control (Landau 2004, 2006)

This section lays out the assumptions employed in Landau's proposal and Nunes/BH&N's version of it. Proposing that [T(ense)] and [Agr(eement)] determine the distribution of OC PRO, Landau (2004, 2006) pursues the hypothesis that "an Infl head positively specified for both features [+T, +Agr] will necessarily license a lexical subject" while "an Infl head with any negative specification — [+T, −Agr], [−T, +Agr], [−T, −Agr] — will necessarily license PRO" (Landau 2006:160). This 'calculus of control' predicts that clauses are classified into four types, as the two binary features can be combined in four ways. In Landau's more elaborate implementation of the theory, though, [Agr] and [T] on C° are also taken into consideration for the "calculus of control". Nunes (2008) and Boeckx, Hornstein and Nunes (2010) (BH&N, henceforth) propose to simplify Landau's original proposal by restricting the locus of clause type variation to T° (or Infl°), rather than both T° and C°. The present paper assumes with Nunes and BH&N that we need no reference to C, mainly because the system without [T] and [Agr] on C° still seems rich enough to address the issue of interest that arises in Japanese.[1]

Another significant difference between Landau's and Nunes/BH&N's version has to do with the meaning of the symbols [+Agr] and [−Agr], as noted in Nunes (2008) and BH&N. For Landau, "+" reflects overt morphological agreement inflection. Thus infinitival T°, being *uninflected*, is specified [−Agr] in the original proposal. For Nunes/BH&N, the meaning of "+" and "−" is somewhat more abstract: [+Agr] indicates that the relevant φ-features of T° are fully specified while [−Agr] indicates that they are φ-deficient or null. An example of

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[1] See Polinsky and Potsdam (2006) for another way of simplifying Landau's proposal. They consider the features on C exclusively, in contrast to Nunes (2008) and BH&N.

ɸ-deficiency of this sort comes from Brazilian Portuguese. Analyzing finite control and hyper-raising in Brazilian Portuguese in which OC PRO and NP-trace occur with clearly inflected complements, Nunes (2008) and BH&N argue the following: the T° of Brazilian Portuguese "finite" clauses is marked [+Agr] when it enters the numeration with both person and number features. "Finite" T°, however, is sometimes marked [−Agr] when it lacks a number feature in the numeration. On the surface, the two kinds of T look the same due to the weakening of finite verbal morphology of the language. The point is that the characterization of "−" in terms of deficiency allows us to avoid analyzing finite control as involving a T° specified [+T, +Agr].[2] This helps to make the "calculus of control" considerably simple (BH&N: 66). Throughout the paper, I assume Nunes's and HB&N's interpretation of "+" and "−".

Landau and Nunes/BH&N also differ on how these feature specifications lead to determine the distribution of OC PRO. Although this difference between the two theories does not affect the conclusions of this paper, let us take a brief look in order to complete the picture. For Landau, a clausal head, if specified [+T, +Agr], is assigned a feature (called [+R]) that makes the T° require a referential DP, yielding no control. Elsewhere, T° is assigned [−R] and thereby requires an anaphoric DP like OC PRO as its specifier. For Nunes/BH&N, OC PRO is NP-trace, and NP-movement is allowed only from a non-case position. By assuming that only T° with [+T, +Agr] assigns nominative case, NP-movement can be made to apply when T° has any of the three other feature combinations.

Given these caveats, let's review fundamental data points that lead Landau (2004, 2006) to posit the four clause types. Consider the examples given in (3)–(7).

(3) [−T, −Agr]: Untensed infinitives in English = OC (Landau 2000)

    a.   John managed to solve the problem.

    b. *Yesterday John managed to solve the problem tomorrow.

(4) [+T, −Agr]: Dependent tense infinitives in English = OC (Landau 2000)

    a.   John decided to solve the problem.

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[2] Hebrew 3rd-person subjunctives, as reported in Landau (2004), lead to the same situation. Examples are given below. (ib) involves OC even though the embedded predicate is inflected. See Landau (2004), Nunes (2008), and BH&N (p. 67).

(i)   a.   Hem₁   kivu   še-atem₂ /   pro₂   telxu   ha-bayta   mukdam.

		Hem$_1$	kivu	še-atem$_2$ /	pro$_2$	telxu	ha-bayta	mukdam.
		they	hoped	that-you (pl.) /	pro	will-go.2pl	home	early

       'They hoped that you (pl) would go home early.'

		Hem$_1$	kivu	še-hem$_{1/2}$ / pro$_{1/*2}$	yelxu	ha-bayta	mukdam.
	b.	they	hoped	that-they / pro	will-go.3pl	home	early

       'They hoped that they would go home early.'

    b.   Yesterday John hoped to solve the problem tomorrow.

(5) [−T, +Agr]: Untensed subjunctives in Greek ≠ OC (Varlokosta 1994)

    a. o   Yanis   kseri/arxizi   na   kolimba.
        the   John   knows/beings Sbj   swims

       'John {knows how, begins} to swim.'

    b. *tora, o   Yanis   kseri/arxizi   na   kolimbai   avrio.
        now   the   John   knows/beings Sbj   swims   tomorrow

       'Now, John {knows how, begins} to swim tomorrow.'

(6) [+T, +Agr]: Dependent tense subjunctives in Greek ≠ OC (Varlokosta 1994)

    a. o   Yanis   elpizi/theli   na   figi.
        the   John   hopes/wants Sbj   leaves

       'John {wants, hopes} to leave.'

    b. tora, o   Yanis   elpizi/theli   na   figi   avrio.
        now   the   John   hopes/wants Sbj   leaves   tomorrow

       'Now John {wants, hopes} to leave tomorrow.'

(7) [+T, +Agr]: Indicatives in English ≠ OC

    a.   John hoped that he will win.

    b.   Yesterday, John hoped that he will win tomorrow.

Let us begin with the English infinitive constructions given in (3) and (4). In both examples, the complements are infinitives, so their T heads are specified [−Agr]. They do not inflect. (3) and (4) are different in terms of semantic tense, though. (3a) is an example of what is called an *untensed* complement. Here the embedded T° is negatively specified for [T]. The value of [T] is diagnosed by looking at the (im)possibility of a tense mismatch. As indicated by the ungrammaticality of (3b), the implicative verb *manage* does not allow the matrix and the embedded event to contain conflicting time expressions. Thus the embedded T° is specified [−T].

(4a) is an example of *dependent tense* complements, which occur with verbs like *hope*. Since these complements always receive a future-oriented or irrealis reading, their interpretation is not as flexible as that of indicative (i.e., fully inflected) complements. Despite that, however, the dependent tense complement is not untensed, as evidenced by the grammaticality of the tense mismatch example in (4b). Therefore the embedded T° in (4) is positively specified for [T]. The point is that when T° bears [−Agr], OC is possible regardless of the value of [T]. (The reader is referred to Landau (2000) for detailed classification of various selecting predicates.)

(5) and (6) are examples of Greek subjunctive complements. Each embedded T° is specified [+Agr], since subjunctive verbs exhibit overt agreement morphology (see Iatridou 1993, Terzi 1992, Varlokosta 1994 and others). As for their semantic tense, the complements of *begin* and *know (how)* are untensed exactly like the English implicative complement seen above, as shown in (5b). Hence their embedded T° bears [−T]. The complements of *hope* and *want*, however, allow a tense mismatch, as exemplified by (6b) (Varlokosta 1994). Since [Agr] is invariantly marked "+" in (5) and (6), only when the other feature, i.e., [T], bears negatively valued is OC possible, as predicted by the calculus of control.

Finally, indicative complements like the one in (7) are considered to have an inflected T° (i.e., specified [+Agr]) and to be tensed (i.e., specified [+T]). Indicatives are different from dependent tense infinitives in that their tense is not dependent on the matrix verb in the relevant sense; E.g., *Monique decided to be in Paris* does not have the simultaneous reading that *Monique decided that she was in Paris* does have, as noted in Abusch (2004). As far as specification of [T] on T° is concerned, however, they are treated the same, being specified [+T].

The four categories and their category members are presented below (see BH&N, p.38).

(8)

Obligatory control			No control
[+T, −Agr]	[+T, −Agr]	[−T, +Agr]	[+T, +Agr]
• Untensed uninflected infinitives, etc.	• Tensed infinitives, • Hebrew 3rd-person subjunctives, • Brazilian Portuguese finite clauses, etc.	• Balkan untensed subjunctives, etc.	• English indicatives, • Balkan tensed subjunctives, etc.

Assuming that the Landau style approach to the scale of finiteness is correct, I will turn to Japanese in next section.

3.   The Basic Japanese Data: OC into *Ru/Ta*-Clauses

Japanese does not exhibit overt person/gender/number morphology on predicates. The language instead has overt agglutinative tense morphology in which the so-called present tense marker *-ru* and the past tense marker *-ta* are contrasted. In (9a) and (9b), *-ru* and *-ta* respectively attach to the verbal root *tabe-* 'eat'.

(9) a.   tabe-ru
         eat-Prs

     b.   tabe-ta
         eat-Pst

Also important to note about Japanese verbal morphology is that it is not clear that the language has the morphological verbal category "infinitive". The fact that the citation form of a verb is the present tense form may be taken as an anecdotal indication that the language lacks infinitives. The language also has no indication of having the morphological category "subjunctive". In a nutshell, therefore, it is not straightforward at all to make a three way distinction among indicative, subjunctive and infinitive based on overt morphological evidence in Japanese.[3]

Given these, it may be less surprising that some OC complements, in terms of verbal morphology, do not look much different from non-control complements that can be translated into other languages as indicatives: Whether controlled or not, complements can be marked with -*ru* or -*ta*. We will review core data in Japanese below; see Fujii (2008) and references cited therein for fuller discussion.

(10)–(13) illustrate how the *ru*-complement of *tikau* 'swear' differs from that of *kangaeru* 'think/consider' with respect to some well-known diagnostics for OC. Consider the (a)-examples first.[4]

(10)   karera-wa kantoku-ni   [*ec* otagai-o   naguri-aw-u   koto]-o
        they-Top   director-Dat   e.o.-Acc   hit-Recip-Prs   C-Acc
        {a. *tikat-te,   b. kangae-te}   hosikatta.
           swear-Grnd   think-Grnd   wanted

        'They wanted the (movie) director to {a. swear to hit each other, b. think about them hitting each other}.'

(11)   [Mary-no   titioya]-wa [*ec* sono   byooin-de   syussansu-ru   koto]-o
        Mary-Gen father-Top   that   hospital-in   give birth-Prs C-Acc
        {a. #tikatta, b. kangaeta}.
          swore   thought

        'Mary's father {a. swore to give birth in that hospital, b. thought about her giving birth in that hospital}.'

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[3] This does not mean that we cannot make such a mood distinction at a more abstract, syntactic level for Japanese. See Watanabe (1996) and Uchibori (2000) for such attempts. See also Landau's (2004, 2006) analysis of Hebrew 3rd-person subjunctives.

[4] In those examples, the nominalizing complementizer *koto* can be replaced by another nominalizing complementizer *no*, though native speakers' judgments may vary; see Kuno (1973). We abstract away from the issue of complementizer choice.

(12)   Mary-wa   [*ec* zibun-no peesu-de   sigoto-o   tuzuke-ru   koto]-o
        Mary-Top   self-Gen   pace-at   work-Acc   continue-Prs C-Acc
        {a. tikatta,   b. kangaeta}.   Butyoo-mo   da.
           swore   thought   manager-also   Cop.Prs

    'Mary {a. swore to continue her work, b. thought about continuing her work} at her
    own pace. And the manager, too.'
    Strict reading possible with (b), but not with (a).

(13)   sono kiokusoositu   kanzya-wa [*ec* taiinsu-ru koto]-o {a. tikatta,   b. kangaeta}.
        that amnesiac   patient-Top   leave-Prs C-Acc   swore   thought

    'The amnesiac {a. swore to leave the hospital, b. thought about leaving the
    hospital}.'
    *Non-*de se *possible with (b), but not with (a).*

These (a)-examples clearly show that the verb *swear* takes a *ru*-complement and induces OC.
The null subject of the *ru*-clause cannot be bound long distance [(10a)]; A non-c-commanding
NP cannot antecede the *ec* [(11a)]; the *ec* does not support a strict reading [(12a)]; and the *ec*
cannot be interpreted in a non-*de se* manner [(13a)]. All these indicate that the null subject is
OC PRO. (I will return to the (b)-examples shortly.)

    A parallel set of examples can be constructed with *ta*-complements, which are
past-oriented. In the (a)-examples in (14)–(17) with the verb *kuyamu* 'regret', the
complements are in the past tense.

(14)   karera-wa   [kantoku-ni   [*ec* otagai-o   naguri-at-ta   koto]-o
        they-Top   director-Dat   e.o.-Acc   hit-Recip-Pst   C-Acc
        {a. *kuyan-de,   b. kangae-te}   hosikatta.
           swear-Grnd   think-Grnd   wanted

    'They wanted the movie director to {a. regret having hitting each other, b. think
    about them having hit each other}.'

(15)   [Mary-no   titioya]-wa   [*ec* sono   byooin-de   syussansi-ta   koto]-o
         Mary-Gen father-Top   that   hospital-in   give birth-Pst C-Acc
        {a. #kuyanda,   b. kangaeta}.
           regretted   thought

    'Mary's father {a. regretted having given birth in that hospital, b. thought about her
    having given birth in that hospital}.'

(16)   Mary-wa   [*ec* zibun-no peesu-de sigoto-o   tuzuke-ta   koto]-o
    Mary-Top   self-Gen pace-at work-Acc continue-Pst C-Acc
    {a. kuyanda, b. kangaeta}.   Butyoo-mo   da.
       regretted   thought   manager-also Cop.Prs

    'Mary {a. regretted having continued her work, b. thought about having continued her work at her own pace}. And the manager, too.'
    Strict reading possible with (b), but not with (a).

(17)   sono kiokusoositu   kanzya-wa [*ec* taiinsu-ta koto]-o {a. kuyanda, b. kangaeta}.
    that amnesiac   patient-Top   leave-Pst C-Acc   regretted   thought

    'The amnesiac {a. regretted having left the hospital, b. thought about having left the hospital.'
    Non-de se *possible with (b), but not with (a).*

In (14)–(17), the (a)-examples exhibit a sharp contrast with their counterparts given in (b). While *kuyamu* 'regret' yields OC, *kangaeru* 'think (about)' does not.

What is the exact nature of the cut between the (a)-examples and (b)-examples? Building on observations made in the past literature, Fujii (2006) observes that OC ensues when the tense morphology of the relevant clause is "fixed", i.e. does not allow alternation of *-ta* and *-ru* (Nakau 1973:225, Kuno 1973:219, Ohso 1976:90ff., Saito 1985:267, n34, Sakaguchi 1990, Ueda 1990:76, Watanabe 1996, among others). He states the generalization as follows:

(18)   If the T of a subordinate clause cannot have *-ta* or cannot have *-ru* in environment E, it bears [−finite] in E.

Note, as shown in (19), that *tikau* 'swear' and *kuyamu* 'regret' resist occurring with a *ta*-complement and a *ru*-complement, respectively. Therefore, those complements are [−finite], according to (18). This is a good result since these are OC complements, as we saw above.

(19) a. *Mari-wa   issyookenmei hatarak-u koto-o   kuyanda.
        Mari-Top   hard   work-Prs   C-Acc   regretted

    b. *Mari-wa   issyookenmei hatarai-ta koto-o   tikatta.
        Mari-Top   hard   work-Pst   C-Acc   swore

Now return to the (b)-examples of (10)–(17). Since *kangaeru* allows both *ru*-complements [(10)–(13)] and *ta*-complements [(14)–(17)], (18) accounts for the fact that the complements of the verb in these examples cannot be [−finite] and thus is not subject to OC.

The data in (19) suggest that *kuyamu* and *tikau* take dependent tense complements. (20a) and (21) confirm it. (Also, it is not surprising that the complement of *kangaeru* 'think' has its own tense domain, as shown in (20b), since it is an independent tense complement.)

(20) Mari-wa   asita   hatarak-u koto-o kinoo   {a. tikatta, b. kangaeta}.
      Mari-Top   tomorrow   work-Prs   C-Acc   yesterday   swore   thought

      'Yesterday Mari {a. swore to work tomorrow, b. thought about working tomorrow}.'

(21) Mari-wa   kinoo   hataraki-ta koto-o asu   kuyam-u   daroo.
      Mari-Top   tomorrow   work-Prs   C-Acc   yesterday regret-Prs   will

      'Tomorrow Mari will regret having worked yesterday.'

It is not only dependent tense complements that (18) correctly predicts to allow OC. Untensed OC complements also do not have the ability to support both *-ru* and *-ta*. Nakau (1973:278) notes that the aspectual verb *hazimeru* 'begin' can take a *ru*-complement and induces OC (and raising). As evidenced by the ungrammatical tense mismatch in (22a), the *ru*-complement with *begin* is untensed, even though a tense marker is overtly present. That is, the complement of *begin*, unlike a dependent tense complement [(22b)] does not have its own tense domain. Now it should be noted that, as shown in (23), the past tense marker is disallowed in a CP complement of *begin*. Thus the proposed relationship between OC and the "fixed tense" phenomenon holds for untensed complements containing an overt tense marker.

(22) Mari-wa   asita   hatarak-u koto-o kinoo   {a. *hazimeta, b. kessinsita}.
      Mari-Top   tomorrow   work-Prs   C-Acc   yesterday   began   decided

      'Yesterday Mari {began, decided} to work tomorrow.'

(23) Mari-wa   {a. hatarak-u, b. *hatarai-ta}   koto-o   hazimeta.
      Mari-Top   work-Pst   work-Pst   C-Acc   began

      'Mari began to work.'

To summarize:

(24) In Japanese, while untensed and dependent tense complements are compatible with
      OC, independent tense complements are not.[5]

Japanese is different from Balkan languages because as noted in section 2, in these languages, untensed subjunctives induce OC but dependent tense subjunctives do not. Instead, Japanese is on a par with Hebrew, where OC is found with 3rd-person future-oriented complements (fn. 2). The main point is that the picture for Japanese looks quite close to the one that Landau puts forth, namely, "the incompatibility of OC with indicatives". In next section, I ask how it is possible to express a language like Japanese in the Landau-style calculus of control.

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[5] It is not the case that dependent tense complements always exclude non-OC complements. The reader is referred to Fujii (2006, 2008), which investigate the conditions under which NOC dependent tense complements are obtained.

4. Putting Japanese into the Calculus of Control

4.1. Overt Tense Inflection

Now we are in a position to ask where the relevant Japanese constructions are placed in the table that Landau proposes and that Nunes (2008) and BH&N modify. (8) is repeated below as (25).

(25)

Obligatory control			No control
[−T, −Agr]	[+T, −Agr]	[−T, +Agr]	[+T, +Agr]
• Untensed uninflected infinitives, etc.	• Tensed infinitives, • Hebrew 3rd-person subjunctives, • Brazilian Portuguese finite clauses, etc.	• Balkan untensed subjunctives, etc.	• English indicatives, • Balkan tensed subjunctives, etc.

The issue is obvious, given that Japanese has no overt agreement morphology. How can we know whether a given Japanese clause should be specified [+Agr] or [−Agr]? The specification needs to be done independently of whether the clause in question is subject to OC or not. Namely, if we labeled a clause [+Agr] or [−Agr] by looking at whether the clause is obligatorily controlled or not, then the typology in question would stop predicting anything. Below I first consider two alternative answers to the question and show that they do not work very well. I, then, propose that Japanese data lead us to modify the feature [Agr] in a way that allows the system to refer to overt tense morphology in addition to overt agreement morphology.

The first alternative can be depicted as in (26). Based on their behaviors with regard to OC, Japanese untensed and dependent tense complements are placed under "Obligatory control" while Japanese independent tense complements under "No control". Untensed complements bear [−T], and dependent tense complements [+T], as we have seen above.

(26)

Obligatory control			No control
[−T, −Agr]	[+T, −Agr]	[−T, +Agr]	[+T, +Agr]
• Untensed uninflected infinitives, etc.	• Tensed infinitives, • Hebrew 3rd-person subjunctives, • Brazilian Portuguese finite clauses, etc.	• Balkan untensed subjunctives, etc.	• English indicatives, • Balkan tensed subjunctives, etc.
(• Untensed *ru*-complements)	• Dependent *ru*- or *ta*-complements	(• Untensed *ru*-complements)	• Independent *ru*/*ta*-complements

Note that in (26), dependent *ru*- and *ta*-complements are specified [−Agr] and independent *ru*/*ta*-complements are specified [+Agr]. This is so because the former induce OC and the

latter do not. One serious problem with this alternative is that there is no independent evidence for these specifications. In order to determine which complements go with which feature specifications under this analysis, one would need to know whether or not a given complement induces OC.

The second alternative is somewhat more interesting. Let us think about what this 'calculus of control' table will look like if Japanese lacks the feature [±Agr]?[6] To answer this question, let us recall how exactly the distribution of OC PRO is determined in a system of this sort (section 2). Under Nunes/BH&N's case-based approach, only a T° with [+T, +Agr] assigns nominative case. So when combined with this case theory, the result would be that every Japanese clause would induce OC (or raising), given that T° would be specified either [−T, ∅] or [+T, ∅]. This is clearly an unwanted result. Under Landau's (2004:842) system, on the other hand, R-assignment Rule is formulated in such a way that no [R] value is assigned to the relevant functional head if the head lacks [Agr] or [T]. (Recall that [+R] and [−R] are associated with referential DPs and with "anaphoric" DPs like OC PRO, respectively.) Thus, it follows that neither T° nor C° in Japanese carries [+R] or [−R]. It is thus clear enough that this second alternative fails to distinguish between OC and no control cases.

Having seen how the two alternatives fail, I would like to propose one way of making the typology work for Japanese. The final alternative poses some questions as well (see below) but it, unlike the previous two, provides the right cut between OC and no control. Let us see how this is so. The key is to allow the feature [Agr] to speak of overt tense morphology as well as overt agreement morphology. Let us call the feature [Infl], instead of [Agr], for the current purposes. First, the T° of untensed *ru*-complements [(22)–(23)] and that of dependent *ru*- or *ta*-complements [(10a)–(17a)] both can be considered "deficient" even though verbs of the *ru*-form or the *ta*-form are inflected for tense. This is because in those environments, either -*ru* or -*ta* is blocked. Under the 'deficiency' interpretation of "−", the T° of those complements are specified [−Infl]. This way, the leftmost two cells in the last row in (27) are filled in. Next, recall that the T° of independent tense complements has the ability to support both -*ru* and -*ta*. It is not deficient. We take this ability to mean that the 'independent tense' T is specified [+Infl]. Hence complements of verbs like *kangaeru* 'think' [(10b)–(17b)] fall under [+T, +Infl], as desired, as in (27).[7]

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[6] Kuroda (1983) notes this very possibility. He suggests that even tense heads may not have anything to do with the distribution of PRO. His suggestion is based on the distribution of arbitrary controlled null subjects. I cannot afford to discuss this intriguing issue here.

[7] A somewhat similar idea about finiteness can be found in Huang (1989), which discusses finiteness in Chinese, another language without overt verbal agreement morphology. Huang argues that finiteness is encoded in terms of potential occurrence of a Tense or Aspectual expression under T° in Chinese. In his 'Generalized Control' theory, though, the relationship between finiteness and OC is less direct than in the framework assumed here.

(27)

	Obligatory control		No control
[−T, −Infl]	[+T, −Infl]	[−T, +Infl]	[+T, +Infl]
• Untensed uninflected infinitives, etc.	• Tensed infinitives, • Hebrew 3rd-person subjunctives, • Brazilian Portuguese finite clauses, etc.	• Balkan untensed subjunctives, etc.	• English indicatives, • Balkan tensed subjunctives, etc.
• Untensed *ru*-complements	• Dependent *ru*- and *ta*-complements		• Independent *ru*/*ta*-complements

Before closing this subsection, let us note non-trivial questions that are left with no answer in this paper. I mention two of them here. First, notice that we have not found an untensed complement that exclusively selects the past tense marker *-ta*, as can be observed by the last row under [−T, −Infl]. The question of why untensed *ta*-complements do not exist arises, given that dependent *ta*-complements nonetheless exist; see (19). Second, as seen in the column under [−T, +Infl], we do not seem to find an untensed complement allowing *ru*/*ta*-alternation. Put another way, it is somewhat hard to imagine an example in which, say, an aspectual verb's complement allows *-ta* as well as *-ru*. These gaps in the paradigms seem to suggest that the *ru*-form of a verb is default morphology and that the minus value of [T] triggers it. Then the fact that no untensed *ta*-complements can be found is accounted for. Notice, however, that under the variant of Landau style typology that I am considering, [T] and [Infl] are assumed to be independent variables. Then it is never clear why the material implication "if T° is [−T] then T° is [−Infl]" should hold in Japanese. In fact, a similar observation might apply to English: implicatives (e.g. *manage*), aspectuals (e.g., *begin*) and modals (e.g., *be able*), which select [−T], do not seem to allow finite complements. I cannot afford to explore the issue any further here. I, instead, continue to use [T] and [Infl] as independent features, keeping to the criterion according to which a T head is specified [−Infl] if and only if either *-ru* or *-ta* is blocked.

4.2. OC Complements Containing No Tense Marker

[Infl] can be proved to be useful, independently from the data discussed above, by looking at OC environments in which neither *-ru* nor *-ta* occurs. There are two such classes of complement. One includes the so-called mood constructions, where complements contain a mood marker and exclude a tense marker. (28) is an example of decisive mood complement, and (29) an imperative mood complement. They involve OC, and an overt tense marker does not occur with those mood markers [(28b)/(29b)].[8]

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[8] See Fujii (2010) and references cited therein.

(28) a.　Mari-wa　　yasai-o　　　　tabe-yoo　　　to　omotta.
　　　　Mari-Top　vegetable-Acc　eat-Decisive　C　thought

　　　　'Mary thought she would eat vegetables.'

　　b.　*Mari-wa　　yasai-o　tabe-ru-yoo　　　to　omotta.
　　　　　　　　　　　　　　eat-Prs-Decisive

(29) a.　Mari-wa　Hiroshi-ni　　yasai-o　　　　tabe-ro　　　　to　itta.
　　　　Mari-Top　Hiroshi-dat　vegetable-Acc　eat-Imperative　C　said

　　　　'Mary told Hiroshi that he should eat vegetables.'

　　b.　*Mari-wa　Hiroshi-ni　　yasai-o　　tabe-ru-ro　　　　to　itta.
　　　　　　　　　　　　　　　　　　eat-Prs-Imperative

The other class of complements lacking overt tense marking includes various complex predicate constructions.[9] (30) exemplifies implicative, aspectual and modal constructions. In these constructions involving "bare clausal complements", the head of a complement clause is a bare verbal root and is morpho-phonologically integrated with the matrix verb. Thus, there is no room for a tense marker to occur in between the first verb and the second verb [(30b)].

(30) a.　Mari-wa　　yasai-o　　　　tabe　{-wasure,　-hazime,　-rare}　-ta.
　　　　Mari-Top　vegetable-Acc　eat　　-forget　　-begin　　-can　-Pst

　　　　'Mari {forgot, began, was able} to eat vegetables.'

　　b.　*Mari-wa　　yasai-o　　tabe-ru　{-wasure,　-hazime,　-rare}　-ta.
　　　　　　　　　　　　　　eat-Prs　-forget　　-begin　　-can　-Pst

OC complements of these two classes thus don't even have a chance to exhibit *ru/ta* alternation. Hence the T° heads of them are all specified [−Infl] straightforwardly.

　　　Now let's look at how their semantic tense behaves. Under the Landau-style typology, it will not be surprising if these complements are tensed, because they, being [−Infl], already qualify to be OC environments. In fact, many of these non-overtly-tense-marked complements are tensed. The mood complements exhibit a property of dependent tense. A tense mismatch is allowed both with the embedded decisive [(31)] and the embedded imperative [(32)]. Many bare complements are untensed [(33)]. Bare dependent tense complements, however, exist as well: the complement of the desiderative adjective *-tai* 'want' is clearly irrealis [(34)].

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[9] See Kageyama (1993), Koizumi (1995), Bobaljik and Wurmbrand (2005, 2007), Kuroda (2003), among others.

(31) Mari-wa   asita   yasai-o   tabe-yoo   to   kinoo   omotta.
　　　Mari-Top   tomorrow   vegetable-Acc   eat-Decisive   C   yesterday   thought

　　　'Yesterday Mary thought she will eat vegetables tomorrow.'

(32) Mari-wa   Hiroshi-ni   asita   yasai-o   tabe-ro   to
　　　Mari-Top   Hiroshi-dat   tomorrow   vegetable-Acc   eat-Imperative   C
　　　kinoo   itta.
　　　yesterday   said

　　　'Yesterday Mary told Hiroshi that he should eat vegetable tomorrow.'

(33) *kinoo   Mari-wa   asita   yasai-o   tabe {-wasure, -hazime, -rare} -ta.
　　　yesterday   Mari-Top   tomorrow   vegetable-Acc   eat   -forget   -begin   -can -Pst

　　　'Yesterday Mari {forgot, began, was able} to eat vegetables tomorrow.'

(34) kinoo   Mari-wa   asita   yasai-o   tabe-takat-ta.
　　　yesterday   Mari-Top   tomorrow   vegetable-Acc   eat-want-Pst

　　　'Yesterday Mari wanted to eat vegetables tomorrow.'

All these data taken together, the table can be updated as in (35):

(35)

Obligatory control			No control
[−T, −Infl]	[+T, −Infl]	[−T, +Infl]	[+T, +Infl]
• Untensed uninflected infinitives, etc.	• Tensed infinitives, • Hebrew 3rd-person subjunctives, • Brazilian Portuguese finite clauses, etc.	• Balkan untensed subjunctives, etc.	• English indicatives, • Balkan tensed subjunctives, etc.
• Untensed *ru*-complements, • Untensed bare complements	• Dependent *ru*- and *ta*-complements, • Dependent mood complements, • Dependent bare complements		• Independent *ru/ta*-complements

This way, we have successfully put five Japanese OC environments and one non-control environment in the Landau-Nunes/BH&N style 'calculus of control' table.

5.　Conclusions

　　In conclusion, the present paper has shown (i) that due to the lack of overt agreement morphology, Japanese poses a potential problem for the calculus of control (Landau 2004, 2006, Nunes 2008, BH&N); and (ii) that the theory can be made to work by assuming that [Agr] (or [Infl]) is responsible for overt tense morphology as well. Despite the fact that the

exact relationship between semantic tense and overt tense morphology is left to be worked out in the paper, the modification added here provides a way of dealing with agreement-less languages of the Japanese type in the calculus of control.

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TOWARDS A THEORY OF SPLIT BINDING: A PRELIMINARY SKETCH*

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1. Introduction

It has been alleged to hold universally valid that a locally-bound reflexive (such as *themselves* in English) cannot be bound by more than one antecedent;[1] that is, a local anaphor disallows split-binding (cf. Koster 1984, Lebeaux 1984, and Fiengo and May 1994). For example, the third-person plural non-local pronominal in English (i.e., *them*) permits split-binding, as shown by the well-formedness of the examples in (1a) and (1a′) below, whereas its locally-bound counterpart (i.e., *themselves*) disallows it regardless of whether or not its purported antecedents co-occur within the minimal tensed-clause including the anaphor, as shown by the ill-formedness of the examples in (1b) and (1b′) below:

(1)   *English*

    a. $John_k$ talked to $Bill_h$ about $them_{k+h}$.   (Fiengo and May 1994)

    a′. $John_k$ told $Bill_h$ that the police criticized $them_{k+h}$.   (Heim 2008)

    b.   *$John_k$ told $Bill_h$ about $themselves_{k+h}$.   (Lebeaux 1984)

    b′.   *$John_k$ told $Bill_h$ that the police criticized $themselves_{k+h}$.

Likewise, as shown in the examples in (2) and (3) below, the locally-bound reflexives in Dutch and Chinese (i.e., *zichzelf* and *tamen-ziji*) disallow split-binding, as expected:[2]

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[1] Throughout this paper, the term "local(ly-bound) anaphor/reflexive" is meant for an anaphor/reflexive that must be syntactically bound within the minimal tensed-clause including it.

[2] According to our experimental survey (see Ishino 2012), 10 out of the 12 native speakers of Chinese (i.e., 83.3％) disallow the split antecedents for *tamen-ziji.*

(2)   *Dutch* (Koster 1984, Hicks 2009)
        John$_k$ sprak Peter$_h$ over *zichzelf$_{k/h/*k+h}$*.

        'John$_k$ told Peter$_h$ about himself$_{k/h}$/*themselves$_{k+h}$.'

(3)   *Chinese*
        *Zhangsan$_j$ gaosu Lisi$_k$ youguan   *tamen-ziji$_{j+k}$*.
        Zhangsan   tell   Lisi   about   SELF(PL)

        'Zhangsan told Lisi about SELF(PL).'

    Turning our attention to Japanese, we recognize that Japanese has two types of local anaphor, *zibun-(tati)-zisin* ('SELF-(PL)-self') and Pronoun+*zisin* (such as *kare-zisin* 'himself' or *karera-zisin* 'themselves'). As shown in (4), these (plural) reflexive forms in Japanese must be bound within the minimal tensed clause containing it (cf. Kurata 1986, Nakamura 1989, Katada 1991, and Aikawa 1993), except where it is used logophorically or emphatically (cf. Kuno 1972, 1987 and Aikawa 1994).

(4)   a.   John$_k$-ga [$_{CP}$ Bill$_j$-ga *zibun-zisin$_{*k/j}$/kare-zisin$_{*k/j}$*-o hihansi-ta   to] it-ta.
              John-NOM   Bill-NOM SELF-self/himself-ACC   criticize-PST C   say-PST

              'John said that Bill criticized ***SELF***.'

        b.   [John to Bill]$_k$-ga [$_{CP}$ keisatu$_j$-ga *zibun-tati-zisin$_{*k/j}$/karera-zisin$_{*k/j}$*-o
               John and Bill-NOM   police-NOM SELF-PL-self/them-self-ACC
              hihansi-ta   to] it-ta.
              criticize-PST C   say-PST

              'John and Bill said that the police criticized ***SELF(PL)***.'

    If it is universally true that a locally-bound reflexive cannot be split-bound, we are naturally led to the prediction that *zibun-tati-zisin* and *karera-zisin*, if not used emphatically/logophorically, cannot have split-antecedents within its local domain, because *zibun-tati-zisin* and *karera-zisin* in Japanese are both a locally-bound anaphor as shown in (4). Surprisingly enough, however, *zibun-tati-zisin* is likely to allow local split-binding, as exemplified in (5) below:[3]

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[3] The observation that Japanese plural reflexives allow split-binding was reported in Katada (1991), who contended that *karera-zisin* (the other form of the Japanese local reflexive) in addition to *zibun-tati-zisin*, allows split-binding, the judgment which was also endorsed in Kasai (2000). According to Ishino's (2012) experimental survey, however, 102 out of the 116 native speakers of Japanese (i.e., 87.9%) allow the split antecedents for *zibun-tati-zisin*, but 41 out of the 116 Japanese (i.e., 35.3%) accept the split antecedence of pronouns+*zisin* (*karera-zisin/kanojo-tati-zisin*). Later we will return directly to the comparison between *zibun-tati-zisin* and *karera-zisin* with respect to split-binding. Incidentally, Kasai (2000) provided ample data which show that the Korean counterpart of *zibun-tati-zisin* also allows local split-binding.

(5) a. John$_k$-ga   Bill$_j$-ni *zibun-tati-zisin$_{k+j}$*-nituite   katar-ta.
         John-NOM   Bill-DAT   SELF-PL-self   about   tell-PST

   'John$_k$ told Bill$_j$ about SELF$_{k+j}$.'

    b. Chomsky$_k$-ga   Lasnik$_j$-ni   *zibun-tati-zisin$_{k+j}$*-o   hihans-ase-ta.
        Chomsky-NOM   Lasnik-DAT   SELF-PL-self-ACC   criticize-CAUS-PST

   'Chomsky$_k$ made Lasnik$_j$ criticize SELF$_{k+j}$.'

Given the fact in (5), we draw the conclusion that a local reflexive allows split-binding in Japanese (and Korean). On the other hand, it has been reported, in the literature, that the split-binding for a locally-bound reflexive is also disallowed in French (Pica 1984), Italian (Napoli 1976), Greek (Chiou 2007), Tamil (Selvanathan 2009), Icelandic (Everaert 1986), Arabic (Tsukanova and Nikolaeva 2008), Hebrew (Doron 1983), and Quechua (van de Kerke 1991); therefore, we have come to the conclusion that Japanese and Korean (Katada 1991, Kasai 2000) are the only languages in which we have detected that split-binding is allowed for a local reflexive.

Now our issue is to explain the above cross-linguistic difference in terms of split-binding for a local reflexive. Notice here that neither Faltz's (1977) typological classification in terms of morphological complexity nor Burzio's (1991) typological classification in terms of φ-defectiveness can work for the purpose of explaining the above cross-linguistic variation. Drawing a comparison between Dutch and Japanese, we detect that Dutch is parallel to Japanese in that *zichzelf* in Dutch and *zibun(-tati)-zisin* in Japanese are both φ-defective (*zichzelf* lacks its *gender-* and *number*-features, and *zibun(-tati)-zisin* lacks its *person-* and *gender*-features) and they are both morphologically complex; that is to say, the locally-bound plural reflexives in Dutch and Japanese are equal with respect to their morphological complexity and φ-defectiveness. It is important, nonetheless, to recall that Japanese, but not Dutch, allows split-binding for a local reflexive, as noted above.

Two theoretically significant issues to be addressed here are: (i) What syntactic mechanism makes it possible for a locally-bound reflexive in Japanese (and Korean) to be split-bound?; and (ii) Why is it that only Japanese (and Korean) allow split-binding though many other languages disallow it despite the fact that some of the languages which disallow split binding have a reflexive whose binding-theoretic properties are very similar to the ones in Japanese (and Korean).

Hence, the purpose of this paper is twofold: The first purpose is to attest our empirical observation that a locally-bound reflexive in Japanese can be syntactically split-bound within its local domain. In §2, we will first classify the locally split-bound reflexives into a syntactically bound anaphor or a contextually emphatic logophor. Then we will also explicate the locality for the syntactically split-bound reflexives in §3. The second purpose is to explain the parametric difference between the languages allowing local split-binding and the ones disallowing it. In §4, we will elucidate the syntactic mechanism that enables a local anaphor to be

bound by more than one antecedent. In §5, we will clarify under what conditions local split-binding is possible. Significant consequences and theoretical implications of our proposals will be discussed in §6. Finally, §7 will conclude the present paper.

2.　Split Antecedence: Binding or Coreference?

Here, we are aiming at demonstrating that, despite the similarities in terms of their morphological complexity and their locality concerning syntactic binding, *zibun-tati-zisin* but not *karera-zisin* can be syntactically bound by split antecedents within its local domain. Before clarifying a distinction between them, we have to make a clear distinction between a syntactically bound anaphor and a (contextually emphatic) logophor that gets its referential antecedent through non-syntactic coreference (cf. Reinhart 1983).

First, let us summarize the difference between non-local/local anaphors in terms of their split-antecedence. A non-local anaphor (such as ordinary pronouns in English and Dutch) can be bound by more than one antecedent, as shown in (7) below:

(7)　a.　*English* (Seely 1993, Berman and Hestvik 1997)
　　　　^{OK}John$_k$ said [that Bill$_h$ hated *them$_{k+h}$*].

　　b.　*Dutch* (Koster 1986)
　　　　^{OK}John$_k$ zei [dat Peter$_h$ *hen$_{k+h}$* haat].

　　　　'John$_k$ said that Peter$_h$ hates them$_{k+h}$.'

On the other hand, a locally-bound plural reflexive such as *themselves* in English and *zichzelf* in Dutch, which exhibits clause-boundedness as its binding locality, cannot permit split-binding even when the purported antecedents occur within the minimal tensed clause including it, as noted in the previous section.

Lebeaux (1984) and Fiengo and May (1994) have tried to explain the ill-formedness of split-binding in English by attributing it to a violation of the traditional binding theory of Chomsky (1981), according to which no locally-bound anaphor can be bound by more than one antecedent. Then, it may come as a surprise to see that a local anaphor in Japanese allows split-binding, as shown in (5) above and in (8) below:

(8)　a.　Mary$_k$-ga　Jane$_h$-kara　*zibun-tati-zisin$_{k+h}$*/$^{??}$*kanojo-tati-zisin$_{k+h}$*-nituite　kii-ta.
　　　　Mary-NOM　Jane-from　SELF-PL-self / them-PL-self　　　about　hear-PST

　　　　'Mary$_k$ heard from Jane$_h$ about SELF$_{k+h}$.'

　　b.　John$_k$-ga　Bill$_j$-ni　*zibun-tati-zisin$_{k+h}$*/$^{?*}$*karera-zisin$_{k+h}$*-ni　kibisikus-ase-ta.
　　　　John-NOM　Bill-DAT　SELF-PL-self / them-self-DAT　　　do bitter-CAUS-PST

　　　　'John$_k$ made Bill$_h$ get tough with SELF$_{k+h}$.'

Seemingly, it looks like *zibun-tati*, the non-local plural anaphor in Japanese, also allows split antecedents (see Katada 1991 and Kasai 2000).

(9)   a.   John$_k$-ga   Bill$_j$-ni   *zibun-tati$_{k+j}$*-nituite   katar-ta.
                 John-NOM   Bill-DAT   SELF-PL   about   tell-PST

                 'John$_k$ told Bill$_j$ about SELF$_{k+j}$.'

    b.   Mary$_k$-ga   Jane$_j$-kara   *zibun-tati$_{k+j}$*-nituite   kii-ta.
                 Mary-NOM   Jane-from   SELF-PL   about   hear-PST

                 'Mary$_k$ heard from Jane$_j$ about SELF$_{k+j}$.'

    c.   Chomsky$_k$-ga   Lasnik$_j$-ni   *zibun-tati$_{k+j}$*-o   hihans-ase-ta.
                 Chomsky-NOM   Lasnik-DAT   SELF-PL-ACC   criticize-CAUS-PST

                 'Chomsky$_k$ made Lasnik$_j$ criticize SELF$_{k+j}$.'

Abe (1992) argues, however, that the split binding illustrated by the examples in (9) is not a genuine one, but it is obtained as a special case of the group reading for *zibun-tati* (cf. Kawasaki 1989).[4] That is, the anaphoric interpretation demonstrated in (9) is achieved not through syntactic binding but through coreference in discourse.

    Then, for the purpose of attesting our claim that *zibun-tati-zisin* allows split-binding in syntax, it is very significant to clarify a fine distinction between a syntactically bound anaphor and a contextually emphatic logophor in discourse. To detect it, we adopt Hoji's (2003) proposal that Comparative Ellipsis with Case-marker in Japanese is parallel to VP Deletion in English: the sloppy identity reading cannot be obtained unless an anaphoric (i.e., syntactically bound) element is involved in each of these constructions. Consider the following English examples:

(10)   a.   John$_k$'s friends will vote for John$_k$, and I want Bill$_j$'s friends to Ø, too.

                 Ø = 'vote for John$_k$', Ø ≠ 'vote for Bill$_k$'   (strict reading only)

    b.   Mary$_k$ will accept our present to her$_k$, and we want Jane$_j$ to Ø, too.

                 Ø = 'accept our present to Mary$_k$', Ø = 'accept our present to Jane$_k$'
                 (strict & sloppy)

    c.   John$_k$ will vote for himself$_k$, and I want Bill$_j$ to Ø, too.

                 Ø ≠ 'vote for John$_k$', Ø = 'vote for Bill$_k$'   (sloppy reading only)

(10c) has only a sloppy interpretation (that is, 'John will vote for John and I want Bill to vote for Bill.') and it can be safely said that a syntactically bound element *himself* is involved in

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4 See Appendix II for some discussion on *zibun-tati*, which we will ignore theretofore.

the elliptic part. On the other hand, (10b) has both the sloppy reading and the strict reading. According to Reinhart (1983) and Heim and Kratzer (1998), only a syntactically bound anaphor in the elliptic part has a sloppy interpretation, but a referential pronominal can have a strict interpretation by way of coreference in discourse. Thus, the sloppy reading is not available in (10a), where no syntactic binding is involved.

The examples in (11) below show the comparative ellipsis with Case-marker in Japanese:

(11)   a.   Yakunin-ga [Toodai$_k$-no   gakusei-ni   Ø yorimo sakini],   Kyoodai$_j$-no
            officer-NOM   Tokyo U.-GEN students-DAT   than earlier   Kyoto U.-GEN
            gakusei-ni   Kyoodai$_j$-no   kyooju-o   hihans-ase-ta.
            students-DAT Kyoto U.-GEN professor-ACC   criticize-CAUS-PST

Ø = 'criticized a professor at Kyoto U.$_j$', Ø ≠ 'criticized a professor at Tokyo U.$_k$' (strict only)

       b.   Yakunin-ga [Toodai$_k$-no   gakusei-ni   Ø yorimo sakini],   Kyoodai$_j$-no
            officer-NOM   Tokyo U.-GEN students-DAT   than earlier   Kyoto U.-GEN
            gakusei-ni   soko$_j$-no   kyooju-o   hihans-ase-ta.
            students-DAT it-GEN   professor-ACC   criticize-CAUS-PST

Ø = 'criticized a professor at Kyoto U.$_j$', Ø = 'criticized a professor at Tokyo U.$_k$' (strict & sloppy)

       c.   Yakunin-ga [Toodai$_k$-no   gakusei-ni   Ø yorimo sakini],   Kyoodai$_j$-no
            officer-NOM   Tokyo U.-GEN students-DAT   than earlier   Kyoto U.-GEN
            gakusei-ni   *mizukara$_j$*-o hihans-ase-ta.
            students-DAT SELF-ACC   criticize-CAUS-PST

Ø ≠ 'criticized the student at Kyoto U.$_j$', Ø = 'criticized the student at Tokyo U.$_k$' (sloppy only)

The fact shown in (11) indicates that, under the Japanese construction of Comparative Ellipsis with Case-marker, a syntactically free R-expression yields only the strict reading, a locally free pronominal yields both the strict reading and the sloppy reading, and a locally-bound reflexive yields only the sloppy reading. Accordingly, this fact conforms to Hoji's (2003) claim. Hoji (2003) therefore proposes to utilize Comparative Ellipsis with Case-marker for the purpose of detecting whether a given anaphoric expression is syntactically bound or contextually coreferential.

Now, we are applying Hoji's (2003) test to the following examples:

(12) a. Iinkai-ga   [John$_k$-ni Ø yorimo sakini], Bill$_j$-ni   *kare-zisin$_j$*-o
       committee-NOM   John-DAT   than earlier   Bill-DAT   him-self-ACC
       hihans-ase-ta.
       criticize-CAUS-PST

       Ø = 'criticized Bill$_j$', Ø ≠ 'criticized John$_k$'   (strict only)

     b. Iinkai-ga   [John$_k$-ni Ø yorimo sakini], Bill$_j$-ni   *zibun$_j$/zibun-zisin$_j$*-o
       committee-NOM   John-DAT   than earlier   Bill-DAT   SELF/SELF-self-ACC
       hihans-ase-ta.
       criticize-CAUS-PST

       Ø = 'criticized Bill$_j$', Ø = 'criticized John$_k$'   (strict & sloppy)

     c. Iinkai-ga   [John$_k$-ni Ø yorimo sakini], Bill$_j$-ni   *mizukara$_j$/onore$_j$*-o
       committee-NOM   John-DAT   than earlier   Bill-DAT   SELF/SELF-ACC
       hihans-ase-ta.
       criticize-CAUS-PST

       Ø ≠ 'criticized Bill$_j$', Ø = 'criticized John$_k$'   (sloppy only)

As shown in (12a), it can be safely said that *kare-zisin* allows only the strict reading because *kare* cannot be a bound variable (Hoji 1991, Noguchi 1997). In passing, from the fact that (12c) has the sloppy reading alone, we can conclude that *mizukara* ('SELF') and *onore* ('SELF'), both of which are simplex reflexive forms in Japanese, are a genuine locally-bound reflexive in Japanese (see Ishino and Ura 2011 for relevant discussion (cf., also, Kitagawa 1986)).

We will next examine whether *zibun-tati-zisin* and *karera-zisin*, both of which Katada (1991) has alleged to allow the split binding, allow the sloppy reading or not under the construction of Comparative Ellipsis with Case-marker. Pronouns+*zisin*, such as *karera/kanojotati-zisin* 'themselves' can have the strict reading alone, as shown in the examples in (13) below:

(13) a. John$_k$-ga   [Bill$_j$-ni Ø yorimo sakini], Tom$_g$-ni   *karera-zisin$_{k+g}$*-nituite
       John-NOM   Bill-DAT   than earlier   Tom-DAT   them-self   about
       katar-ta.
       tell-PST

       Ø = 'told SELF$_{*k+j(+else \subseteq g)/k+g(+else)/k+g+j(+else)}$.'   (strict only)

b. Mary$_k$-ga [Jane$_j$-kara Ø yorimo sakini], Sue$_g$-kara *kanojo-tati$_{k+g}$-zisin*-nituite
Mary-NOM Jane-from   than earlier   Sue-from them-PL-self   about
kii-ta.
hear-PST

Ø = 'heard about SELF$_{*k+j(+else⊖g)/k+g(+else)/k+g+j(+else)}$.'   (strict only)

c. Chomsky$_k$-ga [Lasnik$_j$-ni Ø yorimo sakini], Halle$_g$-ni *karera-zisin$_{k+g}$*-o
Chomsky-NOM Lasnik-DAT   than earlier   Halle-DAT them-self-ACC
hihans-ase-ta.
criticize-CAUS-PST

Ø = 'criticize SELF$_{*k+j(+else⊖g)/k+g(+else)/k+g+j(+else)}$.'   (strict only)

In (13a), the index *k+g(+else)* indicates the interpretation 'Before John told Tom about John and Tom, John told Bill about John and Tom', the interpretation of which corresponds to the strict reading, and the index *k+j(+else⊖g)* indicates the interpretation 'Before John told Tom about John and Tom, John told Bill about John and Bill', the interpretation of which corresponds to the sloppy reading. It is important to note that the sloppy reading in (13a) is missing. In terms of the index *k+g+j(+else)*, the index *g* is included when the group reading is available. The facts shown in (13a,b,c) show that there is no sloppy reading in the examples in (13). Therefore, we can say that *karera/kanojotati-zisin* has only the strict reading, but not the sloppy reading. The conclusion we have reached here is that pronouns+*zisin* in Japanese does not allow the split binding in syntax, though it seemingly looks as if it has its split antecedents, which takes only by way of coreference in discourse.

Zibun-tati-zisin, on the other hand, indeed allows the sloppy reading, as shown in the examples in (14) below:

(14) a. John$_k$-ga [Bill$_j$-ni Ø yorimo sakini], Tom$_g$-ni *zibun-tati-zisin$_{k+g}$*-nituite
John-NOM Bill-DAT   than earlier   Tom-DAT SELF-PL-self   about
katar-ta.
tell-PST

Ø = 'told SELF$_{k+j/k+g/k+g+j(+else)}$.'   (strict & sloppy)

b. Mary$_k$-ga [Jane$_j$-kara Ø yorimo sakini], Sue$_g$-kara *zibun-tati-zisin$_{k+g}$*-nituite
Mary-NOM Jane-from   than earlier   Sue-from SELF-PL-self   about
kii-ta.
hear-PST

Ø = 'heard about SELF$_{k+j/k+g/k+g+j(+else)}$.'   (strict & sloppy)

    c.   Chomsky$_k$-ga   [Lasnik$_j$-ni Ø yorimo sakini], Halle$_g$-ni *zibun-tati-zisin$_{k+g}$*-o
        Chomsky-NOM Lasnik-DAT   than earlier   Halle-DAT SELF-PL-self-ACC
        hihans-ase-ta.
        criticize-CAUS-PST

        Ø = 'criticize SELF$_{k+j/k+g/k+g+j(+else)}$.'   (strict & sloppy)

The index $k+j$ in (14a) indicates the interpretation 'Before John told Tom about John and Tom, John told Bill about John and Bill', the interpretation of which corresponds to the sloppy reading. The fact that *zibun-tati-zisin* has the strict reading has no significance for our discussion here. What we should notice here is that *zibun-tati-zisin* yields the sloppy reading under the construction of Comparative Ellipsis with Case-marker. From the facts in (14), we draw the conclusion that *zibun-tati-zisin* can be syntactically split-bound. Let us, again, notice the fact that the sloppy identity reading is missing in (13) though it is readily available in (14); as a consequence, pronoun(PL)+*zisin* cannot be syntactically split-bound, contrary to the claim made by Katada (1991) and Kasai (2000).

    In addition, the following examples including VP-deletions show that *karera-zisin* in (15a) cannot allow the sloppy reading, but *zibun-tati-zisin* in (15b) can. These facts also lend further support to our claim that *zibun-tati-zisin* can be syntactically split-bound:

(15)   a.   [Chomsky$_k$-ga Lasnik$_j$-ni [$_{VP}$ *karera-zisin$_{k+j}$*-o hihans]-ase-ta   kara],
         Chomsky-NOM Lasnik-DAT   them-self-ACC   criticize-CAUS-PST because
        Sag$_g$-mo   Pollard$_p$-ni Ø s-ase-ta.
        Sag-also   Pollard-DAT   did-CAUS-PST

        Ø = 'criticized Chomsky$_k$ and Lasnik$_j$', Ø ≠ 'criticized Sag$_g$ and Pollard$_p$'
        (strict only)

    b.   [Chomsky$_k$-ga Lasnik$_j$-ni [$_{VP}$ *zibunn-tati-zisin$_{k+j}$*-o hihans]-ase-ta   kara],
         Chomsky-NOM Lasnik-DAT   SELF-PL-self-ACC   criticize-CAUS-PST because
        Sag$_g$-mo   Pollard$_p$-ni Ø s-ase-ta.
        Sag-also   Pollard-DAT   did-CAUS-PST

        Ø = 'criticized Chomsky$_k$ and Lasnik$_j$', Ø = 'criticized Sag$_g$ and Pollard$_p$'
        (strict & sloppy)

    Another piece of supporting evidence can be seen in the examples in (16) below:

(16)   a. [OK]Daremo$_k$-ga dareka$_h$-ni *zibun-tati-zisin$_{k+h}$*-nituite katar-ta.

        'For every x, there was some y such that x told y about x and y, (and, x told y
        about the group including x and y.)

b. $^{\text{OK}}$Daremo$_k$-ga dareka$_h$-ni *zibun-tati-zisin$_{k+h}$*-nokoto-o soodansi-ta.

'For every x, there was some y such that x conferred with y about x and y, (and x conferred with y about the group including x and y.)'

According to Reinhart (1983) and Heim and Kratzer (1998), the bound variable reading of an anaphor manifests itself iff it is syntactically bound. The well-formedness of the examples in (16) also shows that *zibun-tati-zisin* can be syntactically split-bound.

To sum up, we have reached the conclusion that, among the locally-bound plural anaphora in Japanese, *zibun-tati-zisin* alone can be syntactically bound by split antecedents and pronoun(PL)+*zisin* takes its split antecedents only through coreference in discourse.[5]

3.   Locality of Split Binding

In this section, we will demonstrate that the syntactic mechanism for the split binding in syntax obeys a locality condition.

First, as shown in (17) below, when both of the antecedents of *zibun-tati-zisin* are located within the clause containing *zibun-tati-zisin*, the split binding is allowed:

(17)   a.   John$_k$-ga   Tom$_g$-ni   *zibun-tati-zisin$_{k+g}$*-nituite   katar-ta.
            John-NOM   Tom-DAT   SELF-PL-self   about   tell-PST

'John$_k$ told Tom$_g$ about SELF$_{k+g}$.'

b.   John$_k$-ga   [Bill$_j$-ni   Ø   yorimo sakini],   Tom$_g$-ni   *zibun-tati-zisin$_{k+g}$*-nituite
            John-NOM   Bill-DAT   than earlier   Tom-DAT   SELF-PL-self   about
            katar-ta.
            tell-PST

Ø = 'told about SELF$_{k+j(\text{-}g)}$.'   (sloppy OK)

Next, as shown in (18) below, when one of the antecedents of *zibun-tati-zisin* is located within the tensed-clause containing *zibun-tati-zisin* and the other is on the outside of the tensed-clause, the split binding is disallowed:

(18)   a.   Kannonbosatu-wa Gokuu$_k$-ni [Gojoo$_g$-ga   *zibun-tati-zisin$_{k+g}$*-ni situboosi-ta
            Kuan Yin-TOP   Gokuu-DAT   Gojoo-NOM   SELF-PL-self-DAT   despair-PST
            to]   hookokus-ase-ta.
            C   report-CAUS-PST

'Kaun Yin made Gokuu$_k$ report [that Gojoo$_g$ despaired of them$_{k+g}$].'

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[5] See Appendix III for split binding in English.

b. Kannonbosatu-wa [Gokuu$_k$-ni   Ø   yorimo sakini], Hakkai$_j$-ni [Gojoo$_g$-ga
Kuan Yin-TOP   Gokuu-DAT   than earlier   Hakkai-DAT Gojoo-NOM
zibun-tati-zisin$_{j+g}$-ni situboosi-ta to]   hookoku-sase-ta.
SELF-PL-self-DAT   despair-PST   C   report-CAUS-PST

Ø ≠ 'report that Gojoo$_g$ despaired of SELF$_{k+g(-j)}$.'   (sloppy NG)
Ø = 'report that Gojoo$_g$ despaired of SELF$_{j+g}$.'   (strict OK)

In (18b), the sloppy reading is missing. One might conjecture that the split binding indicated with the index displayed in (18a) is acceptable, but it should be noted again that the lack of the sloppy reading there implies that *zibun-tati-zisin* in this example is not syntactically bound by the purported split antecedents.

Finally, when both of the antecedents of *zibun-tati-zisin* are on the outside of the tensed-clause containing *zibun-tati-zisin*, the split binding is never allowed. Take a look at the following example:

(19) a. Sanzoo$_g$-ga   Gokuu$_k$-ni [mamono-ga   *zibun-tati-zisin$_{k+g}$*-ni
Sanzoo-NOM   Gokuu-DAT   goblin-NOM   SELF-PL-self-DAT
nir-tei-ta   to]   tuge-ta.
resemble-PROG-PST C   tell-PST

'Sanzoo$_g$ told Gokuu$_k$ [that goblins resembled them$_{k+g}$].'

b. Sanzoo$_g$-ga   [Gokuu$_k$-ni Ø yorimo sakini],   Hakkai$_j$-ni [mamono-ga
Sanzoo-NOM   Gokuu-DAT   than earlier   Hakkai-DAT   goblin-NOM
zibun-tati-zisin$_{k+g}$-ni nir-tei-ta   to]   tuge-ta.
SELF-PL-self-DAT   resemble-PROG-PST C   tell-PST

Ø ≠ 'told that goblins resembled SELF$_{k+g(-j)}$.'   (sloppy NG)
Ø = 'told that goblins resembled SELF$_{j+g}$.'   (strict OK)

As indicated by the fact that the strict reading of *zibun-tati-zisin* is missing in (19b), the split binding of *zibun-tati-zisin* in (19a) is obtained not through the syntactic binding, but through the coreference in discourse; as a consequence, the syntactic split binding is impossible when both of the antecedents of *zibun-tati-zisin* are on the outside of the tensed-clause containing *zibun-tati-zisin*.

To recapitulate, the observations carried out in this section reveal that no tensed-clause boundary can intervene between *zibun-tati-zisin* and any one of its split antecedents.

4. Explanation of Split Binding

In this section, we will try to explicate the syntactic mechanism of split binding. In the previous sections, we observed that *zibun-tati-zisin,* one of the locally-bound reflexive forms in Japanese tolerates the split antecedence, the observation of which necessitates reformula-

tion of any existing theory of (Japanese binding), no matter how it might have been formalized. Abandoning the traditional binding theory owing to its aforementioned empirical insufficiency, we propose to supplant it with a new theory of binding, according to which the binding relation between an anaphoric expression and its antecedent is materialized not through c-command plus referential coindexing (i.e., through the binding relation formulated under the traditional Binding Theory in Chomsky (1981)) but through *Agree*, the approach which has recently been developed and defended by not a few researchers (Heinat 2008, Reuland 2008, Quicoli 2008, Lee-Schoenfeld 2008, Hicks 2009, *inter alia*).

4.1.   Assumptions and Proposals

In recent studies on syntax of reflexive binding, it has often been proposed (see Reuland 2008, Uriagereka and Gallego 2006, and Gallego 2010) that a φ-defective reflexive must be φ-complete at LF (cf., also, Bouchard 1984, Burzio 1991), where every element must be properly interpreted (Chomsky 1995). Consequently, the syntactic binding of (φ-defective) reflexives can be recast within the Agree theory under the current minimalist Probe-Goal framework (Chomsky 2001 and subsequent work).

Following, basically, the theory of Binding through Agree proposed in Uriagereka and Gallego (2006) and Gallego (2010), we will make the following four assumptions: (I) A φ-defective reflexive must have its φ-features valued by a Probe with the whole φ-feature amalgam in order to become φ-complete; (II) α binds β if they are both Goals of a single relevant Probe; otherwise, α and β are obviative; and (III) we particularly hypothesize that T with the whole φ-feature amalgam supplies φ-features through Agree to a φ-defective anaphor at a post-Spell-Out level (because the referential interpretation is supposed to take place at LF); that is, T with the whole φ-feature amalgam serves as a Probe for a φ-defective anaphor; and (IV) the φ-completeness for anaphoric expressions is a requirement for interpretation (cf. Bouchard 1984 and Burzio 1991).

It is important to note, here, that these assumptions demand that the feature-binding through Agree should take place at a post-Spell-Out (i.e., at LF); as a consequence, a PHASE, being a cycle for Spell-Out, never bears on the locality of Binding through Agree under our assumptions.

4.2.   Binding by a Single Antecedent

With the abovementioned assumptions in mind, let us take consideration of an ordinary binding by a single antecedent. Look at the following Japanese example, which includes *zibun-zisin* at the object position of a tensed clause and the subject DP of the clause:

(20)   a.   John$_k$-ga   *zibun-zisin$_k$*-o   kirat-tei-ta   (koto).
          John-NOM   SELF-self-ACC   hate-PROG-PST   (fact)

          '(the fact that) John$_k$ hated himself$_k$'

b.
$$[_{TP} \text{John-ga} \quad [_{vP} \textit{zibun-zisin}\text{-o} \quad V \quad] \quad T_{[\phi]}]$$

OK (bracket from John-ga to T)

c.
$$[_{TP} \text{John}_k\text{-ga} \quad [_{vP} \textit{zibun-zisin}_k\text{-o} \quad V \quad] \quad T_{[\phi]}]$$

OK (bracket from John-ga to T); OK (bracket from zibun-zisin to T)

T[+tense] agrees with the subject DP to provide it with the nominative Case before Spell-Out, as illustrated in (20b). Then, T[+tense] with the whole φ-feature amalgam can agree with a φ-defective reflexive in order to supply it with φ-features at LF, as illustrated in (20c). Because *zibun-(tati-)zisin* lacks the specifications for *person* and *gender*, it must be supplied with φ-features by T[+tense] through Agree. As a consequence, Agree has established the binding relation between the subject and the reflexive through the mediation of T.

Next, we will show that the clause-boundedness of *zibun-zisin*, which we noted in §1, also follows directly. Consider the structure in (21) below:

(21) $[_{TP} \text{DP-ga} ..... [_{CP} [_{TP} \text{DP-ga} \quad [_{vP} \textit{zibun-zisin}\text{-o} \quad V \quad] \quad \underline{\mathbf{T}_{[\phi]}}] \quad C] \quad T_{[\phi]}]$

T[+tense] in the embedded CP has the whole φ-feature amalgam and T in the embedded CP is the nearest Probe for *zibun-zisin*; as a consequence, Agree between the matrix T and *zibun-zisin* is prohibited, as (22a) below illustrates, and only the agree relation between the DP at the subject position of the embedded CP and *zibun-zisin* can hold, as illustrated in (22b) below:

(22) a. $[_{TP} \text{DP-ga} ..... [_{CP} [_{TP} \text{DP-ga} \quad [_{vP} \textit{zibun-zisin}\text{-o} \quad V \quad] \quad \underline{\mathbf{T}_{[\phi]}}] \quad C] \quad T_{[\phi]}]$

OK (inner bracket); * (outer bracket)

b. $[_{TP} \text{DP}_k\text{-ga} ..... [_{CP} [_{TP} \text{DP}_h\text{-ga} \quad [_{vP} \textit{zibun-zisin}_{*k/h}\text{-o} \quad V \quad] \quad T_{[\phi]}] \quad C] \quad T_{[\phi]}]$

OK (outer bracket); OK (inner bracket)

4.3. Split Binding

Here, let us assume that T[+tense] in Japanese (and Korean) is capable of agreeing with more than one Goal other than its canonical subject DP (see Ura 1996 and Hiraiwa 2005 for much relevant discussion). Given this assumption, we will explicate the syntactic mechanism of the split binding through Agree. First, let us take a look at the example in (23a) below:

(23) a.

John$_k$-ga	Bill$_h$-ni	*zibun-tati-zisin$_{k+h}$*-nituite	katar-ta.
John-NOM	Bill-DAT	SELF-PL-self	about	tell-PST

'John$_k$ told Bill$_h$ about themselves$_{k+h}$.'

b. $[_{TP}$ John-ga $[_{vP}$ Bill-ni *zibun-tati-zisin*-nituite V] $T_{[\varphi]}$]

c. $[_{TP}$ John$_k$-ga $[_{vP}$ Bill$_h$-ni *zibun-tati-zisin$_{k+h}$*-nituite V] $T_{[\varphi]}$]
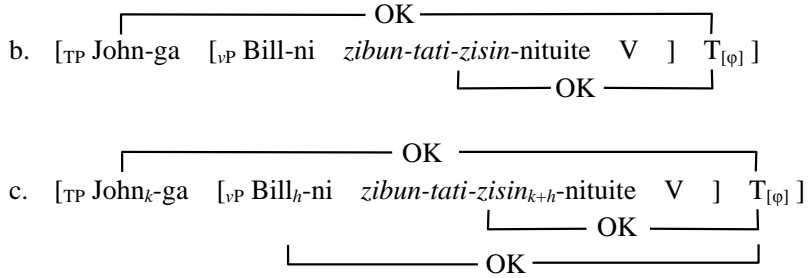
As illustrated in (23b), T agrees with the subject DP to provide it with the nominative Case. Then, in (23c), T[+tense] with the whole φ-feature amalgam agrees with *zibun-tati-zisin*, which is a φ-defective reflexive, to supply it with φ-features; moreover, (23c) illustrates that T can agree *optionally* with another DP when the DP is within the same clause thanks to T's multiple checking ability in Japanese (and Korean). If this situation arises, T with the whole φ-feature amalgam mediates three Goals; namely, the subject DP, the φ-defective reflexive, and the non-subject DP within its clause, as illustrated in (23c). Under our theory of binding, this gives rise to a situation where the φ-defective reflexive is syntactically bound by the subject DP and another DP within the clause; whence, split-binding emerges, as required.[6]

This reasoning leads us to the prediction that split-binding is not materialized when either or both of the split antecedents is/are not within the same clause in which the reflexive is embedded, as shown in (24) and (25) below:

(24) a. Kannonbosatu-wa [Gokuu$_k$-ni Ø yorimo sakini], Hakkai$_j$-ni [Gojoo$_g$-ga
    Kuan Yin-TOP Gokuu-DAT than earlier Hakkai-DAT Gojoo-NOM
    zibun-tati-zisin$_{j+g}$-ni situboosi-ta to] hookoku-sase-ta.
    SELF-PL-self-DAT despair-PST C report-CAUS-PST

    Ø ≠ 'report that Gojoo$_g$ despaired of SELF$_{k+g(-j)}$.'   (sloppy NG)
    Ø = 'report that Gojoo$_g$ despaired of SELF$_{j+g}$.'   (strict OK)

---

[6] It is highly probable that D also has the φ-feature specifications, resulting in the Probe for a φ-defective reflexive to supply it with the φ-features. As a consequence, the split binding can be allowed within a DP containing *zibun-tati-zisin*. For example, look at (i), where the plural reflexive allows split antecedents in syntax, as is confirmed by the fact that it is interpreted as a variable bound by one of its antecedents:

(i)^{OK} kaku iin$_k$-no iintyou$_h$-nitaisuru *zibun-tazi-zisin$_{k+h}$*-nitaisuru
    each committeeman-GEN committee chair-towards SELF-PL-self-against
    kokuhatsu
    accusation

    'Each committeeman's accusation against SELF towards the chair'

Given that D in Japanese can have a multiple checking ability with some φ-feature specification, it is natural that the split binding within a DP is allowed in Japanese. We will leave it to future research to pursue this issue further, however.

    b.   Sanzoo$_g$-ga   [Gokuu$_k$-ni Ø yorimo sakini], Hakkai$_j$-ni   [mamono-ga
        Sanzoo-NOM   Gokuu-DAT   than earlier   Hakkai-DAT   goblin-NOM
        zibun-tati-zisin$_{k+g}$-ni nir-tei-ta   to]   tuge-ta.
        SELF-PL-self-DAT   resemble-PROG-PST C   tell-PST

        Ø ≠ 'told that goblins resembled SELF$_{k+g(\text{-}j)}$.' (sloppy NG)
        Ø = 'told that goblins resembled SELF$_{j+g}$.' (strict OK)

(25)   a.   *Daremo$_k$-ga sensei-ni [dareka$_h$-ga *zibun-tati-zisin$_{k+h}$*-o hihansi-ta to] it-ta.

          ≠ 'For every x, there is some y such that x told the teacher that y criticized x and y.'

    b.   *Daremo$_k$-ga dareka$_h$-ni [sensei-ga *zibun-tati-zisin$_{k+h}$*-o hihansi-ta to] it-ta.

          ≠ 'For every x, there is some y such that x told y that the teacher criticized x and y.'

In (25), the tensed-clause boundary intervenes between *zibun-tati-zisin* and one/both of its antecedents. (25a) is unacceptable when the reflexive is construed as a variable bound by the split antecedents. This lends strong support to our proposed theory of Binding through Agree.

It should be noticed that, under our theory of Binding through Agree, split-binding in syntax emerges iff T optionally agrees with some elements other than the subject DP with which T agrees for the purpose of providing nominative Case to it. Look at (26) below:

(26)   a.   [John$_k$ to Bill$_h$]-ga   Mary$_j$-ni   *zibun-tati-zisin$_{k+h/k+h+j}$*-nituite katar-ta.
            John and Bill-NOM   Mary-DAT   SELF-PL-self   about   tell-PST

        'John$_k$ and Bill$_h$ told Mary$_j$ about themselves$_{k+h/k+h+j}$.'

                                ━━━━━━━ OK ━━━━━━━
    b.   [$_{TP}$ [John$_k$ to Bill$_h$]-ga [$_{vP}$ Mary$_j$-ni *zibun-tati-zisin$_{k+h}$*-nituite V] T$_{[\varphi]}$]
                                            ━━━━━ OK ━━━━━

                                ━━━━━━━ OK ━━━━━━━
    c.   [$_{TP}$ [John$_k$ to Bill$_h$]-ga [$_{vP}$ Mary$_j$-ni *zibun-tati-zisin$_{k+h+j}$*-nituite V] T$_{[\varphi]}$]
                                            ━━━━━ OK ━━━━━
                                    ━━━━ **OK** ━━━━
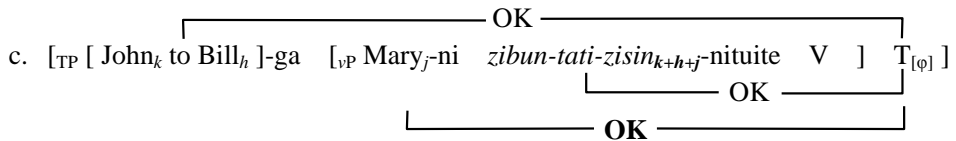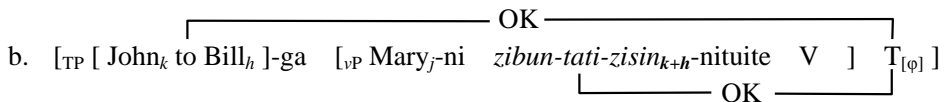
(26a) has two interpretations because of T's optional feature checking. When T does not execute an optional agreement with anything other than the conjoined plural subject, the ordinary binding between *zibun-tati-zisin* and the conjoined subject is established, as illustrated in (26b). If, on the other hand, T happens to execute an optional agreement with *Mary* in addition to its obligatory agreement with the conjoined plural subject, then the split binding is successfully established as shown in (26c).

4.4.　Interim Summary

In this section, we have argued (i) that *zibun(-tati)-zisin* is a φ-defective anaphor, which needs to be licensed through Agree by T with the φ-complete specifications, (ii) that the binding relation between *zibun(tati)-zisin* and its antecedent(s) is mediated through Agree by T, and (iii) that, when the situation occurs in which T may agree with some element other than its subject DP, the split binding of *zibun-tati-zisin* emerges.

5.　Split Binding and Its Parametric Variation

Up through the previous sections, we have demonstrated how the theory of Binding through Agree enables us to explain the syntactic mechanism of the split binding for a locally-bound reflexive. To elucidate the cross-linguistic variation concerning split binding is our remaining issue in this paper. In this section, we will thus attempt to deduce the contrast between the languages allowing the split binding for a locally-bound reflexive and the ones disallowing it from some independently motivated assumptions concerning parametric differences in human language. Recall that we observed in §1 that the split-binding for a locally-bound reflexive is disallowed in English, Dutch, Chinese, French, Italian, Greek, Tamil, Icelandic, Arabic, Hebrew, and Quechua, whereas, as we extensively argued, Japanese (and Korean) allow the split binding for a locally-bound reflexive.

In §4, we demonstrated (A) that a binding relation through Agree is essential for the split binding; and (B) that the split binding for a locally-bound reflexive can be materialized only if T has the ability of multiple checking. Because only φ-defective reflexives need to be bound by way of binding through Agree, the fact (A) means that the split binding for a locally-bound reflexive in a language *L* is materialized only if the locally-bound reflexive in *L* is a φ-defective anaphor. Thus, we have reached the following conclusion:

(27)　Split-binding for a locally-bound reflexive is materialized in a language *L* iff both (i) and (ii) hold:

　　　(i)　the locally-bound reflexive in *L* is a φ-defective anaphor;
　　　(ii)　T in *L* is capable of multiple feature checking.

Indeed, the conditions stated in (27) are very pertinent to the aforementioned observation concerning the cross-linguistic variation concerning split binding: Notice that English, French, Italian and Modern Greek disallow the split binding because they deviate from both of (i) and (ii); for, the reflexives in those languages have a full-fledged specification of the φ-features and T does not allow multiple checking in those languages. On the other hand, Dutch, Tamil, Icelandic and Chinese have a locally-bound φ-defective reflexive, they disallow the split binding for it; for, they deviate from condition (ii); that is, they do not allow T to check more than one nominative. In Arabic and Quechua, in contrast, T has a multiple checking ability because they allow the multiple nominative construction (see Ura 1994, 1996); nevertheless, they disallow the split binding for a locally-bound reflexive; for, they deviate

from the condition (i); that is, their locally-bound reflexives have a complete specification of their φ-features. Finally, it is because Japanese (and Korean) comply with both (i) and (ii) that they allow the split binding for a locally-bound reflexive. In (28) below, we summarize the parametric variation of the split binding for a locally-bound reflexive:

(28)   Parametric variation concerning the split binding for a locally-bound reflexive

      Split binding is prohibited:

          a. English, French, Italian, and Modern Greek: <u>deviant both from (i) and from (ii)</u>
             (cf. *French* (Pica 1984); *Italian* (Napoli 1976); *Modern Greek* (Chiou 2007))

          b. Dutch, Tamil, Icelandic, and Chinese: <u>deviant from (ii)</u>
             (cf. *Dutch* (Koster 1984); *Tamil* (Selvanathan 2009);
             Icelandic (Everaert 1986))

          c. Arabic, Hebrew, and Quechua: <u>deviant from (i)</u>
             (cf. *Arabic* (Tsukanova and Nikolaeva 2008); *Hebrew* (Doron 1983);
             Quechua (van de Kerke 1991))

      Split binding is permitted:

          d. Japanese and Korean (& Kumyk): <u>compliant both with (i) and with (ii)</u>
             (cf. *Korean* (Kasai 2000))

In this section we argued that our theory of split binding is adequate enough to explain the cross-linguistically detected parametric difference in terms of split binding.

6.   Consequences and Theoretical Implications of the Feature Binding in Japanese

    In this section we will sketch out some consequences of our theory of split binding.

6.1.   Subject Orientation

    Given that T agrees usually with the subject DP in a tensed clause in order to provide nominative Case to the subject DP, the subject orientation of *zibun(-zisin)* can be explained straightforwardly: Because *zibun(-zisin)* must agree with T in order to make its defective φ-features complete, T always mediates the agreement between the subject DP and *zibun(-zisin)* in terms of binding relation. Thus, our proposed theory of Binding through Agree naturally enables us to explain that *zibun(-tati)-zisin* (and *zibun(-tati)*) show subject orientation. Look at the examples of multiple Nominative construction in Japanese in (29) below:

(29)   a. John$_j$-dake-ga   imooto$_k$-ga   *zibun-tati-zisin$_{j+k}$*-o hihanshi-ta.
              John-only-NOM   sister-NOM   SELF-PL-self-ACC   criticize-PST

           'As for only John, his sister criticized SELF$_{j+k}$.'

      b. John$_j$-dake-ga   imooto$_k$-ga   Mary$_l$-ni   *zibun-tati-zisin$_{j+k/j+k+l/*j+l/*k+l}$*-nituite
              John-only-NOM   sister-NOM   Mary- DAT SELF-PL-self   about
              katar-ta.
              tell-PST

           'As for only John, his sister told Mary about SELF$_{j+k/j+k+l/*j+l/*k+l}$.'

It has been assumed (cf. Ura 1996 and Hiraiwa 2005) that a single T in Japanese may enter into multiple nominative Case feature checking relations with multiple Subjects. Given our theory of Binding through Agree, according to which T mediates a binding relation between a subject DP and a φ-defective reflexive within its clause, it can be naturally explained that (29a) has the interpretation 'John's sister criticized John and herself,' because T individually agrees with *John* and with *imooto* 'sister' in the nominative Case and their φ-features. Then, T provides *zibun-tati-zisin* with their φ-features.

Next, consider the example in (29b). In (29b) T agrees obligatorily with the two subjects *John* and *imooto* to provide them with nominative Case. Additionally, if T agrees optionally with the non-subject DP *Mary*, *zibun-tati-zisin* can be split bound by the two subjects and *Mary*, resulting in the split binding, as shown by the index '$j+k+l$'. An empirically interesting point here is that the split binding by one of its subjects (nominative DPs) and the non-subject DP is never allowed, as shown by the index '$*j+l$' and '$*k+l$'. That is, there is no way for the subjects (nominative DPs) with which T agrees not to enter into the binding relation with *zibun-tati-zisin* in (29b), but only the non-subject DP is allowed to be free from the binding relation because T may or may not agree with it in (29b). This lends a piece of strong supporting evidence for the syntactic mechanism of split binding through the mediation of T.

6.2. Φ-complete Anaphora as a Reflexivizer

Because pronoun+*zisin* (such as *kare(ra)-zisin*), another locally-bound reflexive in Japanese, is φ-complete, it needs no φ-feature agreement with T; rather, we assume, following Aikawa (1993), that pronoun+*zisin* is a reflexivizer à la Reinhart and Reuland (1993). Given this, the binding relation between pronoun+*zisin* and its antecedent is materialized not through syntactic binding but through co-argumenthood; as a result, its strict locality follows. Contra Aikawa (1993), however, we hypothesize that the other reflexives in Japanese are not a reflexivizer. The fact that pronoun+*zisin* needs no φ-feature agreement with T results in its lack of subject orientation.

6.3. Zibun vs. Zibun-zisin

As for the non-local reflexive *zibun(-tati)* in Japanese, its lack of person- and gen-

der-features indicates that it is φ-defective. Thus, we predict that *zibun-tati* permits split binding. The syntactic mechanism of the split binding of *zibun-tati* can be explained consistently with our proposed theory of Binding through Agree (See Appendix II for a diagnosis of syntactically split binding with respect to *zibun-tati*). Why is it that *zibun(-tati)* behaves differently from *zibun(-tati)-zisin* in terms of the locality of binding dependency? We follow the idea that the former, being morphologically simple, may undergo (sometimes long-distance) LF movement (à la Pica 1991, Katada 1991, Hestvik 1992, etc.).[7] In addition, we assume that binding through the Probe-Goal agreement should take place after *zibun* undergoes long-distant LF movement. Therefore, if *zibun* in an embedded tensed clause moves up to the matrix clause, the matrix T can agree with *zibun* after its long-distant movement. As a result, the long-distant binding between the subject DP and *zibun* can be established through the mediation of the matrix T at LF. This indicates that *zibun* allows the long-distant binding over a tensed-clause boundary.

Then, an empirically significant question arises: Why is it that the split binding of *zibun-tati* with the property of long-distant LF movement is not allowed when the tensed-clause boundary intervenes between *zibun-tati* and one of its antecedents? Consider the following examples in (30) by comparing it with the examples of *zibun-tati-zisin* in (25) above.

(30) a. *Daremo$_k$-ga sensei-ni [dareka$_h$-ga *zibun-tati$_{k+h}$*-o hihansi-ta to] it-ta.

$\neq$ 'For every *x*, there is some *y* such that *x* told the teacher that *y* criticized *x* and *y*.'

b. ^{OK}Daremo$_k$-ga dareka$_h$-ni [sensei-ga *zibun-tati$_{k+h}$*-o hihansi-ta to] it-ta.

= 'For every *x*, there is some *y* such that *x* told *y* that the teacher criticized *x* and *y*.'

Given that *zibun-tati* in an embedded tensed clause can undergo long-distant LF movement, it can be naturally explained why (30b) is acceptable in contradiction to the ill-formed examples of *zibun-tati-zisin*, as shown in (25b). When one of its antecedents is on the outside of the embedded tensed clause, as shown in (30a), the binding relation between *zibun-tati* and the subject DP of the matrix clause can be established through the mediation of the matrix T, but the matrix T cannot agree with another possible antecedent in the embedded tensed clause (i.e., the subject DP in the embedded tensed clause), because T in the embedded tensed clause agrees with the embedded subject DP. Then the derivation crashes at LF, and this is why (30a) is unacceptable. However, when both of its antecedents are on the outside of the embedded tensed clause, we predict that the split binding of *zibun-tati* (i.e., the binding relation between the subject DP and the non-subject DP in the matrix clause and *zibun-tati* within the embedded tensed clause) is allowed, unlike the same situation of *zibun-tati-zisin*. This is bor-

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[7] In Appendix I, we argue that other Japanese morphologically simplex reflexives *mizukara* and *onore* are locally bound. This is because we assume *mizukara* and *onore* cannot move at LF. As a result, it can be naturally explained that they show the same locality for the binding dependency as that of *zibun-zisin*; that is, they can be bound over the non-tensed-clause boundary, but they cannot be bound when the tensed-clause boundary intervenes between them and their antecedents.

ne out, as shown in (30b).

6.4. Binding within Causative Clauses

It is very interesting to consider how our theory of split binding enables us to explain that a φ-defective anaphor in a causative clause can be bound by a causer over the non-tensed clause boundary. This fact was first reported in Kuroda (1965), as shown in (31a) below:

(31) a. John$_k$-ga   [Bill$_h$-ni   *zibun-zisin$_{k/h}$*-o   mi]-sase-ta.   (Kuroda 1965)
          John-NOM   Bill-DAT   SELF-self-ACC   see-CAUS-PST

          'John made Bill see SELF.'

      b. John$_k$-ga   [Bill$_h$-ni   *kare-zisin$_{*k/h}$*-o   mi]-sase-ta.   (Kurata 1986)
          Johkn-NOM   Bill-DAT   himself-ACC   see-CAUS-PST

          'John made Bill see himself.'

In (31a), the local reflexive *zibun-zisin* can be bound by the causer *John* over the non-tensed clause boundary, even though it cannot undergo LF movement. In contrast, *kare-zisin*, the other local reflexive in Japanese, cannot be bound over a non-tensed clause boundary, as shown by the ill-formedness of (31b).

6.4.1. Two Types of Causative Clause

Under our theory of split binding, the antecedent(s) of a φ-defective anaphor is/are always destined to be the one with which T agrees. In this paper, we assume that the causative clause may or may not have T[−tense] with the φ-complete specifications (see Kitagawa 1986 for a similar idea). If the causative clause does not have T[−tense] (in this case, the causative clause is *v*P, as shown in (32) below), there is no Probe for a φ-defective reflexive in *v*P within the causative clause:

(32) *causative clause = vP*

$$[\text{TP DP}_k\text{-ga} \quad [\text{vP DP}_h\text{-ni} \quad \text{zibun-zisin}_{k/*h}\text{-o} \quad \text{V} \quad] \quad \text{CAUS} \quad \text{T}_{[\varphi]}]$$

with "OK" brackets spanning from CAUS–T$_{[\varphi]}$ region and from TP DP$_k$-ga region.
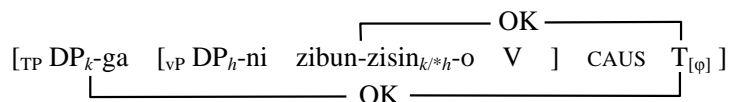
As a result, T[+tense] in the matrix clause turns out to be a Probe and agrees with the reflexive and it also agrees with the subject DP. Here it should be recalled that a binding dependency through Agree is established at LF, where phases are irrelevant to any operation. Thus, the binding relation between the causer at the matrix clause and the φ-defective reflexive within the causative clause over the non-tensed clause boundary can safely be established, as required, when the causative clause does not have T.

On the other hand, if the causative clause has T[−tense] with the φ-complete specifications (in this case, the causative clause is TP, as shown in (33) below), T in the causative

clause can agree with the causee within the causative clause, but it cannot agree with the causer at the matrix clause, because T in the embedded clause is the T nearest to the causee, but it is not the T nearest to the causer (because the matrix T is the nearest to the causer). Thus, the φ-defective reflexive within the causative clause can be bound by the causee through the mediation of the embedded T, but it cannot be bound by the causer at the matrix clause when the causative clause has T.

(33)   *causative clause = non-tensed TP with φ-complete specifications*

$$\text{[}_{TP}\ \text{DP}_k\text{-ga}\quad \text{[}_{TP}\ \text{DP}_h\text{-ni}\quad \text{zibun-zisin}_{*k/h}\text{-o}\quad \text{V}\quad \text{T}_{[\varphi]}]\quad \text{CAUS}\quad \text{T}_{[\varphi]}\ ]$$

（with OK linking from DP$_k$-ga to zibun-zisin region, and OK linking from DP$_h$-ni to T$_{[\varphi]}$）
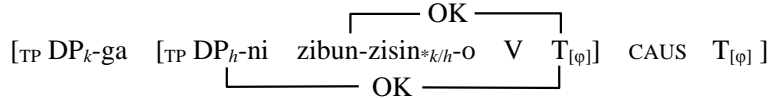
To sum up, a φ-defective reflexive within the causative clause is bound by the causee within the causative clause when the causative clause has T, while it is bound by the causer at the matrix clause when the causative clause does not have T.

6.4.2. Ban on Crossover-Binding

In this subsection, we will provide a piece of supporting evidence for the above conclusion that there are two types of causative clause in Japanese. Look at the following example in (34), where crossover-binding is blocked; that is, the two occurrences of *zibun-zisin* must have the same single binder:

(34)   John-wa   [Taro-ni   *zibun-zisin*-no   hahaoya-ni   *zibun-zisin*-no
        John-TOP   Taro-DAT   SELF-self-GEN   mother-DAT   SELF-self-GEN
        koibito-o   shookais]-ase]-ta.
        girl friend-ACC   introduce-CAUSE-PAST.

        'John made Taro introduce SELF's girl friend to SELF's mother.'

In (34), the two occurrences of *zibun-zisin* must have *Taro* as their binder or they must have *John* as their binder, but it cannot be the case that one of them has *Taro* and the other has *John* as their binders. It should be noted, however, that crossover-binding is possible in general, as shown in (35):

(35)   Toyota-sae$_k$-ga   dono sitauke-gaisya$_j$-ni-mo   soko$_j$-no   keiei-bumon-e
        Toyota-even-NOM   every subsidiary-DAT-PRT   it-GEN   managing section-to
        soko$_k$-no syain-o   ukeire-sase-ta.
        it-GEN   staff-ACC   take in-CAUS-PST

        'Even Toyota$_k$ made every subsidiary$_j$ take in its$_k$ staff to its$_j$ managing section.'

Why is the crossover-binding impossible in (34)? If the causative clause in (34) happens to have T, then our theory described in §6.4.1 above demands that the two occurrences of *zibun-zisin* should be feature-bound by the causee, which agrees with the T within the causative clause; accordingly, they must have the causee as their binder. On the other hand, if the

causative clause in (34) happens to lack T, then our theory demands that the two occurrences of *zibun-zisin* should be feature-bound by the matrix T, which agrees with the causer at the Spec of the matrix T; accordingly, they must have the causer as their binder. It is important to notice, here, that our theory appropriately explains that there is no crossover-binding in (34).

6.4.3. Subjecthood of Causee

Given Ura's (1996, 2000) assumption that a DP assumes subjecthood when the DP agrees with T, then we are led to predict (I) that the causee in a causative clause has subjecthood when *zibun-zisin* is bound by the causee, and (II) that the causee in a causative clause does not have subjecthood when *zibun-zisin* within the causative clause is bound by the causer at the matrix clause. Look at (36):

(36)   Mary$_k$-wa [John$_h$-ni [PRO okori-nagara] *zibun-zisin*-o   hihans]-ase-ta.
        Mary-TOP   John-DAT   angry-while   SELF-self-ACC criticize-CAUS-PAST

        'Mary made John criticize SELF, while PRO being angry.'

The factual interpretation for (36) is as follows: If *zibun-zisin* is to be bound by *John*, PRO in the adjunct adverbial clause must be construed as *John*, and if *zibun-zisin* is to be bound by *Mary*, PRO in the adjunct adverbial clause must be construed as *Mary*. This fact becomes clearer if we take a closer look at the interpretation for (37) below:

(37)   a.   Mary$_k$-wa [karera$_h$-ni [PRO$_{*k/h}$ okori-nagara] *zibun-tati-zisin$_h$*-o
              Mary-TOP   them-DAT   angry-while   SELF-self-ACC
              hihans]-ase-ta.
              criticize-CAUS-PAST

              'Mary$_k$ made them$_h$ criticize SELF$_h$, while PRO$_{*k/h}$ being angry.'

        b.   Mary$_k$-wa [karera$_h$-ni [PRO$_{k/??h}$ okori-nagara] *zibun-zisin$_k$* -o
              Mary-TOP   them-DAT   angry-while   SELF-self-ACC
              hihans]-ase-ta.
              criticize-CAUS-PAST

              'Mary$_k$ made them$_h$ criticize SELF$_k$, while PRO$_{k/??h}$ being angry.'

In the case where (37a) is acceptable, it must be that *zibun-tati-zisin* is bound by the causee *karera*, because it is a plural form. Thus, the causative clause in (37a) must be TP and T[−tense] in the causative clause inevitably agrees both with the reflexive and with the causee. Because there is no interpreting the controller of PRO in the adjunct adverbial clause as any element other than *karera* in (35a), the prediction with our theory is borne out, as required. This lends strong support to our theory of Binding through Agree.

7. Conclusion

Our aim in this paper was to clarify under what conditions the split binding is possible. First, we have argued that one of the Japanese locally-bound reflexive form *zibun-tati-zisin* can be syntactically bound by split antecedents within its local domain. Next, we have proposed the theory of Binding through Agree, and demonstrated that T with the ability of multiple checking mediates the agreement between a φ-defective reflexive and its split antecedents (i.e., the subject DP and the non-subject DP). We also explained the parametric difference between the languages allowing the split binding for a locally-bound reflexive and the ones disallowing it.

Appendix I: **Morphologically Simple Reflexives That Are Locally-bound**

Mizukara and *onore*, being their φ-defective nature, show subject orientation, too (Ishino and Ura 2011), as correctly predicted with our theory presented herein.

(I.1)   a.   John$_k$-ga   Bill$_j$-ni   *mizukara$_{k/*j}$/onore$_{k/*j}$*-nituite   katar-ta.
              John-NOM   Bill-DAT   SELF/SELF   about   tell-PST

              'John$_k$ told Bill$_j$ about SELF$_{k/*j}$.'

       b.   John$_k$-ga   Bill$_j$-ni   *zibun-zisin$_{k/*j}$/zibun$_{k/*j}$*-nituite   katar-ta.
              John-NOM   Bill-DAT   SELF-self/SELF   about   tell-PST

              'John$_k$ told Bill$_j$ about SELF$_{k/*j}$.'

       c.   John$_k$-ga   Bill$_j$-ni   *kare-zisin$_{k/j}$*-nituite   katar-ta.
              John-NOM   Bill-DAT   he-self   about   tell-PST

              'John$_k$ told Bill$_j$ about SELF$_{k/j}$.'

As observed in (11c) and (12c) above in the main text, *mizukara* and *onore* differ from *zibun* and *zibun-zisin* in that the former disallow the strict identity reading in an elliptical domain as a surface anaphor. Ishino and Ura (2011) argue that *zibun* and *zibun-zisin* can be used not only as a φ-defective anaphor but also as a referential pronominal, which does not need any syntactic binding, whereas *mizukara* and *onore* can only be used as a φ-defective anaphor in syntax.

The morphologically simple reflexive forms *mizukara* and *onore* in Japanese, unlike the other morphologically simple reflexive *zibun*, show the strict locality just like pronoun+*zisin* and *zibun-zisin* (cf. Kitagawa 1986 and Ishino and Ura 2011). This fact is revealed by the ill-formedness of (I.2a,b,c) below:

(I.2) a. *Sanzoo$_k$-ga   Gokuu-ni   [mamono-ga *zibun-zisin$_k$/kare-zisin$_k$*-o
        Sanzoo-NOM   Gokuu-DAT   goblin-NOM   SELF-self/he-self-ACC
        oikaker-teir-u   to]   tuge-ta.
        chase-PROG-PRES   C   tell-PST

        'Sanzo$_k$ told Goku [that goblins chased SELF$_k$].'

    b. *Sanzoo$_k$-ga   Gokuu-ni   [mamono-ga *mizukara$_k$/onore$_k$*-o
        Sanzoo-NOM   Gokuu-DAT   goblin-NOM   SELF/SELF-ACC
        oikaker-teir-u   to]   tuge-ta.
        chase-PROG-PRES   C   tell-PST

        'Sanzo$_k$ told Goku [that goblins chased SELF$_k$].'

    c. Sanzoo$_k$-ga   Gokuu-ni   [mamono-ga *zibun$_k$*-o   oikaker-teir-u   to]
        Sanzoo-NOM   Gokuu-DAT   goblin-NOM   SELF-ACC   chase-PROG-PRES   C
        tuge-ta.
        tell-PST

        'Sanzo$_k$ told Goku [that goblins chased SELF$_k$].'

This is very surprising, given Faltz's (1977) and Pica's (1987) generalization that morphologically simple reflexives with subject-orientation are tolerable with the long-distance binding. Under our theory of feature-binding, the locally-bound nature of *mizukara* and *onore* is naturally explained; for, φ-defective reflexives must be feature-bound through Agree, the operation which is principally restricted within a single tensed clause, as we argued in the main text. The conclusion is that *mizukara* and *onore*, unlike *zibun-zisin* and *zibun* (both of which can be used as a referential pronominal), can only be used as a genuine φ-defective anaphor (Ishino and Ura 2011).

Appendix II: **Split Binding and *Zibun-tati***

Abe (1992) claims that the split antecedence illustrated in (9) above in the text is not a genuine one, but it is obtained as a special case of the group reading for *zibun-tati* (cf., also, Kawasaki 1989), which depends not upon syntactic binding but upon coreference in discourse. This claim can be examined by detecting whether or not *zibun-tati* tolerates the sloppy identity reading when being embedded in an elliptical domain as a surface anaphor.

(II.1) a. John$_k$-ga   [Bill$_j$-ni   Ø   yorimo sakini],   Tom$_g$-ni   *zibun-tati$_{k+g(+else)}$*-nituite
        John-NOM   Bill-DAT   than earlier   Tom-DAT   SELF-PL   about
        katar-ta.
        tell-PST

        Ø = 'told about SELF$_{k+j(+else\text{-}g)/k+g(+else)/k+g+j(+else)}$.'   (strict/sloppy)

b.   Mary$_k$-ga [Jane$_j$-kara Ø yorimo sakini],   Sue$_g$-kara *zibun-tati$_{k+g(+else)}$*-nituite
   Mary-NOM Jane-from   than earlier   Sue-from SELF-PL   about
   kii-ta.
   hear-PST

   Ø = 'heard about SELF$_{k+j(+else\textbf{-}g)/k+g(+else)/k+g+j(+else)}$.'   (strict/sloppy)

c.   Chomsky$_k$-ga [Lasnik$_j$-ni Ø yorimo sakini], Halle$_g$-ni *zibun-tati$_{k+g(+else)}$*-o
   Chomsky-NOM Lasnik-DAT   than earlier   Halle-DAT SELF-PL-ACC
   hihans-ase-ta.
   criticize-CAUS-PST

   Ø = 'criticize SELF$_{k+j(+else\textbf{-}g)/k+g(+else)/k+g+j(+else)}$.'   (strict/sloppy)

As the interpretation of the above examples shows, *zibun-tati* yields the sloppy reading in addition to the strict reading. Under our theory, this implies that *zibun-tati* can be used as a logophor, which utilizes coreference in discourse. This, in turn, lends empirical support to Abe's (1992) claim.

Appendix III: **Split Binding in English**

    It has widely been admitted that the English third-person plural reflexive *themselves* is a locally-bound reflexive and cannot be split bound.

(III.1)   a. *John$_k$ told Bill$_h$ about *themselves$_{k+h}$*.   (Wasow 1979)

        b. *John$_k$ showed Mary$_h$ *themselves$_{k+h}$* in the mirror.   (Fiengo and May 1994)

However, it has sometimes been reported in the literature that the split binding for *themselves* is possible in a certain context.

(III.2)   a. [OK]Mary$_k$ showed Paul$_h$ a nice picture of *themselves$_{k+h}$*.   (Carroll 1986)

        b.[OK]John told Mary about interesting and important political ideas, while Bill$_k$ told
   Sue$_h$ only about *themselves$_{k+h}$*.   (Okada 1998)

        c. *[Mary and Sue told Jane that they all looked exactly alike, but Jane was the only
   one who claimed not to be able to see the resemblance.]*
   [OK]So Mary$_k$ showed Jane$_h$ *themselves$_{k+h}$* in the mirror, so that she could see their
   faces together and could compare them.   (Okada 1998)

It has also been reported that the English reflexives can be bound over the tensed-clause boundary in a certain context. Our theory demands that the reflexives in these kinds of example should be an instance of the contextually emphatic logophor in discourse. Importantly, this is, indeed, endorsed by the observation that they do not have the sloppy reading when they are interpreted under the VP-deletion context. Consider the following:

(III.3)　　a. [OK]*Mary* thought that everyone was fond of pictures of *herself.*
　　　　　　　(Cantall 1974, Lebeaux 1984, Pollard and Sag 1992, etc.)

　　　　　b. [OK] *John* eventually realized that the girl was taller than *himself.*　(Zribi-Hertz 2007)

　　　　　c. [OK] *Jack* came to know that this bitch was in love with *himself.*　　　　　(Gast 2002)

(III.4)　　a.　*Mary* thought that everyone was fond of pictures of *herself*, and Jane did Ø, too.

　　　　　　　herself in Ø = *Mary*, [?]*herself* in Ø = *Jane*　　(strict OK, sloppy ?)
　　　　　　　<Lebeaux 1984: possibility of the existence of PRO in the *picture*-noun>

　　　　　b.　*John* realized that the girl was taller than *himself*, and Bill did Ø, too.

　　　　　　　himself in Ø = *John*, *[?]*herself* in Ø = *Bill*　　(strict OK, sloppy NG)

　　　　　c.　*Jack* came to know that this bitch was in love with *himself*, and Bill did, Ø too.

　　　　　　　himself in Ø = *John*, **herself* in Ø = *Bill*　　(strict OK, sloppy NG)

Logophorically/emphatically used reflexives cannot be a bound variable (cf. Sevcenco 2006). The following examples also endorse this:

(III.5)　　a.　Mary$_k$ showed Paul$_h$ a nice picture of *themselves$_{k+h}$*, and Jane$_j$ did Ø, too.

　　　　　　　Ø = showed Paul a nice picture of Mary and Paul, Ø ≠ showed Paul a nice picture of Jane and Paul　　(strict OK, sloppy NG)

　　　　　b.　*[Under the same context as in (III.2b)]*
　　　　　　　Bill$_k$ told Sue$_{k+h}$ only about *themselves$_{k+h}$*, and Tom$_j$ did, Ø too.

　　　　　　　Ø = told Sue about Bill and Sue, Ø ≠ told Sue about Tom and Sue
　　　　　　　(strict OK, sloppy NG)

　　　　　c.　*[Under the same context as in (III.2c)]*
　　　　　　　Mary$_k$ showed Jane$_h$ *themselves$_{k+h}$* in the mirror, but Sue$_j$ didn't want to Ø, too.

　　　　　　　Ø = show Jane themselves$_{k+h}$, Ø ≠ show Jane themselves$_{k+j}$
　　　　　　　(strict OK, sloppy NG)

We therefore conclude that the split binding of a reflexive under special contexts in English (such as exemplified in (III.2)) is materialized only through the coreference in discourse.

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ON THE EVENT ARGUMENT AND ANTI-QUANTIFIER *ZUTSU* IN JAPANESE*

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1. Introduction

This paper examines the syntax of the distributive affix *zutsu* in Japanese, which attaches to a numeral quantifier (NQ), as exemplified in (1a–c):[1]

(1) a. **Taroo-to-Hanako**-ga   [ni-satsu-**zutsu**-no   hon] -o   katta (-koto)
         Taroo-and-Hanako-nom   two-cl -dist   -gen book-acc bought (-fact)

         'Taroo and Hanako bought two books each.'

     b. **Taroo-to-Hanako**-ga   [hon ni-satsu-**zutsu**] -o   katta (-koto)
         Taroo-and-Hanako-nom   book two-cl -dist   -acc bought (-fact)

     c. **Taroo-to-Hanako**-ga   hon-o   ni-satsu-**zutsu** katta (-koto)
         Taroo-and-Hanako-nom book-acc two-cl -dist   bought (-fact)

It is well known that three positions are available for NQs; accordingly, the same three options are also available for NQs with *zutsu* (see Gil (1990) for relevant discussion). One of the readings available in (1a–c) is that Taroo bought two books and Hanako also bought two books.

When it comes to the position of *zutsu*, the distributive affix in question is not

[1] Abbreviations used in this paper are as follows:
acc = accusative, cl = classifier, dat = dative, dist = distributive affix, e = event argument,
e.c. = empty category [= elided argument], gen = genitive, nom = nominative, pl = plural.

In addition, binominal *each* (Safir and Stowell 1988) is used in English translation throughout the paper without any theoretical significance. See Section 7.

necessarily attached to an NQ modifying the object, but can also be attached to an NQ modifying other elements such as the subject, as shown in (2a–c):

(2)   a. [superscript ??][futa-ri -**zutsu**-no   gakusei] -ga   **furansugo-to-doitsugo**-o
      two-cl-dist -gen student -nom French-and-German-acc
      benkyooshiteiru (-koto)
      be studying (-fact)

      'Two students each are studying French and German.'

    b. [superscript ??][gakusei <u>futa-ri -**zutsu**</u>] -ga   **furansugo-to-doitsugo**-o benkyooshiteiru (-koto)
      student two-cl-dist   -nom French-and-German-acc be studying   (-fact)

      'Two students each are studying French and German.'

    c. [superscript ??]gakusei-ga   <u>futa-ri -**zutsu**</u> **furansugo-to-doitsugo**-o benkyooshiteiru (-koto)
      student-nom two-cl-dist   French-and-German-acc be studying   (-fact)

      'Two students each are studying French and German.'

Although slightly degraded, these examples can describe the situation in which two students are studying French and another two students are studying German.

For terminology, following Safir and Stowell (1988), I call the element over which distribution takes place "Range NP (R-NP hereafter)." In (1a–c), *Taroo-to-Hanako* acts as an R-NP under the reading that Taroo bought two books and Hanako also bought two books. In (2a–c), the object NP appears to serve as an R-NP.

The paper is organized as follows. In Section 2, I introduce Oh's (2006) QR-based approach to Korean distributive affix *ssik*, the Korean counterpart of *zutsu*, which sets a stage for the present study.　Of interest is his claim that the proper relationship between *ssik* and its R-NP is established in LF via Quantifier Raising (May 1977, 1985: QR hereafter) of the R-NP. In Section 3, I argue against Oh's proposal, and show that the relationship in point must be obtained in overt syntax. This in turn calls for an alternative to Oh's LF-based analysis. Section 4 is then devoted to my proposal, based on the movement of the distributive operator, adopting the essence of Heim, Lasnik and May's (1991) analysis of the reciprocal *each other*. In Section 5, based on the current proposal on the distributive affix in point, I clarify the context in which an object NP containing an NQ with *zutsu* can be elided. In Section 6, I examine cases where ellipsis of a subject NP containing an NQ with *zutsu* is intended. This section shows that not only LF-copying but also PF-deletion should be available to "elide" subjects in Japanese, and suggests a hybrid hypothesis for so-called "argument ellipsis" (AE hereafter) in Japanese. Finally, Section 7 concludes the paper.

2.　Oh's (2006) QR-based Approach to Anti-Quantifiers

This section briefly introduces Oh's (2006) proposal on the Korean distributive affix *ssik*

in order to set the stage for the discussion to follow. The affix in question is attached to an NQ, parallel to its Japanese counterpart in (2a–c), as illustrated in (3):

(3)　　namca twu-myeng-i　　sangca sey-kay-**ssik**-ul　wunpanhayssta.
　　　　man　 two-cl　 -nom box　 three-cl-dist -acc　carried

　　　　'Two men carried three boxes each.'

<div align="right">(Oh 2006: 26)</div>

One of the readings available in (3) is that the two men each carried three boxes. He assumes that under this reading, (3) has the structure in (4) in overt syntax:[2]

(4)　　[$_{TP}$ D [$_{TP}$ namca wu-myeng-i$_1$ [$_{T'}$ [$_{VP}$ sangca sey-kay-ssik-ul$_2$ [$_{VP}$ e [$_{VP}$ t$_1$ t$_2$ wunpanhayssta]]]]]]

In (4), D represents the distributive operator, and e is the event argument. A crucial ingredient for Oh's analysis is the QR of an R-NP in LF to a position c-commanding this distributive operator. In LF, the subject NP, the intended R-NP, is raised above D, as shown in (5):

(5)　　[$_{TP}$ namca twu-myeng-i$_1$ [$_{TP}$ D [$_{TP}$ t$_1$ [$_{T'}$ [$_{VP}$ sangca sey-kay-ssik-ul$_2$ [$_{VP}$ e [$_{VP}$ t$_1$
　　　　　　　　　　　↑_____|
　　　　t$_2$ wunpanhayssta]]]]]]]

For Oh, the structure in (5) makes the intended distribution of the subject NP, described above, available.[3]

　　　Of particular interest is Oh's statement that (6) is ambiguous between the two readings shown in (7) (see also Choe (1987) for related discussion):

(6)　　namca twu-myeng-ssik-i　　sangca sey-kay-lul wunpanhayssta.
　　　　man　 two-cl-dist　 -nom box　 three-cl-acc carried

<div align="right">(Oh 2006: 25)</div>

(7)　　a. Men in pairs carried each of a set of three boxes.
　　　　b. Two men together carried three boxes (where happened more than one instance of this, simultaneously or one after another).

<div align="right">(Oh 2006: 33)</div>

According to Oh, these two readings are realized by the following LF representations respectively:

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[2] The structures given in this section are simplified from Oh's (2006) proposed structures based on Heim and Kratzer's (1998) framework, but the structures provided in the text are sufficient to show that QR plays an important role in his proposal. Readers are referred to Oh (2006) for the precise representations of (3) in overt syntax and LF.

[3] See Oh (2006) for his semantic mechanism to interpret the distributive affix in question.

(8)　　a. [TP sangca sey-kay-lul₂ [TP D [TP namca twu-myeng-ssik-i₁ [T' [VP e [VP t₁ t₂

wunpanhayssta]]]]]]

b. [TP e₃ [TP D [TP namca twu-myeng-ssik-i₁ [T' [VP sangca sey-kay-lul₂ [VP t₃

[VP t₁ t₂ wunpanhayssta]]]]]]]]

(Oh 2006: 61)

In (8a), the object NP *sangca sey-kay-lul* 'three box-acc', the intended R-NP, is raised above D via QR, resulting in the reading in (7a). On the other hand, the event argument *e* is QR-ed to the position above D in (8b), and the reading in (7b) results.

To sum up, we have seen that QR plays a crucial role in Oh's analysis of the Korean distributive affix in question. His proposal indicates that QR is available even in Korean, which is claimed to exhibit scope rigidity (e.g., Ahn 1990, Ha 2008, and Sohn 1995, amongst others). To the extent that Oh's analysis is correct, we are forced to clarify the context in which QR is available in so-called scope-rigid languages. Provided that Oh's analysis extends to the Japanese distributive affix *zutsu*, we need to determine why QR is unavailable in sentences such as (9) in Japanese (Kuroda 1971, Hoji 1985, amongst others):

(9)　　dareka-ga　　daremo-ni　　atta (-koto)
　　　　someone-nom　everyone-dat　met (-fact)

　　　　'Someone met everyone.'

With these questions in mind, I turn to examine how the type of predicate affects the grammaticality of sentences with an NQ with *ssik* and *zutsu* in the next section. Yet, readers might immediately recognize my answer to the questions raised here.

3.　C-Command Requirement on Anti-Quantifiers

The paradigm with which this section deals is given in (10a–d) (Duk-Ho An, p.c.):

(10)　　a. ??twu-myeng -ssik -uy　haksayng -i　　sey-kwen-uy chayk-ul　sassta.
　　　　　two-cl　　-dist -gen　student　-nom　three-cl-gen　book-acc　bought

　　　　　'Two students each bought (the) three books.'

b. sey-kwen-uy chayk-ul　twu-myeng-ssik -uy　haksayng -i　　sassta.
　　three-cl -gen　book -acc　two-cl　　-dist -gen　student　-nom　bought

　　'(the) three books, two students each bought.'

c. #twu-myeng -ssik -uy haksayng -i sey-kay-uy oykwuke -lul anta.
   two-cl   -dist -gen student -nom three-cl-gen foreign language -acc know

   'Two students each know (the) three foreign languages.'

d. sey-kay -uy oykwuke -lul twu-myeng-ssik -uy haksayng -i anta.
   three-cl -gen foreign language -acc two-cl   -dist -gen student -nom know

   '(the) three foreign languages, two students each know.'

We obtain the same type of paradigm with sentences containing an NQ with *zutsu* in Japanese, as shown in (11a–d):

(11) a. [??]gakusei futa-ri -zutsu-ga furansugo-to-doitsugo-o benkyooshiteiru(-koto)
         student two-cl -dist -nom French-and-German-acc be studying   (-fact)

         'Two students each are studying French and German.'

b. [furansugo-to-doitsugo-o_1 [gakusei futa-ri -zutsu-ga [t_1 benkyooshiteiru]]]
   French-and-German-acc   student two-cl -dist -nom   be studying
   (-koto)
   (-fact)

   'French and German, two students each are studying.'

c. #gakusei futa-ri -zutsu-ga furansugo-to-doitsugo-o yoku shitteiru(-koto)
   student two-cl -dist -nom French-and-German-acc well know (-fact)

   'Two students each know French and German well.'

d. [?][furansugo-to-doitsugo-o_1 [gakusei futa-ri -zutsu-ga [t_1 yoku shitteiru]]](-koto)
   French-and-German-acc   student two-cl -dist -nom   well know   (-fact)

   'French and German, two students each know well.'

The difference between (10a, b) and (11a, b) on the one hand, and (10c, d) and (11c, d) on the other, is that the former contain the stage-level predicates, *sassta* 'bought' and *benkyoo-shiteiru* 'be studying,' and the latter involve the individual-level predicate *anta* 'know' and *shitteiru* 'know.' In the discussion which follows, I focus on the Japanese paradigm in (11), and assume that my argument extends to the Korean paradigm in (10).

First, notice that in parallel to (2), (11a) is slightly degraded. This slight deviance, if it is genuine, may be difficult, if not impossible, to account for under the QR-based approach since nothing seems to go wrong with the QR of the object NP in LF in this example. In addition, this deviance is not observed in (11b) in which the object NP is scrambled to the sentence-initial position in overt syntax. This asymmetry between (11a) and (11b), then, already suggests that what is relevant in licensing *zutsu* is the proper relationship between the distributive affix and the R-NP in overt syntax. Let us turn to the contrast between (11a) and

(11c), which shows that the distinction between stage-level and individual-level predicates must be taken into consideration. This dichotomy confirms that it is in overt syntax that the distributive affix *zutsu* is licensed (contra Oh 2006). Notice that if *zutsu* were licensed in LF, the object NP would be able to move to the sentence-initial position not only in (11a) but also in (11c). Accordingly, under the QR-based approach, (11a) and (11c) are expected to be equally grammatical, contrary to fact. Furthermore, the contrast between (11c) and (11d) provides additional support for the relevance of a relationship between the affix in question and the R-NP in overt syntax. The obvious difference between these two examples is the position of the intended R-NP in overt syntax. In (11d), the object NP is overtly raised to the sentence-initial position via scrambling in this example. In short, the paradigm in (11) shows that the intended R-NP must be located higher than an NP containing an NQ with *zutsu* in overt syntax. The question remains as to how to account for the contrast between (11a) and (11c); in particular, which element functions as an R-NP in (11a)? This contrast ought to be tied to the distinction between stage-level and individual-level predicates.

The contrast between (11a) and (11c) reminds us of Oh's (2006) proposal on the Korean distributive affix in Section 2, based on the existence of an event argument in syntax (see also Basilico 2003 for the existence of an event argument in syntax). If an event argument is available only with stage-level predicates (Kratzer 1995), the element in point seems to be the only possible candidate for the R-NP in (11a) since the object NP cannot act as such. If the event argument is indeed an R-NP in (11a), we are also able to account for why (11c) remains ungrammatical since individual-level predicates lack such an argument.

Before closing this section, I need to add that given the conclusion that the distributive affix should be structurally lower than the R-NP in overt syntax, we do not need to answer the question of when QR is available in scope-rigid languages since no QR is necessitated for the licensing of the distributive affixes under question. I take this as a welcome consequence. In the next section, I proceed to an alternative analysis which necessitates a proper relationship between the R-NP and the distributive affix in question in overt syntax as well as the existence of the event argument in sentences with a stage-level predicate.

4.   Proposal: Distributor-Based Approach to Anti-Quantifiers

As noted in the end of the previous section, one important ingredient for the licensing of the affix in question in subject position is the presence of an event argument in syntax which is available only when the predicate is stage-level (Kratzer 1995). I assume that the event argument occupies SPEC of Event Phrase (Harley 1995, Travis 1994, among others: EvP, hereafter), as illustrated in (12):

(12)   [$_{EvP}$ Event Argument   [$_{Ev'}$ [$_{vP}$ …] Ev]]

As for the structure of the distributive affix, I assume the structure in (13):

(13)   [$_{DistP}$ Distributive Op   [$_{Dist'}$ [$_{NQ}$ Num+Cl] Dist]]

The distributive affix heads Distributive Phrase (DistP, hereafter), and its SPEC is occupied by the distributive operator (D-Op hereafter), which I assume corresponds to covert *each*. In this structure, the sole function of the distributive affix is to provide a position for the D-Op.
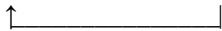
When it comes to the Op-movement in question, adopting Heim, Lasnik and May's (1991) proposal on English reciprocal, I assume that the Op in question is raised and adjoined to the R-NP. According to Heim, Lasnik and May (1991), *each* of the reciprocal *each other* is raised and adjoined to the antecedent. For instance, (14a) has the LF representation given in (14b) via the movement of *each*:[4]

(14)   a. Taroo and Hanako praised each other.
         b. [$_{TP}$ [[Taroo and Hanako] each$_1$]$_1$ [$_{VP}$ praised [t$_1$ other]]]

Likewise, in (15) for example, the D-Op is raised and adjoined to the intended R-NP *Taroo-to-Hanako* 'Taroo and Hanako' under the reading that Taroo bought two books and Hanako also bought another two books.

(15)   Taroo-to-Hanako-ga   hon ni-satsu-zutsu-o   katta (-koto)
         Taroo-and-Hanako-nom book two-cl -dist -acc bought (-fact)

         'Taroo and Hanako bought two books each.'

The movement in point is illustrated in (16):

(16)   [$_{TP}$ [$_{EvP}$ *e* [$_{vP}$ [[Taroo-to-Hanako] D-Op$_1$]-ga [$_{VP}$ [$_{DistP}$ t$_1$ [$_{NQ}$ hon ni-satsu]-zutsu]-o

         katta]]]] (-koto)

Now, the unavailability of the object NP acting as the R-NP in (11c), repeated here as (17), naturally follows:

(17)   #gakusei futa-ri -zutsu-ga   furansugo-to-doitsugo-o yoku shitteiru(-koto)
         student two-cl -dist -nom French-and-German-acc well   know   (-fact)

         'Two students each know French and German well.'

Of importance here, is the well-known restriction on movement which states that movement cannot be downward.

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[4] I do not illustrate the movement related to [*t* other] since it is not crucial for the present purpose. The reader is referred to Heim, Lasnik and May (1991).

(18)   [$_{TP}$ [$_{vP}$ [$_{DistP}$ t$_1$ [$_{NQ}$ gakusei futa-ri]-zutsu]-ga [$_{VP}$ [[furansugo-to-doitsugo] D-Op$_1$]-o

yoku shitteiru]]](-koto)

In (18), since the predicate is individual-level, no event argument is present, and the only potential R-NP is the object NP. However, if the D-Op targets this object NP, the movement in point becomes downward. As a result, the structure in (18) is not tenable; consequently, (17) is not acceptable.

Remarkably, if the object NP is scrambled to the sentence-initial position, (17) becomes acceptable, as shown in (11d), repeated here as (19):

(19) $^?$[$_{TP}$ [$_{vP}$ furansugo-to-doitsugo-o$_1$ [$_{vP}$ gakusei futa-ri -zutsu-ga   [$_{VP}$ t$_1$ yoku
            French-and-German-acc   student two-cl -dist -nom   well
       shitteiru]]]] (-koto)
       know   (-fact)

'French and German, two students each know well.'

Notice that the movement in question, now, becomes upward, as shown in (20):

(20)   [$_{TP}$ [$_{vP}$ [[furansugo-to-doitsugo] D-Op$_2$]-o$_1$ [$_{vP}$ [$_{DistP}$ t$_2$ [$_{NQ}$ gakusei futa-ri]-zutsu]-ga

[$_{VP}$ t$_1$ yoku shitteiru]]]] (-koto)

In (11b) also, repeated here as (21a), the scrambling of the object NP is followed by the upward movement of the D-Op, as illustrated in (21b):

(21)   a. [$_{TP}$ [$_{EvP}$ e [$_{vP}$ furansugo-to-doitsugo-o$_1$ [$_{vP}$ gakusei futa-ri -zutsu-ga   [$_{VP}$ t$_1$
                    French-and-German-acc   student two-cl -dist -nom
       benkyooshiteiru]]]]] (-koto)
       be studying   (-fact)

'Two students each are studying French and German.'

       b. [$_{TP}$ [$_{EvP}$ e [$_{vP}$ [[furansugo-to-doitsugo] D-Op$_2$]-o$_1$ [$_{vP}$ [$_{DistP}$ t$_2$ [$_{NQ}$ gakusei

       futa-ri]-zutsu]-ga [$_{VP}$ t$_1$ benkyooshiteiru]]]]] (-koto)

The present proposal therefore correctly predicts without any additional, speculative assumptions, that there is no grammatical contrast between (19) and (21a).

Finally, we have to return to (11a), repeated here as (22):

(22) $^{??}$[$_{TP}$ [$_{EvP}$ *e* [$_{vP}$ gakusei futa-ri -zutsu-ga   [$_{VP}$ furansugo-to-doitsugo-o
      student two-cl -dist -nom   French-and-German-acc

   benkyooshiteiru]]]](-koto)
   be studying   (-fact)

   'Two students each are studying French and German.'

The current approach based on the D-Op forces the conclusion that the object NP is not an R-NP in this example. Yet, the example in question is not as deviant as (17). The contrast between (17) and (22) therefore indicates that in the latter example, *zutsu* successfully finds an R-NP, which c-commands this distributive affix and that the slight marginality of this example comes from reasons independent of the licensing of the distributive affix under question. In (22), the only element which c-commands the distributive affix is the event argument. Therefore, we are forced to conclude that the R-NP is this event argument in this example. Under the assumption that the event argument can be plural if it contains sub-events (Krifka 1992, Lasersohn 1995, among others), I propose that the movement of the D-Op is as in (23):

(23)   [$_{TP}$ [$_{EvP}$ [[*e*] D-Op$_1$] [$_{vP}$ [$_{DistP}$ t$_1$ [$_{NQ}$ gakusei futa-ri]-zutsu]-ga

   [$_{VP}$ furansugo-to-doitsugo-o   benkyooshiteiru]]]] (-koto)

   Recall at this point that Oh (2006) proposes that (6), repeated here as (24), allows the two distributive readings in (7), repeated here as (25a, b):

(24)   namca twu-myeng-ssik -i   sangca sey-kay-lul wunpanhayssta.
        man   two-cl   -dist -nom box   three-cl-acc carried

                                                            (Oh 2006: 25)

(25)   a. Men in pairs carried each of a set of three boxes.
        b. Two men together carried three boxes (where happened more than one instance of
           this, simultaneously or one after another).

                                                            (Oh 2006: 33)

Of importance for the present purpose is Oh's claim that these two readings require the following two distinct LF representations:

(26)   a. [$_{TP}$ sangca sey-kay-lul$_2$ [$_{TP}$ D [$_{TP}$ namca twu-myeng-ssik-i$_1$ [$_{T'}$ [$_{vP}$ *e* [$_{VP}$ t$_1$
           t$_2$ wunpanhayssta]]]]]]

        b. [$_{TP}$ *e$_3$* [$_{TP}$ D [$_{TP}$ namca twu-myeng-ssik-i$_1$ [$_{T'}$ [$_{vP}$ sangca sey-kay-lul$_2$ [$_{vP}$ t$_3$
           [$_{VP}$ t$_1$ t$_2$ wunpanhayssta]]]]]]]

Oh specifically argues that the reading in (26a) does not involve distribution over the event argument; rather, the QR-ed object NP is acting as the R-NP. However, I have concluded that the reading in question results from the D-Op taking the event argument as the R-NP.

Accordingly, there is an obvious tension between Oh (2006) and the current proposal.

This tension reminds us of Balusu's (2006) proposal on duplicated numerals in Telugu. In Dravidian languages such as Telugu, when numerals are duplicated as in (27a, b), a distributive reading is forced.

(27)   a. ii   pilla-lu renDu renDu kootu-lu-ni   cuus-ee-ru.
          these kid-pl   two   two   monkey-pl-acc see-past-3p/pl

       '*Lit*. These kids saw two two monkeys.'

(Balusu 2006: 39)

       b. iddaru iddaru pilla-lu kootu-lu-ni   cuus-ee-ru.
          two   two   kid-pl   monkey-pl-acc see-past-3p/pl

       '*Lit*. Two two kids saw (the) monkeys.'

(Balusu 2006: 43)

In (27a), the distribution appears to be over the subject NP, and in (27b), the object NP appears to be distributed. The latter example shows that as in the case of Japanese distributive affix, the duplicated numeral in question can accompany the subject NP. Examining examples such as (27a, b), Balusu claims that duplicated numerals always take the event argument as an R-NP in semantics.[5] Informally put, (27b) means that there is an event consisting of sub-events involving two kids seeing each monkey. The function of the duplicated numeral in this example is to guarantee that each sub-event involves two kids. This paper adopts his proposal in essence with one modification: The distributive operation in point is a syntactic operation. If this modification is correct, it is not a problem for the present approach which requires the distribution over the event argument in (22) to realize the apparent distributive reading over the object NP.

The current proposal may also provide an answer to the question of why (22) is slightly degraded. Notice that the intended distribution is "indirect": The distributive affix in question takes the event argument as its R-NP, and the distribution of the object NP is due to the base-generated covert *each*, dubbed as D (Heim, Lasnik and May 1991), as shown in (28):

(28)   [TP [EvP [[*e*] D-Op1] [vP [DistP t1 [gakusei futa-ri]-zutsu]-ga
                ↑_____| student two-cl -dist -nom
       [VP [[furansugo-to-doitsugo] D]-o   benkyooshiteiru]]]](-koto)
            French-and-German   -acc be studying   (-fact)

The existence of the D on the object NP guarantees that the event in question consists of two sub-events, namely, studying French and studying German. This indirect association of the D-Op and the object NP via the event argument may yield some processing difficulty in (22).

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[5] See Balusu (2006, 2010) for the details of his semantic analysis.

To summarize this section, I have proposed that the c-command requirement posed on the distributive affix *zutsu*, described in Section 3, arises as a consequence of the movement of the D-Op in overt syntax. Given the well-motivated assumption that movement must be upward, the R-NP then must c-command the D-Op in question in overt syntax. In addition, armed with the assumption that the event argument is present only with stage-level predicates, I have accounted for the fact that the distributive affix in question can be part of the subject NP only when the predicate is stage-level.

5. Argument Ellipsis of an NQ with *Zutsu* in Object Position

Under the current proposal, this section discusses the availability of argument ellipsis (AE) of an NP with *zutsu* in object position. The purpose of this section is to show that the current proposal provides a means to solve a puzzle concerning the AE of an NP containing an NQ with *zutsu*.

In his pioneering work on AE, Oku (1998) observes that subjects can be elided in Japanese, as in (29b), following (29a):

(29)   a. Taroo-ga   [[jibun-no ronbun] -ga   saiyoo-sareru] -to   omotteiru.
             Taroo-nom   self-gen   paper -nom will be accepted -that think

             'Taroo thinks that his paper will be accepted.'

         b. Hanako-mo [*e.c.* saiyoo-sareru] -to   omotteiru.
             Hanako-also   will be accepted -that think

             'Hanako also thinks that (his paper/her paper) will be accepted.'

Importantly, (29b) is ambiguous between strict and sloppy readings. Under the strict reading, this sentence means that Hanako also thinks that Taroo's paper will be accepted. On the other hand, under the sloppy reading, it means that Hanako also thinks that her own paper will be accepted.

Notice that (29b) cannot be analyzed as an instance of VP-deletion since the (embedded) subject NP is elided. Furthermore, this covert subject cannot be *pro* since the sloppy reading is available for this elided subject. Oku's proposal is that in LF, the embedded subject NP of (29a) is copied to *e.c.* in (29b).[6]

Given Oku's LF-copying approach to AE, let us examine (30b, c) following (30a):

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[6] See Saito (2007), Shinohara (2006), and Takahashi (2008) for supporting evidence for this LF-copying analysis of AE.

(30)　　a.　Taroo-to-Hanako-ga　　**hon　ni-satsu -zutsu -o**　　katta.
　　　　　　Taroo-and-Hanako-nom　book two-cl　-dist　-acc　bought

　　　　　　'Taroo and Hanako bought two books each.'

　　　　b.　Jiroo-to-Yuuko-mo　　*e .c.*　katta.
　　　　　　Jiroo-and-Yuuko-also　　　　bought

　　　　　　'Jiroo and Yuuko also bought (two books (each)).'

　　　　c.[(?)]Jiroo-mo　*e.c.*　katta.
　　　　　　Jiroo-also　　　　bought

　　　　　　'Jiroo also bought (two books)'

In (30b-c), the object NP is elided, as indicated as *e.c.* The intended reading of (30a) is that Taroo and Hanako each bought two books. In this context, (30b) can mean Jiroo and Yuuko each also bought two books. Of significance is the fact that not only (30b) but also (30c) can follow (30a) although it may be slightly degraded. (30c) can describe the situation in which Jiroo also bought two books.

　　If the bold-faced underlined NP with the D-Op were copied to *e.c.* in (30c), the sentence should have the LF representation with the D-Op movement in point, as illustrated in (31):[7]

(31)　　[$_{TP}$ [$_{EvP}$ *e* [$_{vP}$ [[Jiroo] D-Op$_1$]-mo　[$_{VP}$ **[$_{DistP}$ t$_1$ [$_{NQ}$ hon ni-satsu]-zutsu]-o** katta]]]]
　　　　　　　　　　　　　　　↑＿＿＿ ✖ ＿＿＿＿┘

By definition, the D-Op must be adjoined to a plural R-NP. However, *Jiroo* is singular, and thus, it should not be able to function as an R-NP. The fact that (30c) can follow (30a), therefore, indicates that (31) should not be the correct LF representation of (30c). Since a cause of the problem lies in the D-Op movement, what is copied to *e.c.* in (30c) must be the DistP without the D-Op. This is exactly what we obtain under LF-copying.

　　Under the Single Output Syntax model (Bablijik 1995, 2002), by the time the copying operation is to take place in LF, the D-Op is already raised and adjoined to the R-NP. This in turn indicates that what is copied to *e.c.* in (30b) from (30a) is the DistP without the D-Op in question. Given the assumption that the D-Op movement is an instance of A-movement, in parallel to *each*-movement (Heim, Lasnik and May 1991), and that A-movement does not leave any trace (Lasnik 1999, Saito and Hoshi 2000), the LF representation of (30c) after the intended copying operation, must be as in (32):

(32)　　[$_{TP}$ [$_{EvP}$ *e* [$_{vP}$ Jiroo-mo　[$_{VP}$ **[$_{DistP}$ [$_{NQ}$ hon　ni-satsu]-zutsu] -o**　　katta]]]]
　　　　　　　　　　Jiroo-also　　　　　　book two-cl　-dist　-acc　bought

---

[7] I leave aside questions concerning the status of particles in AE in this paper. See Saito (2007) for relevant discussion.

Under the current assumption that *zutsu* itself does not have any significant semantic import, (32) is then basically equated with (33):

(33)   [TP [EvP *e* [*v*P Jiroo-mo [VP **[NQ hon   ni-satsu]-o**   katta]]]]
                    Jiroo-also   book two-cl -acc bought

     'Jiroo also bought two books.'

As a result, even under the copying-based approach to AE, it is naturally expected that (30c) can follow (30a), and it means that Jiroo also bought two books.

     Accordingly, (30b) should have either of the LF representations given in (34a, b):[8]

(34)   a. [TP [EvP *e* [*v*P Jiroo-to-Yuuko-mo   [VP **[DistP [NQ hon   ni-satsu]-zutsu] -o**
                         Jiroo-and-Yuuko-also   book two-cl -dist   -acc
          katta]]]] (-koto)
          bought (-fact)

     b. [TP [EvP *e* [*v*P [[Jiroo-to-Yuuko] **D**] -mo [VP **[DistP [NQ hon   ni-satsu]-zutsu] -o**
                         Jiroo-and-Yuuko   -also   book two-cl -dist   -acc
          katta]]]] (-koto)
          bought (-fact)

(34a) should allow the reading that Jiroo and Yuuko also bought two books together whereas (34b) should yield the reading that Jiroo and Yuuko also bought two books each, due to the presence of D, the base-generated covert *each*. The current proposal therefore predicts that following (30a), (30b) can be interpreted either collectively or distributively. This prediction is borne out. The collective reading in question becomes more salient if appropriate context is given, such as the one in (35):

(35)   Jiroo-to-Yuuko-mo   okane-o   awasete   issyo-ni *e.c.* katta.
        Jiroo-and-Yuuko-also money-acc putting together together   bought

     'Jiroo and Yuuko also bought (two books) together, putting their money together.'

     The question to be raised now is whether the same copying operation is also responsible for AE in subject position. This is the issue to be dealt with in Section 6.

6.   Argument Ellipsis of an NQ with *Zutsu* in Subject Position

     The cases discussed in Section 5 are all accommodated under the LF-copying approach. In this section, however, examining the availability of sloppy reading in cases involving an NQ with *zutsu* in subject position, we will see that not only LF-copying but also PF-deletion is necessary in order to fully account for AE in Japanese. This leads to the suggestion that in principle, AE can be created by either PF-deletion or LF-copying: the "hybrid" hypothesis of

[8] In Section 6, I will show that AE can also be obtained via PF-deletion in (30b).

AE.

Let us start with (36). Suppose that some student representatives and teachers are about to have a meeting to decide who will bring what to the coming potluck party:[9]

(36) a. [??]Tanaka-sensei-wa   [[**(jibun-no) gakusei futa-ri-zutsu-ga**
     Tanaka-teacher-top   self-gen   student two-cl -dist -nom
     suupu-to-sarada-o   tsukuru]-to] omotteiru.
     soup-and-salad-acc   make   -that think

     'Prof. Tanaka thinks that two students each will make soup and salad.'

     b. [???]Yamada-sensei-wa   [[*e.c.* sushi-to-dezaato-o   tsukuru]-to] omotteiru.
        Yamada-teacher-top   sushi-and-dessert-acc make] -that think

     'Prof. Yamada thinks that (two students (each)) will make sushi and dessert.'

     c. [?/??]Yamada-sensei-wa   [[*e.c.* dezaato-o   tsukuru]-to]   omotteiru.
        Yamada-teacher-top   dessert-acc make] -that   think

     'Prof. Yamada thinks that (two students) will make dessert.'

(36b) as well as (36c) can follow (36a) although the former two sentences are degraded, along with the latter.

Under the LF-copying approach to AE adopted in Section 5, (37) would be the LF representation of (36b):

(37)   Yamada-sensei-wa   [$_{CP}$ [$_{EvP}$ *e* [$_{vP}$ **[$_{DistP}$ [$_{NQ}$ gakusei futa-ri]-zutsu] -ga**
     Yamada-teacher-top   student two-cl -dist   -nom
     sushi-to-dezaato-o   tsukuru]]-to] omotteiru
     sushi-and-dessert-acc make   -that think

Of importance here is the claim that what is copied in (37) is the DistP without the D-Op. Thus, (37) should be equated with (38):

(38)   Yamada-sensei-wa   [$_{CP}$ [$_{EvP}$ *e* [$_{vP}$ **[$_{NQ}$ gakusei futa-ri]-ga**   sushi-to-dezaato-o
     Yamada-teacher-top   student two-cl -nom sushi-and-dessert-acc
     tsukuru]]-to] omotteiru
     make   -that think

In (38), and thus (37), since the subject QP is structurally higher than the plural object, the former necessarily takes scope over the latter given the assumption that Japanese exhibits

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[9] There is dialectal/idiolectal variation among native speakers of Japanese about their judgment of (36a–c), (42a–c), and (47a–c). I leave this issue for future research to examine why such variation exists.

scope rigidity (Kuroda 1971, Hoji 1985). This scope relation between the two QPs leads to one of the possible, though not salient, readings available in (36b); that is, Prof. Yamada thinks that two students (of his) will make sushi and dessert.

Importantly, (36b) also permits the reading that Prof. Yamada thinks that two students (of his) will make sushi, and another two students (of his) will make dessert. In order to obtain this reading, parallel to (36a), we need the D-Op in (36b). Under the current proposal, given the assumption that covert *each*, dubbed as D, can directly adjoin to a plural element, it is not unnatural that in (36b), the event argument is directly adjoined by D, and the DistP without the D-Op is copied to *e.c.*, as shown in (39):

(39)   Yamada-sensei-wa   [CP [EvP [[*e*] D] [*v*P **[NQ gakusei futa-ri]-ga**
       Yamada-teacher-top   student two-cl -nom
        [[sushi-to-dezaato] D]-o   tsukuru]]-to]   omotteiru
         sushi-and-dessert   -acc make   -that think

Notice that in the relevant respect, this LF representation is basically the same as the one in (40b), which is the LF representation of (11a), repeated here as (40a),

(40)   a. $^{??}$[TP [EvP *e* [*v*P gakusei futa-ri -zutsu-ga   [VP furansugo-to-doitsugo-o
                      student two-cl -dist -nom   French-and-German-acc
         benkyooshiteiru]]]] (-koto)
         be studying   (-fact)

        'Two students each are studying French and German.'

     b. [TP [EvP [[*e*] D-Op$_1$] [*v*P [DistP t$_1$ [NQ gakusei futa-ri]-zutsu]-ga
                        ↑_____✔_____|
         [VP [[furansugo-to-doitsugo] D]-o   benkyooshiteiru]]]] (-koto)

Then, it is not surprising that (39) realizes the type of reading available with (36a) and (40a): (36b) means that a group of two students would make sushi and another group of two students would make dessert. In addition, the slight marginality of (36b) might also be expected since the apparent distribution of the students over sushi and dessert is in fact "indirect" (see Section 4).

In contrast to (36b), (36c) following (36a) can describe the situation in which Prof. Yamada thinks that two students will make some dessert. Under the LF-copying, (41) is the LF-representation of (36c):

(41)   Yamada-sensei-wa   [CP [TP [EvP *e* [*v*P **[DistP [NQ gakusei futa-ri]-zutsu] -ga**
       Yamada-teacher-top   student two-cl -dist   -nom
       [VP dezaato-o   tsukuru]]]]-to]   omotteiru
            dessert-acc make   -that think

This representation correctly substantiates the reading in point.

To summarize the discussion so far, I have shown that in addition to the cases discussed in Section 5, AE of a subject NP containing an NQ with *zutsu* can also make use of LF-copying. Thus, the examples examined so far can be taken as supporting evidence for the LF-copying approach to AE in Japanese.

However, there are cases where PF-deletion is necessitated. First, recall from the discussion in Section 4 that when the object R-NP is scrambled and c-commands the subject NP with the NQ with *zutsu*, the sentence becomes fully acceptable. Accordingly, it is not surprising that no significant deviance results in (36a) if the scrambling of the object NP takes place, as shown in (42a). However, although (36c) and (42c) do not exhibit any grammatical contrast, it comes as a surprise that (36b) appears to improve, following (42a), as shown in (42b):

(42) a. Tanaka-sensei-wa [[suupu-to-sarada-o$_1$ [**(jibun -no) gakusei**
Tanaka-teacher-top   soup-and-salad-acc   self -gen student
futa-ri-zutsu -ga   t$_1$ tsukuru]]-to]   omotteiru.
two-cl -dist -nom   make   -that think

'Prof. Tanaka thinks that soup and salad, two students each will make.'

b. $^?$Yamada-sensei-wa [[sushi-to-dezaato-o   tsukuru]-to]   omotteiru.
Yamada-teacher-top sushi-and-dessert-acc make   -that think

'Prof. Yamada thinks that (two students (each)) will make sushi and dessert.'

c. $^{?/??}$Yamada-sensei-wa [[dezaato-o   tsukuru]-to]   omotteiru.
Yamada-teacher-top dessert-acc make   -that think

'Prof. Yamada thinks that (two students) will make dessert.'

Under the LF-copying approach to AE, the contrast between (36b) and (42b), if it is genuine, is very difficult, if not impossible to explain since the copying of the subject NP to *e.c.* in (42b) should yield the LF-representation in (38) above, given the assumption that no string vacuous scrambling is allowed (Hoji 1985) and the object NP stays in situ. Accordingly, no contrast between (36b) and (42b) is expected, contrary to fact.

In contrast, under the PF-deletion approach, the LF-representation of (42b) ought to be distinct from the one in (38). Given the reasonable assumption that PF-deletion requires identity in PF, (36b), which follows (36a), should have the LF representation in (38) above, while the LF representation of (42b), which is preceded by (42a), should be as in (43):

(43)   Yamada-sensei-wa [$_{CP}$ [$_{TP}$ [$_{EvP}$ *e* [$_{vP}$ sushi-to-dezaato-o [$_{vP}$ [$_{DistP}$ **D-Op**

[$_{NQ}$ gakusei futa-ri]-zutsu]-ga   tsukuru]]]]-to] omotteiru

Crucially, the object NP has been scrambled, which makes it an appropriate R-NP for the

D-Op in overt syntax. With the upward movement of the D-Op to the scrambled object NP, the sentence is fully acceptable, as predicted, parallel to (11b), repeated here as (44a), with the derivational steps in (44b):

(44) a. [TP [EvP *e* [*v*P furansugo-to-doitsugo-o$_1$ [*v*P gakusei futa-ri -zutsu-ga [VP t$_1$
French-and-German-acc student two-cl -dist -nom
benkyooshiteiru]]]]]] (-koto)
be studying (-fact)

'Two students each are studying French and German.'

b. [TP [EvP *e* [*v*P [[furansugo-to-doitsugo] D-Op$_2$]-o$_1$ [*v*P [DistP t$_2$ [NQ gakusei
futa-ri]-zutsu]-ga [VP t$_1$ benkyooshiteiru]]]]] (-koto)

Turning to (42c) in relation to (36c), however, I find no significant contrast between these two examples. The fact that the reading in question is permitted in (42c) follows from the LF representation in (41), repeated here as (45), under LF-copying:

(45) Yamada-sensei-wa [CP [TP [EvP *e* [*v*P **[DistP [NQ gakusei futa-ri]-zutsu] -ga**
Yamada-teacher-top student two-cl -dist -nom
[VP dezaato-o tsukuru]]]]-to] omotteiru
dessert-acc make -that think

Of importance is the fact that there is no potential R-NP c-commanding the D-Op in (46), which would be the LF-representation of (42c) under PF-deletion:

(46) Yamada-sensei-wa [CP [TP [EvP *e* [*v*P dezaato-o [*v*P **[DistP D-Op [NQ gakusei**
futa-ri] -zutsu]-ga tsukuru]]]]-to] omotteiru

The D-Op cannot be adjoined to the scrambled object NP since it is singular. In addition, there is an event consisting of one sub-event of making dessert in (42c), and thus, the event argument is not a potential R-NP in (43), either.

In short, it is not clear how the contrasts between (36a–c) and (42a–c) with respect to readings available in (36b, c) and (42b, c) can be accommodated without adopting both LF-copying and PF-deletion. I therefore take these data as supporting evidence for the hypothesis that not only LF-copying but also PF-deletion must be an option available for AE in Japanese: the hybrid hypothesis for AE in Japanese.

Second, I have shown in Section 3 that there is a contrast between stage-level and individual-level predicates with respect to the licensing of an NQ with *zutsu* contained in the subject NP. When the predicate is individual-level, the object NP ought to be scrambled to a position c-commanding the subject so that it can act as the R-NP. Bearing this point in mind, let's consider (47a–c):

(47)　a. $^?$Tanaka-sensei-wa　[[doitsugo-to-furansugo-o$_1$ [**(jibun-no) gakusei**
　　　　　Tanaka-teacher-top　German-and-French-acc　self-gen　student
　　　　futa-ri-zutsu-ga　t_1 yoku shitteiru]]-to]　omotteiru.
　　　　two-cl -dist -nom　　well　know　　-that think

　　　　'Prof. Tanaka thinks that German and French, two students each know well.'

　　b. $^?$Yamada-sensei-wa　[[supeingo-to-itariago-o　yoku shitteiru]-to]　omotteiru.
　　　　Yamada-teacher-top　Spanish-and-Italian-acc well　know　　-that think

　　　　'Prof. Yamada thinks that (two students (each)) know Spanish and Italian well.'

　　c. $^{?/??}$Yamada-sensei-wa　[[supeingo-o yoku shitteiru]-to]　omotteiru.
　　　　Yamada-teacher-top　Spanish-acc well　know　-that think

　　　　'Prof. Yamada thinks that (two students) know Spanish well.'

(47a) means Prof. Tanaka thinks that two students (of his) know German well and another two students (of his) know French well. Of significance is the fact that following (47a), (47b) can mean that Prof. Yamada thinks that two students (of his) know Spanish well and another two students (of his) know Italian well.

　　Under the LF-copying option, the LF representation of (47b) should be as in (48):

(48)　Yamada-sensei-wa　[$_{CP}$ [$_{TP}$ [$_{DistP}$ [$_{NQ}$ **gakusei futa-ri**]-zutsu] -ga**
　　　Yamada-teacher-top　　　　　　　　student two-cl -dist　-nom
　　　supeingo-to-itariago-o　yoku shitteiru]-to]　omotteiru
　　　Spanish-and-Italian-acc well　know　-that think

(48) allows the reading that Prof. Yamada thinks that each of the two students know both Spanish and Italian well. However, this LF representation does not permit the reading that associates two students (of his) with Spanish and another two students (of his) with Italian. The fact that this particular reading is available in (47b), therefore, indicates that in this example, the D-Op is present and the object NP is situated in a position c-commanding the subject QP. This state of affairs is exactly what we obtain under the PF-deletion option. The PF-parallelism requires the LF-representation of (47b) to be as in (49):

(49)　Yamada-sensei-wa [[supeingo-to-itariago-o [[$_{DistP}$ **D-Op** [$_{NQ}$ **gakusei**
　　　　　　　　　　　　　　　　　↑——————✔—————⌐
　　futa-ri] -zutsu]-ga yoku shitteiru]]-to] omotteiru

The adjunction of the D-Op to the scrambled object QP makes the intended reading available in (47b), parallel to (47a).

　　Yet, the fact that (47c) can also follow (47a) must be dealt with in a different way. Notice that under the PF-deletion option, (47c) would have the LF-representation given in

(50):

(50)   Yamada-sensei-wa [[supeingo-o [[$_{\text{DistP}}$ **D-Op** [$_{\text{NQ}}$ **gakusei futa-ri]-zutsu]-ga**

                        ↑_____✖_____|

yoku shitteiru]]-to] omotteiru

The problem is that since the scrambled object NP is singular, it cannot act as the R-NP for the D-Op. This means that the D-Op in question cannot be properly licensed in (50). Accordingly, the PF-deletion option is not the one to be adopted in (47c). (47c) must, therefore, employ the LF-copying option. Under the LF-copying option, (47c) will have (51) as its LF-representation.

(51)   Yamada-sensei-wa [[[$_{\text{DistP}}$ [$_{\text{NQ}}$ **gakusei futa-ri]-zutsu] -ga**   supeingo-o
        Yamada-teacher-top   student two-cl -dist   -nom Spanish-acc
        yoku shitteiru] -to]   omotteiru
        well know   -that think

Accordingly, (47c) can be interpreted as Prof. Yamada thinking that two students of his know Spanish.

To summarize, I have suggested that in principle, both LF-copying and PF-deletion are options available for AE in Japanese. However, due to independent factors such as the licensing of the D-Op, these two options are not always equally applicable. In the cases discussed in this section, when there is no potential candidate for an R-NP c-commanding the D-Op, PF-deletion cannot be chosen. Accordingly, the LF-copying option is forced.

Recall that I have shown in Section 5 that (30b), repeated here as (52b), involves LF-copying. However, under the present hybrid hypothesis, we now have another option; this example can also make use of PF-deletion, observing PF-identity with (30a), repeated here as (52a):

(52)   a. Taroo-to-Hanako-ga   **hon ni-satsu -zutsu -o**   katta.
           Taroo-and-Hanako-nom book two-cl -dist   -acc bought

           'Taroo and Hanako bought two books each.'

        b. Jiroo-to-Yuuko-mo   *e.c.* katta.
           Jiroo-and-Yuuko-also   bought

           'Jiroo and Yuuko also bought *e.c.*'

Under the PF-deletion option, the LF-representation of (52b) is as shown in (53):

(53)   [$_{\text{TP}}$ [$_{\text{EvP}}$ *e* [$_{v\text{P}}$ [[Jiroo-to-Yuuko] D-Op$_1$]-mo [$_{\text{VP}}$ **[$_{\text{DistP}}$ t$_1$ [$_{\text{NQ}}$ hon**

                                 ↑_____✔_____|

ni-satsu]-zutsu]-o   katta]]]] (-koto)

Since the NP *Jiroo-to-Yuuko* is plural, nothing would go wrong with the D-Op movement in (53). (52b) is thus one case in which either of the two options, LF-copying or PF-deletion, can be selected, due to there being no intervening factor prohibiting either of the options from applying.

7. Concluding Remarks

This paper has shown that the distributive affix *zutsu* and its Korean counterpart *ssik* are licensed by a plural NP c-commanding an NP containing an NQ with the affix in point in overt syntax. In order to capture this structural requirement, I have proposed an analysis of the affix in point, based on the (distributive) operator-movement. The proposed analysis enables us to derive the structural requirement in point from the general ban on downward movement. Furthermore, based on the contrast between stage-level and individual-level predicates in licensing the affix in point in subject position, I have argued that the event argument, which occupies SPEC EvP when the predicate is stage-level, can act as an R-NP in overt syntax. This paper has provided further support for the hypothesis that the event argument can act as an R-NP (Balusu 2006, 2010). However, I have suggested two modifications to his proposal. First, the event argument can, but not always, act as an R-NP. Second, the distributive operation involves D-Op movement in syntax.

Based on this Op-based approach to the distributive affix *zutsu*, I examined cases where an NP containing an NQ with *zutsu* is elided. I have suggested that in principle, so-called argument ellipsis results from either LF-copying or PF-deletion. However, due to independent reasons such as the licensing of the distributive operator, these two options are not always equally available.

This paper leaves significant questions open for future research such as why English binominal *each* cannot take the event argument as the R-NP, as observed in (54) (Safir and Stowell 1988):

(54) *   Two students each read LGB and Barriers.

Given the assumption that the event argument is uniformly available across natural languages, it should also be available in English. One way to deal with this dichotomy is provided in Balusu's (2006) proposal on duplicated numerals in Telugu, certainly tied to a question of whether the current proposal extends to duplicated numerals in Dravidian languages such as Telugu (Balusu 2006, 2010): The duplicated numeral projects DistP whose SPEC is occupied by the D-Op. In spite of such unresolved issues to this point, my intention is to broaden future research relating to distributive affixes and their relation to AE in East Asian languages.

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THREE TYPES OF THE "OVERGENERATED *NO*" IN THE ACQUISITION OF JAPANESE NOUN PHRASES*

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1. Introduction

It is very well known that Japanese-speaking children around ages one to four overgenerate *no* between the sentential modifier and the head NP, as shown in (1).

(1) a. howasi   ookii *no   howasi (= ohasi)   (2;1)
         chopstick big   NO   chopstick

         'chopsticks, the big ones, chopsticks'   (Nagano 1960)

     b. maarui *no   unti (2;0)
         round   NO   poop

         'a round poop'   (Yokoyama 1990)

     c. Yuta-ga   asyon-deru *no   yatyu wa   kore, kore   (Yuta 2;3)
         Yuta-Nom   playing-is   NO   thing Top   this   this

         'The thing that Yuta (I) is playing with is this (train).'

In (1a) and (1b), children insert *no* between the adjective (e.g., *ookii* (big) and *marui* (round)) and the head nominal (e.g., *howasi* (chopsticks) and *unti* (poop)) at around two years of age. Later, at two to four years of age, as in (1c), Japanese-speaking children insert *no* between the sentential modifier *Yuta ga asyon-deru* (Yuta is playing) and the head nominal *yatyu* (thing).

In adult Japanese, there are mainly three types of *no*.

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(2)　a.　[Yamada]　　no　　hon　　　(Genitive Case marker)
　　　　　　　　　　Gen　　book

　　　'Yamada's book'

　　b.　akai　　　　　　　no　　(Pronoun)
　　　　red (+present)　　one

　　　'the red one'

　　c.　Emi-ga　　hazimete　　　　　robusutaa-o　tabe-ta no　　wa　　Bosuton de
　　　　　-Nom　for the first time　lobster-Acc　ate　　Comp　Top　Boston　in
　　　　da　　　(Complementizer)
　　　　Copula

　　　'It is in Boston that Emi ate a lobster for the first time.'

(2a) is the genitive Case marker, which roughly corresponds to *'s* or *of* in English. (2b) is a pronoun, which roughly corresponds to *one* in English. A complementizer in (2c) is the head of the presuppositional phrase in the cleft sentence, which corresponds to *that* in English.

In the history of Japanese acquisition, three contradictory analyses, the Pronoun Hypothesis, the Genitive Case Hypothesis, and the Complementizer Hypothesis, have been proposed regarding the syntactic status of the overgenerated *no*. Accordingly, the age children overgenerate *no* is contradictory: Some say it happens when children are one year old (e.g., Nagano 1960), but some say it lasts until four years old (e.g., Murasugi 1991).

In this paper, mainly based on our longitudinal study with a Japanese-speaking child, Yuta, and the corpus analysis of CHILDES (Sumihare and Jun), we argue that the mysteriously long overgeneration phenomenon of *no*, in fact, stems from three distinct sources, as proposed by Murasugi, Nakatani and Fuji (2009). We argue that the mysterious "overgeneration of *no*" is not a single phenomenon in Japanese acquisition, and show that three contradictory hypotheses (i.e., Pronoun, Genitive Case, and Complementizer) proposed in the past acquisition researches are basically all correct. First, a pronoun *no* is used due to the limit in production at the two-word stage. Second, the genitive Case marker *no* is inserted because of the miscategorization of adjectives as nominals. Third, a complementizer *no* is overgenerated due to the parameterization in the structure of relative clauses. The overgeneration of *no*, which looks like a single phenomenon, is reanalyzed as a trihedral phenomenon, and each face represents one of the crucial developmental stages in language acquisition.

2.　The Complementizer Hypothesis: Relative Clause Parameter (Murasugi 1991)

Murasugi (1991), based on her longitudinal and experimental study with Japanese-speaking children at two to four years of age, proposes that the overgenerated *no* is a

complementizer. According to her analysis, a structure of a sentential modifier is parameterized; either CP or TP depending on the languages. Murasugi argues that sentential modifiers in adult Japanese (and Korean) are TPs, unlike CP relatives in English. However, Japanese-speaking children initially hypothesize that Japanese relative clauses are CPs, and overgenerate a complementizer between the sentential modifier and the head nominal.

Children's first complex NPs are found after two years of age, and they are usually a fixed expression without overgeneration (Murasugi and Hashimoto 2004). Our subject Yuta's first complex NPs were also fixed expressions. The relevant examples are shown in (3).

(3) a. Tottan-ga   katte kure-ta   purezento da   yo   (2;0)
         father-Nom buy   gave   present   Copula   Int

         '(This is) the present that my father bought (for me).

     b. Kore, Yuki-tyan-ga   kure-ta   purezento na   no   (2;0)
         this,   -Nom gave   present   Copula   Int

         'This is the present that Yuki-tyan gave (to me).'

In (3), the verbs were limited to *katte kureru* (buy and give) and *kureru* (give) only. The head NP was also limited to the NP, *purezento* (present).

Later, some children overgenerate *no* on sentential modifiers. Yuta started to overgenerate *no* productively not only in complex NPs as in (4a) and (4b), but also after adjectives as in (4c), after 2;2.

(4) a. Kare-teru   *no   hana   da   yo   (2;2)
         wither-is   NO   flower Copula   Int

         '(I have) a withered flower.'

     b. Yuta-ga   asyon-deru *no   yatyu wa   kore,   kore   (2;3)
           -Nom   playing-is NO   thing Top   this   this

         'The thing that Yuta (I) is playing with is this (train).'

     c. Kore nagai *no   yatyu da   ne   (2;3)
         this long NO   one   Copula   Int

         'This is a long one.'

In (4a), Yuta inserted *no* between the modifier *kare-teru* (is withered) and the head nominal *hana* (flower). Similarly, in (4b), Yuta (playing with a train in front of the box with the picture of the train, and comparing the toy and the picture of it), overgenerated *no* between the sentential modifier *Yuta-ga asyon-deru* and the head NP, *yatyu*. In (4c), he overgenerated *no* after the adjective *nagai* (long).

Murasugi (1991) reports that children at around two to four years of age overgenerate a complementizer *no* between the head NP and all types of sentential modifiers, as exemplified in (5).

(5)   a.   tigau *no   outi   (3;0)
            differ NO   house

            'the different house'

    b.   Emi-tyan-ga   kai-ta *no   sinderera (2;11-4;2)
                  -Nom   drew NO   Cinderella'

            'the Cinderella that Emi drew'

    c.   ookii *no   tako   (2;11-4;2)
            big   NO   octopus

            'a big octopus'   (Murasugi 1991)

In (5a), *no* is inserted between the inflected verb, *tigau* (differ) and the head nominal, *outi* (house), and in (5b), it is inserted between the sentential modifier and the head nominal. In (5c), *no* is overgenerated after the adjective, *ookii* (big), as well.

Crucially, however, she reports that those children, who overgenerated *no*, sometimes undergenerated the genitive Case marker on PPs, as in (6), although they can correctly insert it between two NPs, as in (7).

(6)   Tokyo   made   [φ]   basu   (3;2)
               to   *(Gen) bus

    'the bus to Tokyo'   (Murasugi 1991)

(7)   a.   Emi-no   hon   (Emi 2;9)
                -Gen   book

            'Emi's book'

    b.   megane-no   ozityan   (Miki 2;4)
            glasses-Gen   man

            'the man with eye glasses'   (Murasugi 1991)

Thus, the overgeneration takes place when the genitive Case marking is not fully acquired.

One piece of direct empirical evidence for the Complementizer Hypothesis was found in Toyama dialect in Japanese as in (8a) and Korean as in (8b).

(8)   a.   Anpanman   tui-toru   *ga   koppu   (Ken 2;11)
            (a character)   attaching-is   GA   cup

            'the cup which is pictured with "Anpanman"'   (Murasugi 1991)

       b.   Acessi otopai   tha-nun *kes   soli   ya   (2-3 years old)
            uncle   motorcycle riding-is   KES   sound   is

            '*Lit*. (This) is the sound that a man is riding a motorcycle.'   (Kim 1987)

The overgenerated item is a complementizer, for instance, *ga* in Toyama dialect, and *kes* in Korean, but not the genitive Case marker (*no* in Toyama dialect nor *uy* in Korean).

     Thus, not only Japanese-speaking children but also Korean-speaking children initially hypothesize that their relative clauses are CPs, and overgenerate a complementizer between the sentential modifier and the head nominal.

     Murasugi and Hashimoto (2004), however, argue that the Complementizer Hypothesis alone cannot fully explain the overgeneration phenomenon of *no*. In fact, the overgeneration of *no* is observed with very young children, even at around the age of one, when they start producing two-word utterances. Crucially, then, not only T or C related items, but also, even the genitive Case marker is not produced. Murasugi and Hashimoto point out that it is very unlikely that the same type of overgeneration lasts for four years, and conclude that there are two types of overgeneration of *no*: A pronoun and a complementizer.

3.   The Pronoun Hypothesis in Addition to the Complementizer Analysis (Nagano 1960, Murasugi and Hashimoto 2004, 2006)

     The Pronoun Hypothesis was in fact originally proposed by Nagano (1960) fifty years ago. His argument is very simple and clear: The overgenerated *no* cannot be the genitive Case marker, because the overgeneration takes place when there is no genitive Case marker found in the child production, but only pronoun *no* is produced. Examples in (9) are cited from Nagano (1960).

(9)   a.   howasi   ookii   *no   howasi (= ohasi)   (2;1)
            chopstick   big   one   chopstick

            'chopsticks, the big ones, chopsticks'

       b.   Amuna (= Harumi)   tittyai *no   Amuna   (2;1)
                              small   one

            'Harumi, the small one, Harumi'   (Nagano 1960)

In (9a) and (9b), *no* looks like to be erroneously inserted between the adjective (e.g., *ookii* (big) and *tiisai* (small)) and the NP (e.g., *howasi*, which is *ohasi* (chopsticks) and *Amuna,* which is *Harumi*) at 2;1. The overgeneration in question appears just after the pronoun *no*

starts to be correctly produced at 2;1, as in (10), but before the genitive Case marking is fully acquired, as in (11).

(10) a. ookii   no   (2;1)
          big   one

          'the big one (= bus)'

      b. tittyai   no   (2;1)
          small   one

          'the small one (= leaf)'   (Nagano 1960)

(11) ke…mama   [φ]   ke,   mama   [φ]   ke,   mama   (2;0)
      hair Mommy *(Gen) hair Mommy *(Gen)   hair   Mommy

      'hair…Mommy's hair, Mommy's hair, Mommy'   (Nagano 1960)

In (11), the child omitted the genitive Case marker *no*, although it should be inserted between *mama* (Mommy) and *ke* (hair) in the adult grammar. It is only one month later, at 2;2, that the genitive Case marker appears in the natural production, as shown in (12).

(12) Papa-no   buton (= zubon)   (2;2)
      Daddy-Gen   pants

      'Daddy's pants'   (Nagano 1960)

The parallel developmental stage was observed by Murasugi and Hashimoto's (2004) longitudinal study with Akkun, and our longitudinal study with Yuta. Both subjects started overgenerating *no* before the genitive Case marker was inserted between NPs.

(13) a. Akai   no   at-ta   (2;3)
          red   one   there-was

          '(I) found the red one'

      b. Akkun   no.   Akkun [φ] ohuton   (2;3-2;5)
                  one.   bed

          '(This is) Akkun's. Akkun('s) bed.'   (Murasugi and Hashimoto 2004)

Furthermore, both Akkun and Yuta put a brief pause between the NP headed by the pronoun *no* and the referential NP. (14) shows Akkun's data taken from Murasugi and Hashimoto (2004).

(14) a. Akkun tiityai no konkonkon (2;4)
small-is one hammer

'Akkun's (/My) small hammer'

b. [Akkun //pause// [tiityai no] //pause// konkonkon]

They argue that the utterance consists of two parts (i.e., *tiityai no* (small one) and *konkonkon* (hammer)), and this is very different from the overgeneration of a complementizer.

Similarly, the subject we examined in the present study, Yuta, started overgenerating *no* at around 1;10, when he just started combining two words in the utterances. An example is given in (15).

(15) a. Hon, atarasii no, hon da (1;10)
book new one book Copula

'a book, a new one, (this is) a book'

b. [hon //pause// [atarasii no] //pause// hon da]

The analysis of Praat[1] clearly shows that there is a pause between *no* and the reference NP, thereby confirming Murasugi and Hashimoto's (2004) observation.

Figure 1: A Pause Found between *No* and the Referential NP
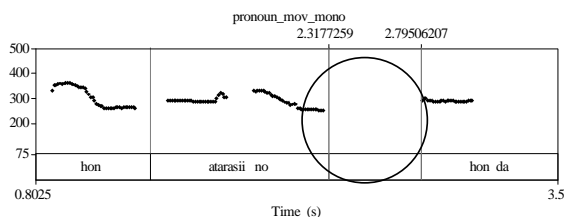
In Figure 1, the pitch contour shows that there is a pause of 0.48 seconds between *no* and the referential NP, *hon* (a book). Thus, this result indicates that the utterance consists of two parts.

In contrast, as for the overgeneration of a complementizer given in (4b) found after two years of age, there is no pause between *no* and the head NP.

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[1] Praat is a program for doing phonetic analyses and sound manipulations (Boersma and Weenink 2009).

Figure 2: No Pause Found between *No* and the Head NP with the Overgeneration of a
Complementizer
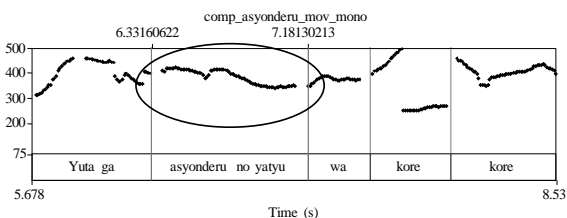
The Praat analysis in Figure 2 indicates that there is no separation of any kind, and *asyonderu (ashon-deru) no yatyu* is produced as a unit.

Hence, Murasugi and Hashimoto (2004, 2006) argue that Nagano's (1960) Pronoun Hypothesis is supported, and the overgenerated *no* at the age of one and early age of two is a pronoun. They analyze that this *no* is, in fact, not an error, but reflects the production strategy of very young children to combine two elements. When children cannot create the modification structure, they produce an NP headed by the pronoun *no* (one) first, to provide a frame for an NP, and the modifier, or the head nominal is realized as the second independent NP. Children use this strategy since the genitive Case marker is not yet acquired at the beginning of the two-word stage. Murasugi (2009) further proposes that this stage reflects the earliest morphological realization of the operation of merger, and that the onset of the merger starts with the phrases headed by the smaller category (*no* (one) as N′) with less semantic content. This hypothesis holds as there is a pause between the pronoun *no* and the second NP.

The argument given so far shows that there are at least two sources for the apparently same "overgeneration" phenomenon. The one observed in ages one and two is a pronoun, and the other observed in ages two through four is a complementizer.

However, another empirical problem arises. *No* is overgenerated when children have already acquired the genitive Case marker, have no problem in combining two elements, and produce no relative clauses. The mysterious *no* associated with those characteristics is exemplified in (16).

(16) a. atarasii *no kami (Yuta 1;11)
        new   NO   paper

      'a new paper'

    b. siroi *no gohan (Yuta 2;0)
        white NO   rice

      'white rice'

c. Tiisai *no buubuu tootta yo (Sumihare 1;11)

   small NO car passed Int

   'A small car passed.'

Crucially, the overgeneration is found after the two-word stage, at around the age of two, with limited adjectives such as color, size, shape, and state.

At this mysterious stage, the genitive Case marker between two NPs is productively and correctly used. For example, as in (17), Yuta started to produce the genitive Case marker between NPs at 1;11, and Sumihare started at 2;0.

(17) a. Ko otoosan-no hanasi da yo (Yuta 1;11)

   this father-Gen story Copula Int

   'This is a story of father.'

   b. Ringo-no ozityan-ga… (Sumihare 2;0)

   apple-Gen man-Nom

   'The man (who sells) apples is…'

Praat analysis reveals that unlike the case of a pronoun, there is no pause found between *no* and the NP following it. In Figure 3, no separation has been made between *siroi no* (white one) and *gohan* (rice), and they are produced as a unit.

Figure 3: No Pause Found between *No* and the Head NP with the Mysterious Overgeneration of *No*
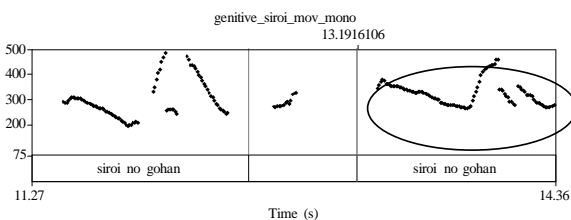
The facts shown above cannot be explained by the Complementizer Hypothesis either. This mysterious *no* is produced by children who have not acquired complex NPs yet, and the cleft sentences are hardly observed. Moreover, as noted above, the overgeneration is found only with the present-tensed adjectives of color, size, and state.

In the next section, we argue that children, at around the age of two, have difficulties in acquiring "the category of adjectives," and some adjectives are treated as nominals, and some, as verbs. Those "nominal-like adjectives" never inflect with tense, and children, who already know the genitive Case marker insertion between the nominal projections, correctly insert the genitive Case marker between the "nominal-like adjectives" and the head nominal. This would be the mysterious stage of overgeneration of *no* found before a relative clause is

acquired. (See Murasugi (2009) for details.)

4.　The Genitive Case Marker Hypothesis

The Genitive Case Marker Hypothesis has been proposed by many researchers in the past fifty years (Iwabuchi and Muraishi 1968, Harada 1980, 1984, Clancy 1985, Yokoyama 1990, Ito 1998, among others). Among those, Yokoyama's (1990) generalization is quite important. He argues that the erroneous *no* is a genitive Case marker, and it is overgenerated only with the adjectives referring to color, size, and shape (e.g., *akai* (red), *ookii* (big), *maarui* (round)), but never with other adjectives (e.g., *abunai* (dangerous), *yasasii* (kind)), as shown in (18).

(18)　a.　ookii　*no　　sakana　　(1;8)
　　　　　big　　NO　　fish

　　　　　'a big fish'

　　　b.　maarui　*no　　unti　　(2;0)
　　　　　round　　NO　　poop

　　　　　'a round poop'

Yokoyama's apparently curious generalization is further confirmed by Murasugi and Hashimoto (2004). They find that the adjectives of color, size, and shape do not inflect with tense, but appear only in present-tense forms.

This generalization is further supported by our longitudinal study with Yuta and also by our corpus analysis of Sumihare. The overgeneration occurs only with the adjectives which refer to color, size, shape, and state, but it never occurs with such adjectives as *itai* (is painful), *omoi* (is heavy), or *kowai* (is scary), which only appear in the predicative form with tense (i.e., present and past) but never in the prenominal form. As these adjectives never appear in the prenominal form, there is naturally no chance that the overgeneration should take place. Rather, these adjectives are not associated with the overgenerated *no*, and behave like verbs, as in (19).

(19)　a.　Oisii,　　　kore. Oisii,　　　kore　　(Yuta 1;10)
　　　　　delicious　this　delicious　　this

　　　　　'This is delicious.'

　　　b.　Koko　babatii　yo　　ne　　(Sumihare 2;0)
　　　　　here　dirty　　Int　　Int

　　　　　'(It is) dirty here.'

c. Okaatyan pompo itai no (Sumihare 2;0)

   Mommy onomatopoeia ache Q

'Mommy, is (your) stomach aching?'

In (19), the adjectives, *oisii* (delicious), *babatii* (dirty), *itai* (painful), are used as predicates, conjugating with tense as shown in Table 1 and Table 2.

Table 1 shows that the past-tense forms of nominal-like adjectives are produced relatively late, but those of verb-like adjectives are produced relatively early in the case of Yuta.

Table 1: The Age of the First Appearance of the Present-/Past-tense Forms of Adjectives by
      Yuta

Nominal-like Adjectives (of Touch and Sight)			Verb-like Adjectives		
Adjectives	Present-tense	Past-tense	Adjectives	Present-tense	Past-tense
ookii 'big'	ooki-**i** (1;8)	ookik-**atta** (2;0)	*itai* 'painful'	*ita*-**i** (1;11)	itak-**atta** (1;11)
tiisai 'small'	tiisa-**i** (1;11)	tiisaik-**atta** (2;1)	*oisii* 'delicious'	oisi-**i** (1;10)	omok-**atta** (1;10)
kuroi 'black'	kuro-**i** (2;0)	kurok-**atta** (2;4)	kowai 'scary'	kowa-**i** (1;10)	kowak-**atta** (2;2)

The contrast between nominal-like adjectives and verb-like adjectives is clearer in the case of Sumihare, as shown in Table 2.

Table 2: The Age of the First Appearance of the Present-/Past-tense Forms of Adjectives by
      Sumihare (CHILDES)

Nominal-like Adjectives (of Touch and Sight)			Verb-like Adjectives		
Adjectives	Present-tense	Past-tense	Adjectives	Present-tense	Past-tense
ookii 'big'	ooki-**i** (1;11)	ookik-**atta** (2;9)	*itai* 'painful'	*ita*-**i** (1;8)	itak-**atta** (2;0)
akai 'red'	*aka*-**i** (1;11)	akak-**atta** (4;0)	*omoi* 'heavy'	omo-**i** (1;8)	omok-**atta** (2;2)
siroi 'white'	siro-**i** (2;2)	sirok-**atta** (3;6)	*kusai* 'smelly'	kusa-**i** (2;2)	kusak-**atta** (2;3)

Sumihare produced only the present forms for nominal-like adjectives, but never the inflected forms, when he inserted *no* between the adjectives of touch and sight (e.g., color, size, shape, and state) and the head nominals. On the other hand, the verb-like adjectives (e.g., *itai* (painful), *omoi* (heavy), *kusai* (smelly)), which are not erroneously genitive Case marked, inflected with tense much earlier.

There are several pieces of evidence to show that the adjectives referring to the sense of touch and sight are used as nominals. For example, as shown in (20), these adjectives are used as referential noun phrases.

(20)　　a. *Kiiroi　　to　　*akai　　to　　　(Sumihare 2;9)
　　　　　　yellow　　and　　red　　　and

　　　　　'(They're) a yellow (crayon) and a red (crayon).'
　　　　　(Adult form: kiiroi/akai-no (yellow/red one), kiiro/aka (yellow/red))

　　　　b. *Tiisai　　koo-te　　　　ya　　　(Sumihare 2;7)
　　　　　　small　　buy-Request　Int

　　　　　'Please buy a small (dog).'
　　　　　(Adult form: tiisai-no (small one))

In (20a), Sumihare erroneously used the adjectives *kiiroi* (yellow) and *akai* (red) to refer to the concrete objects, a yellow crayon and a red crayon. Similarly in (20b), he used the adjective *tiisai* (small) to refer to a small dog.

These nominal-like adjectives appear in the argument position being Case marked as well.

(21)　*Tittyai-ga　　atte *maarui-ga　atte...　　konna　　*ookii-ga　atte...　　(Yuta 2;2)
　　　　small-Nom　　be　　round-Nom　be　　　such　　　big-Nom　　be

　　　　'There is (a) small (circle), (a) round (one), and such (a) big (one)…'
　　　　(Adult form: Tittyai/maarui/ookii no (small/round/big one))

Yuta uttered as in (21), while he was repeatedly drawing circles. The adjectives, *tiisai* (small), *marui* (round) and *ookii* (big), appear in the subject position associated with the nominative Case marker *ga*.

The most valid generalization to be drawn from the description so far is that the adjectives referring to the sense of touch and sight are miscategorized as nominals (Murasugi 2009). Hence, those children who already know the system of genitive Case marking between two NPs, "correctly" assign the genitive *no* to the "nominals" which are, in fact, adjectives in adult grammar.

Then, why do children miscategorize certain adjectives? We conjecture that adjectives referring to color, size and shape share the properties of concrete nominals in that they are consistent, absolute, and evidential, compared with other types of adjectives such as emotion and evaluation (cf. Berman 1988, Mintz and Gleitman 2002). And as argued by de Villiers and de Villiers (1978), a certain set of adjectives of size and shape go together as colors in child language.

Furthermore, acquiring adjectives is difficult because it is "a fluid category" (Gassar and Smith 1998, Berman 1988, Polinsky 2005, among others). As shown in (22), the position where the adjective *big* appears in adult English can be occupied with the verb *dropped* or the noun *a dog*. Thus, the syntactic cue is ambiguous for children.

(22)   a.   It's [big]

    b.   It [dropped]

    c.   It's [a dog]

The syntactic cue is ambiguous in Japanese, too. Both adjectives and nominals can be followed by the polite sentence-ending marker *desu*, as in (23), while both adjectives and verbs inflect with tense, as in (24).

(23)   a.   akai   desu   (Adjective)
        is-red (Adj)   Polite

        '(It) is red.'

    b.   aka   desu   (Nominal)
        a red color (Nominal)   Polite

        '(It) is a red color.'

(24)   a.   ooki-i   ookik-atta   (Adjectives)
        big-Pres   big-Past

    b.   aka-i   akak-atta   (Adjectives)
        red-Pres   red-Past

    c.   tabe-ru   tabe-ta   (Verbs)
        eat-Pres   eat-Past

    d.   nom-(r)u   non-da   (Verbs)
        drink-Pres   drink-Past

In this sense, the Japanese adjective is also "a fluid category," and this could make adjectives difficult to be acquired.

Then, when and how do children "intake" the full system of adjectives in the target language? Kanda (2012), based on the corpus analysis of Taro in CHILDES, reports that there is an interesting stage where a Japanese-speaking child "optionally" inserts genitive *no* inside the NPs.

(25)   a.   kuro   kyuukyuusya   (2;10)
        black   ambulance

        'the ambulance that is black'

b. Kuroi ozubon?   (3;1)
   black   pants

   'The black pants?'

c. Kuroi *no   ozubon?   (3;1)
    black   NO   pants

    'The black pants?'

A nominal form *kuro*, an adjective form *kuroi* without being associated with genitive *no*, and an adjective form *kuroi* "erroneously" associated with genitive *no*, are all found at around the same age, as shown in (25a), (25b), and (25c), respectively. The noun phrase in (25a) is only possible as a compound noun, and the noun phrase in (25c) is ill-formed. The examples in (25b) and (25c) are in fact found in a dialogue between Taro and his mother.

(26)   MOTHER: Kuroi   ozubon doko?
                 black   pants   where

                 'Where are the black pants?'

       TARO: Kuroi *no   ozubon? (= 25c)
                 black   NO   pants

                 'The black pants?'

       MOTHER: Un.
                 yes

                 'Yes.'

       TARO: Kuroi   ozubon? (= 25b)
                 black   pants

                 'The black pants?'

The example given above is intriguing in three ways. First, the child does not merely imitate the caretaker's utterance. Second, the child corrects himself without any direct negative evidence. Third, the child is in the transition period, not only with respect to the categorization of the color adjective, but also with respect to the tense conjugation. Kanda (2012) argues that Taro, at around the time when the overgenerated *no* is disappearing, produces the past-tensed form of the adjective in question in a "quasi-adult" way.

(27)   kuro [pause] *kuroi-katta   (3;2)
       black   black-Past

       '(It was) black.'

Taro produced the utterance given in (27) when he found a black spot on his brother's leg. Here, the past-tense marker '-*katta*' is attached to '*kuroi*', not exactly in the adult way. In fact, in adult Japanese, the form should be *kurok-atta*, or *kuro-datta*, rather than *kuroi-katta*. Thus, just at the time when the color adjective '*kuroi* (black)' was "fluid" with respect to the form and the marking of genitive Case marker, so was the tense conjugation.

Interestingly, Kanda (2012) points out that Taro's adjectives such as '*yoi* (good)', which expresses positive degree of quality of thing or person for itself, conjugate just like the verb '*wakaru* (understand)'. Taro starts attaching the past-tense affix '-*atta*' on the stem of some types of adjectives at around 2;11 as in (28a), just like the verb given in (28b).

(28)   a. yok-atta   (2;11)
           good-Past

           '(It) was good.'

       b. wak-atta   (2;11)
           understood

           '(I) understood (that).'

The fact that the conjugation system of verb-like adjectives is acquired earlier than that of noun-like adjectives is, in fact, parallel with the data of Yuta and Sumihare. The paradigm observed in the transitional period from "child adjectives" from "adult adjectives" such as those shown above would provide clues to the analysis of the category of adjectives.

Note here that even if we assume that children's miscategorization of certain adjectives causes the genitive Case marker insertion, the Complementizer Hypothesis should be still maintained. For example, remember the overgeneration phenomena in Toyama dialect in Japanese and Korean. As in (8a) and (8b), repeated below, the overgenerated item is a complementizer, but not the genitive Case marker.

(8)   a. Anpanman   tui-toru   *ga   koppu   (Ken 2;11)
          (a character) attaching-is   GA   cup

          'the cup which is pictured with "Anpanman"'   (Murasugi 1991)

       b. Acessi   otopai   tha-nun *kes   soli   ya   (2-3 years old)
          uncle   motorcycle riding-is KES   sound   is

          '*Lit*. (This) is the sound that a man is riding a motorcycle.'   (Kim 1987)

Thus, the Complementizer Hypothesis we discussed in Section 2, should be maintained, and there are three distinct stages of the "overgeneration" of *no*.

The hypothesis that there are three stages in the "overgeneration" of *no* is further supported by our corpus analysis of Jun. First, Jun, at 2;2, produced a pronoun but not the

genitive Case marker. He produced (29a) and (29b), where there was a brief pause between *no* and the head nominals, *basu* (bus) and *okaasan* (mother). This is exactly the Pronoun stage as is discussed in Section 3.

(29) a. Ookii no   [pause] basyu (= basu) wa?   (2;4)
          big   N′ (one)   bus   Top

      '(Where) is the big bus?'

      b. ookii no   [pause] okaasan   (2;5)
          big   N′ (one)   mother

      'the big one, mother'

Then, at around 2;5, when the genitive Case markers were productively used as in (30), he inserted *no* between adjectives referring to color, size and shape and the head nominals, without making any pauses, as in (31).

(30) Kokko-no   outi   ya   (2;5)
      chicken-Gen   house   Int

      '(This is) a chicken's house.'

(31) a. Hore, ookii *no   torakku atta zo hore   (2;6)
          hey   big   NO   truck   was Int hey

      'Hey, there is a big truck.'

      b. tiisai *no   akatyan   (2;6)
          small   NO   baby

      'a small baby'

      c. kuroi *no   zidoosya   (2;6)
          black   NO   car

      'a black car'

Just like Yuta and Sumihare, the overgeneration occurs only with the adjectives of touch and sight, and those adjectives are sometimes used as nominals as well.

(32) a. *Ookii-ga otiru   (2;7)
          big-Nom   fall

      'The big (toy car) is falling.'
      (Adult form: ookii-kuruma-ga / ookii-no-ga)

    b. FAT: Kore-wa nan   desu ka
                  this-Top what Cop Q

              'What is this?'(Showing CHI a new toy)

        CHI: Atarasii *no   *akai   (2;8)
               new   NO   red

              '(It's) new red.'
              (Adult form: atarasii akai-no)

In (32a), the adjective *ookii* (big) appears in the subject position associated with the nominative Case marker *ga*. In (32b), he used the adjective *akai* (red) to refer to the concrete object, a red toy. Hence, those adjectives are treated as nominals, and the overgenerated *no* in (31) is the genitive Case marker, being "correctly" inserted between two NPs.

    Finally, as in (33), he started overgenerating *no* with relative clauses at around 2;8.

(33)   a. koware-ten   *no   yatu   zidoosya   (2;8)
           is-broken   NO   thing   car

          '(This is) a broken car.'

     b. Omosiroi *no   yakiimo   ya kore   (2;10)
           funny   NO   baked sweet potato   Int this

          'This is a funny baked sweet potato.'

    In (33a), *no* is overgenerated between the modifier *koware-ten* (= *teru*) (is broken) and the head nominal *yatu* (thing). (33b) shows that the overgeneration occurs with any kind of adjectives at this stage. Thus, this is the Complementizer stage, where Jun hypothesizes that Japanese relative clauses are CPs (Murasugi 1991).

    Overgeneration of *no* at a later stage of language acquisition can be due to two different reasons, even when they apparently look very similar. Children's miscategorization of certain adjectives causes the genitive Case marker insertion as shown in (32). In addition, the Complementizer Hypothesis should be still maintained to explain the overgeneration of *no* given in (33). The categorization of adjectives and the parameter-setting of the structure of complex NPs are the separate issues.

    If this analysis is on the right track, then we predict that the children's erroneous *no*'s in such examples as (32) and (33) do not necessarily "disappear" simultaneously. Murasugi (1991), in fact, observes that Emi, a Japanese-speaking child, kept inserting *no* between such color adjectives as *kuroi* (black), or the exact color term we discussed in this paper, and the head nominal. That is, the child kept producing "*kuroi *no kuku* (the black shoes)," even after the child stopped overgenerating *no* on the relative clauses. Murasugi (1991) stipulates in her dissertation that the name of the black shoes, which were worn only at a very special

occasion, remained in the child lexicon as the name associated with overgenerated *no*. But the stipulation might have been wrong. The problem left unsolved by Murasugi (1991) and the mysterious overgeneration phenomenon may be naturally explained by the proposal that the categorization of adjectives and the parameter-setting of the structure of complex NPs are the separate issues.

5. Conclusion

In this paper, mainly based on the longitudinal studies with Yuta, and the corpus analysis of Sumihare and Jun (CHILDES), we argued that there are three stages of Japanese-speaking children's overgeneration of *no*, in line with Murasugi, Nakatani and Fuji (2009). The overgeneration of *no*, which apparently looks like a single phenomenon includes three parts: *No* as (i) a pronoun (N′) at the late age of one, (ii) the genitive Case marker at around the age of two, and (iii) a complementizer (C) at around the age of two through four. The only case that we can truly name as overgeneration is the third stage, or the overgeneration of C. In the other two, *no* is actually used "correctly".

The sixty-year-debate in the field of Japanese acquisition has never ended because of the belief that the overgeneration takes place for a single reason. However, in this paper, we argued that the overgeneration of *no* is a trihedral phenomenon, and the hypotheses proposed were basically all correct. The overgeneration of *no* is due to three independent reasons, i.e., the immature merge operation, the miscategorization of adjectives, and the setting of the relative clause parameter. The analysis of children's errors informs us of the important phases in the stages of grammar acquisition, and provides a key to understanding the nature of language.

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NUMERAL CLASSIFIERS, PLURAL/COLLECTIVE ELEMENTS, AND NOMINAL ELLIPSIS*

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1. Introduction

There are many important theoretical issues surrounding the syntax of noun phrases in classifier languages such as Chinese and Japanese. For example, because the numeral classifier (NC) occurs in several syntactic environments in Japanese (e.g., prenominally, postnominally, and floating), a question arises with regard to their relations, that is, whether or not they should be analyzed as arising from the same underlying source (see Watanabe 2006). More broadly speaking, the question about the presence (or absence) of 'extended' projections in Japanese, both in the clausal and nominal domains, has been a topic of intense debate for several decades (see Fukui 1986, Fukui and Sakai 2003, Chierchia 1998a,b, and a series of recent papers by Bošković among many others). Against this background, I will investigate the syntax of noun phrases in Japanese, by primarily focusing on the ways in which the NC interacts with the plural/collective element and the universal quantifier. I will discuss three issues in this connection. First, following Li (1999), I will motivate a syntactic dependency involving the plural/collective element and an abstract functional head in Chinese and Japanese. Second, I will discuss how the NC interacts with a universal quantifier inside and outside the nominal domain (see also Kawashima 1998). Finally, I will discuss some nominal ellipsis paradigms in light of the syntax of classifiers explored in this paper. It should be noted at the outset of this paper that each of the issues to be discussed below deserves much more careful scrutiny. What is reported here is preliminary in a number of respects.

The NC in Japanese is known to appear in several environments, including a prenominal position and a postnominal one, as illustrated in (1). When it appears prenominally, it is accompanied by the particle -*no*, unlike when the NC appears postnominally.

(1) a. taroo-wa **go-ko**-no gyooza-o tabe-ta. (prenominal NC)
        Taro-TOP 5-CL-GEN dumpling-ACC eat-PAST

      'Taro ate five dumplings.'

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b. taroo-wa　　gyooza　　**go-ko**-o　　tabe-ta.　　　　　(postnominal NC)
　　Taro-TOP　　dumpling　5-CL-ACC　eat-PAST

Following Huang and Ochi (2011), I will explore a non-uniform approach to the two NC constructions.[1] In particular, I assume, following Saito et al. (2008) and Miyamoto (2009), that the prenominal NC is an NP-level modifier (or an adjunct), as shown in (2). I also assume that the postnominal NC has the structure shown in (3) (which is based on Watanabe (2006)).

(2)
```
          NP
         /  \
   CLP-no    NP
    /\
  #-CL
```

(3)
```
            XP
           /  \
         NP    X'
          ↑   /  \
          | CLP    X
          | /\
          |#  CL'
          |    /  \
          └ t_NP    CL
```
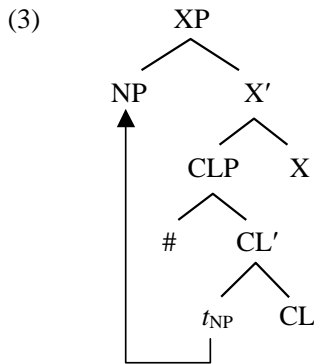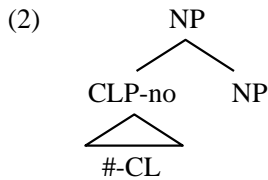
Although the main focus of this paper is on Japanese, I will also make crucial reference to the nominal structure of Chinese. Following Tang (1990) and Cheng and Sybesma (1999), I will assume, without any further discussion, that the NC construction in Chinese instantiates a structure like the one in (5), where the classifier is a head selecting NP as its complement.

(4)　　san-ben(*-de)　shu　　　　(Chinese)
　　　　3-CL　　　　　book

　　　'three books'

(5)
```
       CLP
       /  \
      #    CL'
          /  \
        CL    NP
```

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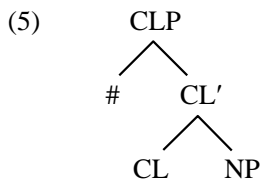
[1] See Sauerland and Yatsushiro (2004) and Miyamoto (2009) for a non-uniform treatment of the NC constructions in Japanese. See also Shlonsky (2004) for a non-uniform treatment of prenominal and postnominal numerals in Hebrew.

One point worth mentioning here is that, under this line of approach, the NC construction in Chinese (5) and the postnominal NC construction in Japanese (3) essentially share the same structure, except that the latter involves overt movement of NP. This point will be taken up in section 2. Before turning to the three issues mentioned earlier, let me briefly introduce two arguments from Huang and Ochi (2011) in support of this line of hypothesis (for a fuller discussion, I advise the reader to consult Huang and Ochi (2011)) .

1.1. Scope

One of the implications of the approach sketched above is the following. Comparing (2) and (3), we can see that the position of the postnominal classifier is structurally higher than that of the prenominal classifier: the former selects NP as its complement whereas the latter is an adjunct to NP. Generalizing this point, we might argue that a postnominal element, be it a classifier or something else, is structurally higher than any prenominal element. The contrast in (6) confirms this point. As discussed by Watanabe (2006) and others, universal quantifiers like *subete* also occur both prenominally and postnominally. Crucially, (6a) is ungrammatical. This contrast follows from the structures in (2) and (3), assuming that the universal quantifier cannot be in the scope of numerals, as illustrated by the English data in (7). I therefore assume that a postnominal element is structurally higher than a prenominal one.

(6) a. *taroo-wa **subete**-no gyooza **go-ko**-o tabe-ta. (*∀-no N NC)
     Taro-TOP ∀-GEN dumpling 5-CL-ACC eat-PAST

'Taro ate all (of the) five dumplings.'

b. taroo-wa **go-ko**-no gyooza **subete**-o tabe-ta. **(NC-no N ∀)**
     Taro-TOP 5-CL-GEN dumpling ∀-ACC eat-PAST

(7) all three books vs. *three all books

1.2. Specificity

The structures in (2) and (3) also indicate that the postnominal NC construction involves more structure than the prenominal NC, since the former always involves projections on top of NP. This point receives potential support from a particular line of approach to specificity, taken up by Hudson (1989), Ritter (1995) and Muromatsu (1998). The gist of this approach is summarized in (8), which Huang and Ochi (2011) argue is confirmed by the Chinese pattern shown in (9). The point about (9) is that in order for Chinese to express a specific indefinite reading, it needs more material than it does for expressing a non-specific indefinite reading.

(8) Specific indefinites have a larger structure than non-specific indefinites (see Hudson 1989, Ritter 1995, and especially Muromatsu 1998).

(9)　Chinese indefinites (setting aside the definite vs. indefinite issue; see Cheng and Sybesma (1999))

	non-specific	specific
Bare N (e.g., *shu* 'book')	√	*
CL + N (e.g., *ben shu* 'CL book')	√	*
Num + CL + N (e.g., *san-ben shu* '3-CL book')	√	√

Now let us compare this table with the one in (10), which is for Japanese. As discussed by Huang and Ochi (2011), whose discussion is based on Downing (1994), there is an interpretive difference between the prenominal NC and the postnominal NC in Japanese. Specifically, the postnominal NC strongly prefers a specific indefinite reading.

(10)　Japanese (see Downing 1994, Huang and Ochi 2011)

	non-specific	specific
Prenominal NC + N (e.g., *san-satsu-no hon …*)	√	√
N + Postnominal NC (e.g., *hon san-satsu-o …*)	??	√
Floating NC (e.g., *hon-o kinoo san-satsu …*)	√	*

We can demonstrate this point by placing prenominal and postnominal NCs in a context that forces a non-specific reading. As shown below, the postnominal NC sounds fairly degraded in such contexts (see Huang and Ochi 2011 for a detailed discussion of such paradigms).

(11)　<u>Non-specific context</u> (√ prenominal; *postnominal NC; √ floating NC)
　　　heikin-suru to,　　kono　byooin-de-wa　　maishuu　　…
　　　average-do,　　　this　hospital-at-TOP　every week

　　　'On average, every week in this hospital, …'

　　a.　**san-nin**-no　akanboo-ga　　umare-teiru.
　　　　3-CL-no　　　baby-NOM　　be born

　　　　'... three babies are born.'

　　b. *akanboo　**san-nin**-ga　umare-teiru.
　　　　baby　　　3-CL-NOM　be born

　　cf. akanboo-ga　**san-nin**　umare-teiru.
　　　　baby-NOM　　3-CL　　　be born

Note that among the various nominals listed in (9) and (10), the postnominal NC in Japanese is exceptional in that it resists a non-specific reading. This curious property of the postnominal NC in Japanese follows under a particular approach to specificity summarized in (8), assuming that the postnominal NC in Japanese is always sufficiently 'large', as discussed

above.[2] The postnominal NC structure shown in (3) is even larger than the Chinese NC structure in (5); the former involves an additional projection on top of the classifier projection, which is needed to host the moved NP. Now let us turn to the three issues mentioned earlier.

2.   Classifiers and Collective/Plural Elements

As mentioned earlier, our approach to numeral classifiers treats the postnominal NC in Japanese and the NC structure in Chinese alike: both involve the classifier head that takes NP as its complement. But there is an interesting difference between the two. Let us examine some data containing plural/collective suffixes in the two languages: *-men* in Chinese and *-tachi* (*-ra* etc.) in Japanese. As pointed out in the previous literature (see in particular Kurafuji 2004), these suffixes share a number of inherent semantic properties. For example, they yield two different readings, depending on the type of the noun to which they are attached. When attached to common nouns, they typically yield the plural reading, as illustrated in (12). In this respect, *-men* and *-tachi* are similar to *-s* in English.

(12)   a.   xuesheng-men
              student-MEN

              'the students'

        b.   gakusei-tachi
              student-TACHI

              '(the) students'

When attached to proper nouns, these suffixes yield the so-called 'collective' reading ("… and others").

(13)   a.   Xiao Qiang-men
              Xiao Qiang-MEN

              'Xiao Qiang and others'

        b.   taroo-tachi
              Taro-TACHI

              'Taro and others'

There are additional similarities between *-men* and *-tachi*. As noted by Li (1999), attachment

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[2] Alternatively, NP-movement to the nominal edge as depicted in (3) may be directly responsible for this apparent specificity effect, the idea being that the landing site of NP-movement counts as a criterial position, a position dedicated to express some scope/discourse property, in the left edge of a nominal domain, akin to criterial positions in the left edge of a clause (thanks to Luigi Rizzi (p.c.) for the suggestion).

of *-men* forces the resulting nominal expression to be definite, as shown in (14b).

(14) a. Wo qu zhao haizi.
         I   go find child

     'I will go find some/the child(ren).'

     b. Wo qu zhao haizi-men.
         I   go find child-MEN

     'I will go find the children.'

According to Kurafuji (2004), the same property is observed with *-tachi* in Japanese.[3] For example, while (15a) is fully felicitous in a situation in which finding any child(ren) will fulfill the speaker's desire, (15b) sounds strange in a situation in which the speaker has no particular group of children in mind.

(15) a. boku-wa   kodomo-o   sagashiteiru.
         I-TOP   child-ACC   look for

     'I'm looking for some/the child(ren).'

     b. boku-wa   kodomo-tachi-o   sagashiteiru.
         I-TOP   child-TACHI-ACC   look for

     'I'm looking for the children.'

There is one striking difference between *-men* and *-tachi*, however. According to Iljic (1994) and Li (1999), *-men* and the classifier cannot co-occur when the former is attached to the common noun. No such restriction applies in the corresponding case in Japanese.[4]

(16) a. Wo qing [san-ge xuesheng(*-men)] chifan.
         I   invite 3-CL   student   -MEN   eat

     'I invited (the) three children for a meal.'

---

[3] But see Nakanishi and Tomioka (2004) for a different view. While they offer several arguments to the effect that *-tachi* is not inherently definite, what is crucial for me here is that these suffixes share some property P (be it definiteness or something else) and that P is tied to the syntactic dependency between N-*men*/*-tachi* and a higher functional head. It is therefore necessary to examine whether or not the points and observations made by Nakanishi and Tomioka for *-tachi* also hold for *-men*, a task that I have to leave for another occasion.

[4] Previous analyses of this phenomenon include Borer's (2005) morpho-syntactic account and Bale & Khanjian's (2008) semantic account. The former works well for Chinese but fails to extend to Japanese. The latter discusses some interesting fact about Armenian vs. English; but it fails to capture the fact about Japanese.

b. boku-wa   [san-nin-no   gakusei-tachi   / gakusei-tachi   san-nin]-o
   I-TOP   3-CL-GEN   student-TACHI / student-TACHI 3-CL   -ACC
   maneita.
   invited

   'I invited (the) three students for a meal.'

As pointed out by Li (1999), there is no inherent incompatibility between *-men* and the classifier. They can co-occur when *-men* is attached to the proper noun/pronoun occurring in the left edge of the nominal phrase, as shown in (17a). We find a parallel example in Japanese, shown in (17b).

(17)   a.   Wo qing   [ta-men   / Xiao Qiang-men   san-ge   (ren)]   chifan.
            I   invite   (s)he-MEN / Xiao Qiang-MEN   3-CL   person   eat

           'I invited [them three children/the three people including Xiao Qiang] for a meal'

     b.   boku-wa   [kanojo-tachi / hanako-tachi   san-nin-no   josei]-o   maneita.
           I-TOP   she-TACHI / Hanako-TACHI 3-CL-GEN   lady -ACC   invited

           'I invited [them three ladies/the three ladies including Hanako'

What would account for the contrast in (16)? Adopting Li's overall proposal, let us assume (18).

(18)   Properties of *-men* and *-tachi* (see Li 1999)
     a.   They are suffixes attached to the nominal head.
     b.   They bear some feature relevant for definiteness (but see also footnote 3), which needs to be checked against a higher functional head.

For Li (1999), the relevant functional head of (18b) is D, but I will not commit myself as to the exact label of this functional head, simply referring to it as Y.[5] I will also assume, following Li (1999), that the head movement of N to a higher functional head is blocked by the presence of the CL head, as shown in (19).

---

[5] This Y head may or may not be identical to X in (3). As briefly discussed in section 1.2, the postnominal NC construction always has an extra projection on top of CLP (labeled as XP) and it is typically interpreted as a specific nominal. YP, the locus of definiteness, may be projecting on top of XP, a possibility which is compatible with the analysis in the main text.

(19)　　　　　YP　　　　　　　　　(HMC violation; see Li 1999)

```
            YP
           /  \
          Y    CLP
          ↑   /   \
             #     CL′
                  /   \
                 CL    NP
                       /\
                    N-men
             |___✗___|
```
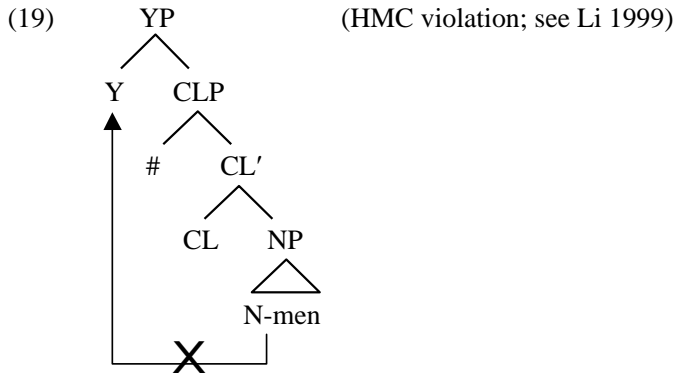
Although I essentially adopt Li's (1999) overall analysis, there is one point of departure. I assume that this head movement in Chinese is covert. As shown in (20), adnominal adjectives always precede the head noun in Chinese, which would be unexpected if the N head moved up in overt syntax.

(20)　a.　Wo　zhaodao-le　kaile-de　haizi-men　　le.
　　　　　I　　found-ASP　happy-DE　child-MEN

　　　　　'I found the happy children.'

　　　b.　*Wo　zhaodao-le　haizi-men　　kaile(-de)　le.
　　　　　I　　found　　　　child-MEN　happy

I will assume that this covert head movement of N is also available in Japanese. (21) illustrates this point for the prenominal NC structure with -*tachi*. Given our earlier assumption that the prenominal NC is an adjunct to NP, it is no surprise that it does not block the head movement of N (see also Ueda and Haraguchi 2008 on this point).

(21)　　　　　　　　YP　　　　　　　　(prenominal NC in Japanese)

```
              YP
             /  \
            NP    Y
           /  \   [def]
        CLP-no  N-tachi  ↑
          /\    |_____|
       #-CL
```
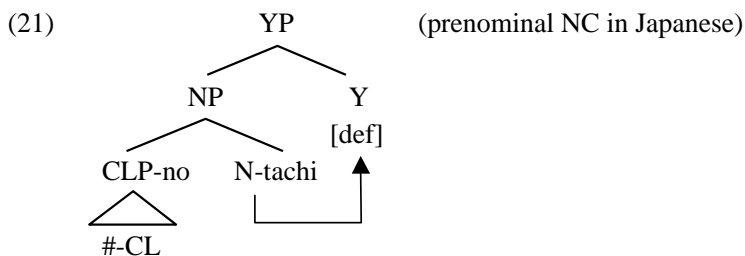
The real interesting issue here is why the postnominal NC and -*tachi* can co-occur. Recall our assumption that the postnominal CL structure in Japanese is parallel to the Chinese CL structure. In both cases, the CL head takes NP as its complement.

　　I believe that the structure shown in (3) would give us an answer. As shown in (22), NP, to whose head -*tachi* is attached, moves out of CLP and lands in the spec of YP, upon which -*tachi* and the functional head Y are in a local relation. In essence, -*tachi* moves as a free

rider, carried along with the rest of NP, which moves for an independent reason (see Huang and Ochi 2011).

(22)

```
                    YP
              ┌──────┴──────┐
            NP              Y′
          ┌──┴──┐        ┌──┴──┐
      N-tachi  CLP        Y
                ┌──┴──┐   [def]
                #    CL′
                    ┌──┴──┐
                  t_NP    CL
```
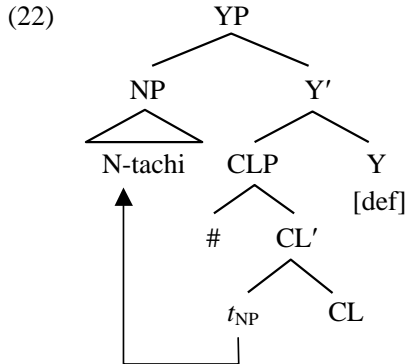
The fact about (17), i.e., that *-men* and *-tachi* can be attached to proper nouns/pronouns that occur in the left edge of the nominal which includes the classifier, follows from Li's (1999) proposal that such phrases can be base-generated fairly high (e.g., in the spec of YP) in the nominal domain. As shown in (23), *-tachi* and Y can enter into a checking relation "as is."

(23)

```
                YP                    (for (17b))
          ┌──────┴──────┐
    kanojo-tachi        Y′
                     ┌───┴───┐
                    NP       Y
                  ┌──┴──┐   [def]
              san-nin-no N
```
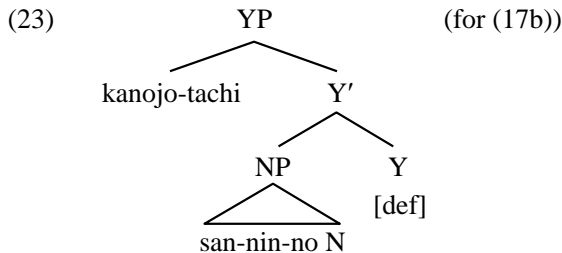
3. Floating/Stranded ∀ + Numeral

The second issue that I would like to take up here concerns the relation between adnominal classifiers and floating classifiers. The connection between them has been intensely debated in the literature. One prominent view, going back to Miyagawa (1989), holds that the floating NC and the noun it modifies are "together" in the underlying structure. Let us refer to this view as the 'stranding' view. There are scholars who question this view, especially those who take the floating NC to be adverbial in nature. See, for example, Nakanishi (2007) for a recent work along this line. In this section, I present some data pointing to the view that at least some instances of floating classifiers must involve stranding.

As a starting point of discussion, let us introduce Jenks' (2011) cross-linguistic generalization concerning floating/stranded NC.

(24)   Only those classifier languages that have (or allow) the Noun-NC order allow NC-float (head-final languages: Burmese, Japanese, and Korean; head-initial languages: Thai, Khmer).

To the extent that the stranding view is correct, (24) has an implication that it is the postnominal NC, not the prenominal NC, that should be related to the stranded NC. The idea is that NP-movement takes place in both cases, but they differ with respect to the final position of NP. If NP ends up in the left edge of the nominal domain, we get the postnominal NC construction, as shown in (25a). If NP moves out of the nominal domain, into the VP domain or further up, we get the floating/stranded NC construction, as shown in (25b).

(25)   a.   b.
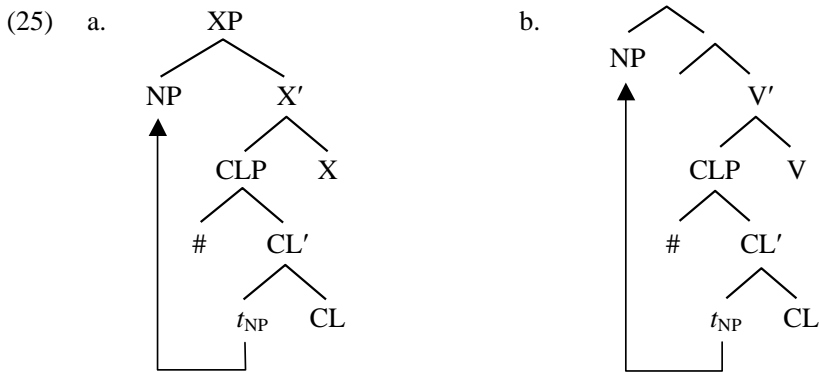
With this idea in mind, let us consider the examples in (26), which, like our earlier examples in (6), contain the NC and the universal quantifier *subete*. But, this time, the NC and *subete* both occur postnominally, and only the order in (26b) is allowed. Given our earlier discussion based on (7), we can conclude that, as far as the postnominal domain is concerned, the element that occurs to the right takes in its scope what occurs to its left. (26a) is ungrammatical because the universal quantifier is within the scope of the numeral, as illustrated in (27a). (26b) is fine because the universal quantifier is not in the scope of the numeral, as shown in (27b).

(26)   a. *taroo-wa   gyooza   **subete**   **go-ko**-o   tabe-ta.   (*N ∀ NC)
           Taro-TOP   dumpling   ∀   5-CL-ACC   eat-PAST

       'Taro ate all (of the) five dumplings.'

       b. taroo-wa   gyooza   **go-ko**   **subete**-o   tabe-ta.   (N NC ∀)
          Taro-TOP   dumpling   5-CL   ∀-ACC   eat-PAST

(27) a. *XP
```
        *XP
       /  \
      NP   X′
          /  \
        CLP   X
        /  \
       #    CL′
           /  \
          ∀P   CL
         /  \
       tNP   ∀
```

b. ∀P
```
         ∀P
        /  \
       XP   ∀
      /  \
     NP   X′
         /  \
       CLP   X
       /  \
      #    CL′
          /  \
        tNP   CL
```
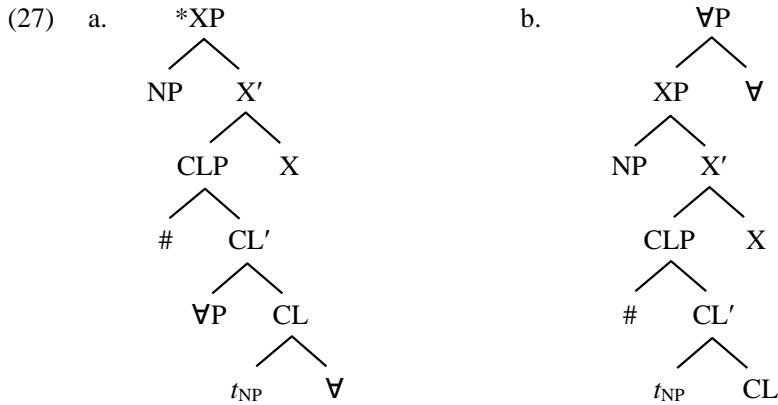
Let us now turn to some related cases where classifiers and/or *subete* are stranded.[6] In (28a) and (28b), the adverbial phrase *sono toki* 'that time' is inserted in such a way to separate *go-ko* '5-CL' and *subete* '∀', respectively, from the rest of the object noun phrase. The contrast in acceptability between the two examples mirrors the word order restriction that we witnessed in (26). The same remark applies to (29), where the noun (phrase) *gyooza* 'dumpling' is separated from *go-ko* '5-CL' and *subete* '∀' by the adverbial phrase.

(28) a. *taroo-ga   gyooza   **subete**-o   sono toki **go-ko**   tabe-ta   (koto)
           Taro-NOM   dumpling ∀-ACC   that   time   5-CL   eat-PAST   fact
           (*N ∀ NC)

'(the fact that) Taro ate all of the five dumplings at that time'

b. taroo-ga   gyooza   **go-ko**-o   sono toki **subete** tabe-ta   (koto)
           Taro-NOM   dumpling 5-CL-ACC   that   time   ∀   eat-PAST   fact
           (N NC ∀)

'(the fact that) Taro ate all of the five dumplings at that time'

(29) a. *taroo-ga   gyooza-o   sono toki **subete** **go-ko**   tabe-ta   (koto)
           Taro-NOM   dumpling-ACC   that   time   ∀   5-CL   eat-PAST   fact
           (*N ∀ NC)

'(the fact that) Taro ate all of the five dumplings at that time.'

b. taroo-ga   gyooza-o   sono toki **go-ko**   **subete** tabe-ta   (koto)
           Taro-NOM   dumpling-ACC   that   time   5-CL   ∀   eat-PAST   fact
           (N NC ∀)

'(the fact that) Taro ate all of the five dumplings at that time.'

This is quite suggestive that examples such as (28b) and (29b) involve stranding. I will thus explore the possibility that such examples are derived from a structure like the one in (27b)

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[6] See Kawashima (1998) for related data and discussion.

(except that its subpart moves out of the nominal domain). To be more specific, if it is just the NP that moves out of the nominal domain, we will get the word order in (29b). If XP, a larger chunk, moves out of the nominal domain, we can derive (28b). Crucially, there is no way to yield (28a) or (29a) from the structure in (27b). For example, *gyooza* 'dumpling' and *subete* '∀' do not form a constituent to the exclusion of *go-ko* '5-CL'. Also, *subete* '∀' and *go-ko* '5-CL' cannot form a unit in this order. In what follows, I would like to focus on data like (29b), where NP is separated from NC + *subete*.

It is worth introducing Cirillo's (2010) discussion of examples corresponding to (29b) in Dutch, Romanian, and Italian. In the Dutch example given in (30b), *all drie* 'all three' modifies the subject *de studenten* 'the students'. Following Cirillo, I will refer to this type of construction as the "universal numeric quantifier" (UNQ) construction. All the Dutch examples below are taken from his work.[7]

(30) a. Alle drie   de studenten hebben het boek gelezen.
        all   three the students   have   the book read

     b. De studenten hebben alle drie   het boek gelezen.
        the students   have   all   three the book read

Cirillo (2010) points out that that the stranded UNQ is clearly not adverbial. When the universal quantifier in Dutch is stranded on its own, it may (or it often does) take the adverbial form, as shown in (31b). But it cannot appear in the adverbial form in the UNQ construction, as shown in (32b). Once again, this is a good indication that such examples are derived via stranding.

(31) a. Al de studenten hebben het boek gelezen.
        all the students   have   the book read

     b. De studenten hebben allen / allemaal   het boek gelezen.
        the students   have   all   / all (adv.) the book read

(32) a. Alle drie de studenten hebben het boek gelezen.
        all   three the students   have   the book read

     b. De studenten hebben alle / *allemaal   drie   het boek gelezen.
        the students   have   all   / all (adv.) three the book read

To this we can add evidence from Japanese that the floating UNQ is not a base-generated complex quantifying expression of the kind shown in (33a) for English, which has often been presented in the relevant literature as evidence against the stranding view. In particular, I

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[7] Although I accept Cirillo's (2010) conclusion that the UNQ construction is derived via stranding, there may be some questions about the specifics of his analysis, in particular, his claim that the numeral and the universal are base-generated as a complex head.

show below that examples like (29b) are not derived in the manner shown in (33b), with the ellipsis of the pronominal part of a base-generated, appositive-like nominal.

(33) a.   The students have all three of them passed the exam.

   b.   gyooza-o   taroo-ga   ~~sore-ra~~ **go-ko**   **subete**   tabe-ta   (koto)
         dumpling-ACC   Taro-NOM   them   5-CL   ∀   eat-PAST   fact

       '(the fact that) Taro ate the dumplings, all five of them'

The crucial data is (34). As shown in (34a), when NP, numeral, and *subete* are together, it is possible to insert *-no* between them, e.g., between the NC and *subete*. We could analyze such examples as instances of a partitive construction, with the meaning 'all of the five dumplings.' In the context of stranding, however, insertion of *-no* is impossible, as shown in (34b). This shows that (29b) does not contain a base-generated, appositive-like NP.

(34) a.   taroo-ga   gyooza   **go-ko**(-no)   **subete**-o   tabe-ta   (koto).
         Taro-NOM   dumpling   5-CL   -GEN   ∀-ACC   eat-PAST   fact

       '(the fact that) Taro ate all five of the dumplings'

   b.   taroo-ga   gyooza-o   sono   toki   **go-ko**(*-no)   **subete**   tabe-ta
         Taro-NOM   dumpling-ACC   that   time   5-CL   -GEN   ∀   eat-PAST
         (koto)
          fact

This is a good indication that examples like (29b) are derived via stranding. Consider (35) in this light. Our discussion indicates that stranding (i.e., NP movement out of the nominal domain) is possible in (35a), but not in (35b). But why does the presence of *-no* make such a difference? Several possibilities come to mind. For example, comparing the two structures in (35), we see that NP is more deeply embedded in (35b), due to the presence of an extra projection, PP. This might have something to do with the contrast between the two. Alternatively, extraction may be impossible because of Last Resort. Suppose that *-no* is a postposition, assigning Case to its CLP complement. Now, CLP needs Case precisely because it is an extended projection of NP. If NP-movement is motivated for Case reasons (as Huang and Ochi (2011) speculate), then there should be no motivation for NP to move out of the nominal domain, and by economy reasoning, it cannot move out.

(35)   a.   b.
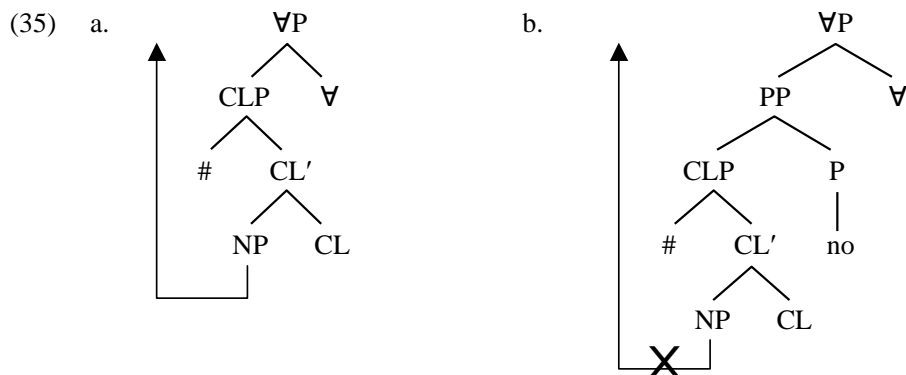
4. Ellipsis

The general picture laid out so far has implications for nominal-internal ellipsis paradigms. As discussed by Saito et al. (2008) and Tsai (2011), the NC construction in Chinese allows nominal-internal ellipsis (by which I mean nominal ellipsis to the exclusion of the NC part). In the following example, *shu* 'book' in the second clause is missing.

(36)   Suiran Zhangsan mai-le   [san-ben shu],   dan Lisi mai-le   [wu-ben s̶h̶u̶]
       though Zhangsan buy-PERF 3-CL   book   but Lisi buy-PERF 5-CL   book

       '*Lit*. Zhangsan bought three books, but Lisi bought five.'

As for Japanese, the postnominal NC does allow nominal-internal ellipsis, as shown in (37) (see Takahashi 2008). The Chinese NC construction and the postnominal NC constructions in Japanese thus behave on a par in this respect.

(37)   busshu-wa [jibun-ni   kansuru hon] ni-satsu-o   yonda.
       Bush-TOP self-DAT related   book 2-CL-ACC   read
       obama-wa   *e* 3-satsu-o   yonda.
       Obama-TOP   3-CL-ACC   read

       'Bush read two books about himself.   Obama read three e.'   (√ sloppy)

The prenominal NC nominal in Japanese, on the other hand, does not allow ellipsis, as discussed extensively by Saito et al. (2008).

(38)* taroo-wa [san-satsu-no   hon] -o   katta   ga,   hanako-wa
       Taro-TOP 3-CL-GEN   book-ACC   bought though   Hanako-TOP
       [go-satsu-no   h̶o̶n̶]-o   katta.
        5-CL-GEN   book-ACC bought

       'Taro bought three books, but Hanako bought five.'

One could say that this fact follows from the postulated structure in (2), according to which the prenominal NC is an NP-adjunct. For concreteness, let us adopt an LF copying approach
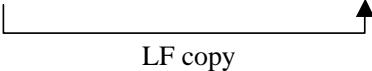
to nominal ellipsis (see Saito 2007). On the assumption that a syntactic operation can affect a maximal projection or a head, but not a segment of a projection, (38) would not be derivable because a syntactic operation cannot copy the object noun in the first conjunct in such a way to exclude *san-satsu-no* '3-CL-GEN' from being copied along with the lower segment of the object noun phrase.

But things are not so simple. Consider the following example from Watanabe (2010).

(39)   taroo-wa   san-satsu-no   hon-o   katta   ga,   hanako-wa   go-satsu
       Taro-TOP 3-CL-GEN   book-ACC bought though   Hanako-TOP 5-CL
       katta.
       bought

       'Taro bought three books, but Hanako bought five.'

The first clause contains the prenominal NC, and the nominal *hon* 'book' is missing from the second clause. One potential source of the latter clause is the stranded NC construction, with the deletion of NP (i.e., argument drop).

(40)   taroo-wa [$_{NP}$ san-satsu-no [$_{NP}$ hon]]-o katta ga, hanako-wa [$_{NP}$ hon]-o go-satsu katta

<div align="center">LF copy</div>

Watanabe rejects this line of analysis on the basis of the familiar parallelism requirement imposed on ellipsis. But whether or not parallelism is violated in this case needs to be carefully examined. Note that ellipsis is in general sensitive to the presence or absence of an adjunct element associated with the elliptical site. Consider the following example.

(41)   taroo-wa jiroo-ga   kaita   hon-o   katta   ga,   hanako-wa
       Taro-TOP Jiro-NOM   wrote book-ACC bought though   Hanako-TOP
       kawa-nak-atta.
       buy-NEG-PAST

       '*Lit*. Taro bought the book(s) that Jiro wrote, but Hanako didn't buy.'

The most salient reading of the second clause is that Hanako did not buy the book(s) that Jiro wrote. Crucially, it does not mean that Hanako did not buy a book/books, which indicates that a relative clause cannot be ignored upon copying the object of the first clause. The following VP-ellipsis example, taken from Oku (1998), points to the same conclusion.

(42)   John washed a car carefully, but Mary didn't.

The second clause means that Mary washed a car but not in a careful manner, according to Oku (1998). Again, it does not mean that Mary did not wash a car. Thus, a VP-level adverb must be included in the interpretation of the elided VP. Seen in this light, (40) does not seem to be an adequate analysis of (39).

According to Watanabe, (39) is instead derived from the prenominal NC source, as schematically shown below. The idea is that *-no* of *san-satsu-no* '3-CL-GEN' is a linker, inserted by a *-no* insertion rule of the kind discussed by Kitagawa and Ross (1982). Crucially, Watanabe argues that this insertion rule is sensitive to the overt realization of the head noun: it is inoperative when the head noun is elided.

(43)　… hanako-wa　　[go-satsu　~~hon] o~~　　　katta
　　　… Hanako-TOP　　5-CL　　　book-ACC　　bought

This is an interesting argument. Nevertheless, there is some indication that examples like (39) are in fact derived from the stranded NC construction, not from the prenominal NC construction. According to Nakanishi (2007), the stranded NC typically has the forced distributive reading, which is clear when a predicate like *koros-* 'kill' is employed.

(44)　a.　**san-nin**-no　otoko-ga　　taroo-o　　koroshita.　　　(prenominal NC)
　　　　　3-CL-GEN　　man-NOM　Taro-ACC　killed

　　　　　'Three men killed Taro.'

　　　b.　otoko　**san-nin**-ga　　taroo-o　　koroshita.　　　(postnominal NC)
　　　　　man　　3-CL-NOM　Taro-ACC　killed

　　　c. *otoko-ga　**san-nin**　taroo-o　　　koroshita.　　　(stranded NC)
　　　　　man-NOM　3-CL　　Taro-ACC　killed

Now, let us consider the following example using *koros-* 'kill', which, like (39), contains a prenominal NC in the first clause and lacks an overt nominal associated with the NC in the second clause. The unacceptability of this example indicates that such examples necessarily come from the stranded NC construction. If such an example could come from the prenominal NC source, it would be unclear why it is unacceptable.

(45)　kyonen　　san-nin-no　otoko-ga　　jiroo-o　　koroshita.
　　　last year　3-CL-GEN　man-NOM　Jiro-ACC　killed
　　*kotoshi　　go-nin　taroo-o　　　koroshita.
　　　this year　5-CL　　Taro-ACC　killed

　　　'Last year three men killed Jiro.This year, five men killed Taro.'

The example is fine without ellipsis.

(46)　kyonen　　san-nin-no　otoko-ga　　jiroo-o　　koroshita.
　　　last year　3-CL-GEN　man-NOM　Jiro-ACC　killed
　　　kotoshi　　go-nin-no　　otoko-ga　taroo-o　　koroshita.
　　　this year　5-CL-GEN　man-NOM　Taro-ACC　killed

　　　'Last year three men killed Jiro.This year, five men killed Taro.'

Thus, I conclude that (39) involves the stranded NC, not the prenominal NC.

But, then, we need to explain the difference between (39) (as analyzed in the manner shown in (40)) on the one hand and (41) and (42) on the other. Recall that the (im)possible interpretations of the latter examples indicate that an adjunct element modifying the target of ellipsis cannot be ignored for the purpose of LF copying operations, be it NP-ellipsis or VP-ellipsis. But this is exactly what we find in (40), as we are assuming with Saito et al. (2008) and Miyamoto (2009) that the prenominal NC is an adjunct to NP.

In this context, I would like to introduce Oku's (1998) subset copy principle, which basically states that a (proper) subset of the antecedent can be copied and supplied as the content of the elided material under LF-copying operations. Among other things, Oku's proposal is intended to deal with what Fiengo and May (1994) calls 'vehicle change' phenomenon, exemplified by (47) below.

(47)   Mary will admire *John*, and *he* thinks Susie will, too.

This example allows co-reference of *John* and *he*. But, as noted by Fiengo and May, if the antecedent VP is copied into the second clause "as is", as shown in (48a) below, it should lead to a Condition C violation. Following Fiengo and May, Oku argues that (47) has (48b) as well as (48a) as a possible LF representation. Of course, there are no binding condition violations in (48b).

(48)   a.   Mary will [VP admire *John*], and *he* thinks Susie will [VP admire *John*], too.
        b.   Mary will [VP admire *John*], and *he* thinks Susie will [VP admire *him*], too.

This is made possible by the subset copy principle, and by the idea that a pronoun is merely a collection of φ-features while an R-expression contains φ-features and some additional features (relevant for their intrinsic referential property) (see Burzio 1991): simply put, the set of features for the pronoun *he* is a subset of the feature set for R-expressions like *John*.

Now, Oku's subset copy principle should allow the representation in (40). The LF copying operation should be able to copy the segment of the object NP, *hon* 'book', ignoring the upper segment, i.e., *san-satsu-no* '3-CL-GEN'. Of course, the same reasoning should apply to (41) and (42). But I suspect that the parallelism constraint would interfere with ignoring the adjunct in such cases. Note that (38) can still be ruled out under this line of analysis. There is no attachment site for the NP-adjunct *go-satsu-no* '5-CL-GEN' before a copying operation creates the object nominal in the second clause.

5.   Conclusion

To summarize, adopting Huang and Ochi's (2011) analysis, I have discussed three issues in connection with classifiers inside and outside the nominal domain. First, the contrast between Chinese and Japanese with respect to the (in)compatibility of *-men*/*-tachi* and the

classifier can receive a simple, syntactic account. Second, there is a good indication that the floating universal numeric quantifier involves stranding. Finally, some asymmetries in the domain of ellipsis follow rather naturally from the postulated structures for Japanese/Chinese NC constructions.

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CASE CHECKING/VALUATION IN JAPANESE: MOVE, AGREE OR MERGE?*

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1. Introduction

Case marking in Japanese has been investigated within the generative framework since the 1960's, and various proposals have been made, reflecting the development of syntactic theory. Over a decade, Chomsky (2000, 2008) has been pursuing an approach to associate Case with φ-feature agreement. According to this approach, nominative, for example, obtains as in (1).

(1)   T {φ : __ } [… DP {φ, Case: __} …]
        Agree ... Value

T, with unvalued φ-features, probes and enters into Agree relation with a DP with an unvalued Case feature. As a result of this Agree relation, T obtains the values for its φ-features from the DP and values the Case of the DP as nominative. This approach, too, has been applied to Japanese with some fruitful results in works such as Ura (1999), Hiraiwa (2001a) and Takahashi (2010).

Particularly noteworthy in the light of this approach is the fact that PPs are Case marked extensively in Japanese. For example, (1) is an example of a "tough-sentence" with a nominative PP subject.

(2)   Koko-kara-ga   huzi-san-ni   nobori-yasu-i
        here-from-NOM Mt. Fuji-DAT climb-easy-Pres

        'It is easy to climb Mt. Fuji from here.'

PPs are required to have genitive Case within a projection of N, as the examples in (3) show.

---

(3) a. Taroo-no   oya-e-no   izon
         Taroo-GEN   parents-to-GEN dependence

     'Taroo's dependence on his parents'

     b. ziyuu-kara-no   toohi
         freedom-from-GEN escape

     'escape from freedom'

As PPs, as opposed to DPs, apparently lack φ-features, it is not obvious how Chomsky's approach can be extended to them.

It should be noted that whether the Case markers on PPs are indeed Case in the usual sense has been controversial. As (4) shows, any DP or PP in a projection of N (and D) accompanies *no* whether it is an argument or an adjunct.

(4) Hanako-no   kinoo-no   kaze-de-no   kesseki
     Hanako-GEN yesterday-GEN cold-with-GEN absence

     'Hanako's absence yesterday due to a cold'

Okutsu (1974) proposes that the *no* attached to PPs and adjunct DPs is the prenominal form of the copula *da* as opposed to the genitive *no*. Watanabe (2010) assumes a similar distinction, calling the former *no* a 'linker'. On the other hand, An (2009) discusses the Korean counterpart of *no*, *uy*, and proposes that it is a kind of a prenominal inflection in all contexts, and consequently, that Korean does not have genitive Case in the usual sense. The basic idea is that the *uy/no* on PPs and adjunct DPs should be accounted for as a prenominal marker, and once this is done, the account should automatically extend to argument DPs as well.

In this paper, I basically follow An's (2009) approach, although I continue to call *no* the genitive Case since I think the issue is merely terminological. This is after all the traditional analysis: Bedell (1972) presents an analysis where *no* is inserted after any prenominal DP and PP. As this approach does not differentiate *no* on argument DPs from that on PPs, it implies that genitive in Japanese is independent of φ-feature agreement. In this paper, I extend An's proposal and suggest that Case in Japanese is in general part of the operation, Merge, instead. Just as Case in English is required for Agree and is valued through Agree, I suggest that Case in Japanese is required for Merge and is valued through Merge. For *no*, for example, I propose that Case is required on DPs and PPs for merger with a nominal projection, and is valued as genitive through merger with N-D.

In the following section, I briefly discuss the distribution and interpretation of nominative objects and show that it is desirable to seek an alternative to the Agree-based analysis for this case also. In Section 3, I introduce the Merge-based analysis and illustrate it with some concrete examples. In Section 4, I discuss some consequences of the analysis. I first show that the analysis allows a rather straightforward account of the distribution of

genitive arguments in prenominal sentential modifiers. Then, I argue that it opens up a way to apply Kayne's (1994) LCA to Japanese and derive the head-finality of its phrase structure. Section 5 concludes the paper.

2. A Little Historical Background on the Analysis of Nominative Objects

In Japanese, the object is normally in accusative as in (5a), but carries nominative Case when the predicate is stative. (5b) is a representative example.[1]

(5)   a.   Taroo-ga   wani-o/*-ga   tabe-ta (koto)
              Taroo-NOM alligator-ACC/-NOM eat-Past fact

             '(the fact that) Taroo ate alligator meat'

        b.   Hanako-ni/-ga   bakudai-na syakkin-ga/*-o   ar-u   (koto)
              Hanako-DAT/-NOM immense   debt-NOM/-ACC have-Pres fact

             '(the fact that) Hanako has a huge debt'

        c.   Taroo-ga   wani-o/-ga   tabe-rare-ru (koto)
              Taroo-NOM alligator-ACC/-NOM eat-can-Pres fact

             '(the fact that) Taroo can eat alligator meat'

As the predicate in (5c) consists of the non-stative *tabe* 'eat' and the stative verbal suffix *(rar)e* 'can', the object can be in either accusative or nominative. The distribution and interpretation of nominative objects as in (5b–c) have been a central topic of research in Japanese syntax, especially in the past twenty years. In this section, I first discuss the movement analysis of Tada (1992) and Koizumi (1999), and then go over Ura's (1999) Agree-based analysis. Both approaches have provided much insight into the phenomenon, but I argue that neither of them is satisfactory.

2.1. Tada and Koizumi's Overt Movement Analysis

Tada's (1992) discussion of the contrast in (6), originally observed in Sano (1985), has renewed interest in Japanese nominative objects among syntacticians.
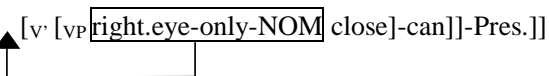
(6)   a.   Kiyomi-wa   migime-dake-o   tumur-e-ru (can > only)
              Kiyomi-TOP right.eye-only-ACC close-can-Pres

             'Kiyomi can wink with her right eye.'

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[1] Some predicates allow the subject to be in dative when the object is in nominative. *Ar* 'be, have' in (5b) is one of them.

    b.   Kiyomi-wa   migime-dake-ga   tumur-e-ru (only > can)
         Kiyomi-TOP right.eye-only-NOM close-can-Pres

        'It is only her right eye that Kiyomi can close.'

It had been assumed that Case on the object has little effect, if any, on interpretation, but these examples indicate that nominative objects take wider scope than accusative objects. The accusative object in (6a) scopes under the higher predicate *e* 'can' but the nominative object in (6b) scopes over it.[2] Tada proposed that this is because accusative is checked within the projection of the verb *tumur* 'close' while the nominative is licensed within the projection of the stative verbal affix *e* 'can'. According to his analysis, the nominative object in (6b) moves as in (7) and hence, takes wide scope over *e* 'can'.[3]
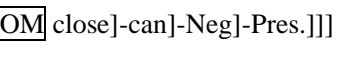
(7)   [TP Kiyomi-wa [T' [VP [V' [VP right.eye-only-NOM close]-can]]-Pres.]]

Koizumi (1998), on the other hand, observes that nominative objects take yet higher scope than predicted by Tada's analysis. He shows that nominative objects even scope over negation as in (8).

(8)   Kiyomi-ga   migime-dake-ga   tumur-e-na-i   (koto) (only > not > can)
        Kiyomi-NOM right-eye-only-NOM close-can-Neg-Pres fact

        '(the fact that) it is only her right eye that Kiyomi cannot close'

He then proposes that nominative objects are licensed within the projection of T as in (9).

(9)   [TP Kiyomi-wa [T' [T' [NegP [VP [VP right.eye-only-NOM close]-can]-Neg]-Pres.]]]

Koizumi's analysis is attractive as it implies that nominative is licensed uniformly by T whether it is on the subject or on the object. However, it shares a problem with Tada's analysis, to which I now turn.

The problem is that the movement operation illustrated in (7) and (9) does not observe the locality expected of NP-movement.[4] Let us first consider the example of causative in (10) because the point can be best illustrated with this construction.

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[2] Nomura (2005) presents some examples in which nominative objects seem to scope under *e* 'can' and questions the Sano-Tada generalization. However, as the pattern in (6) is observed quite generally, I believe it reflects a hierarchical relation in phrase structure as Tada proposed. See Takahashi (2010) for an analysis based on the assumption that nominative objects can take narrow scope.

[3] Tada (1992) assumes the AGR-based Case theory and proposes that the nominative object moves to the Spec position of AGR projected over *e* 'can'. I present a simplified version of his analysis here.

[4] For a more detailed discussion on this point, see Saito (1982) and the references cited there.

(10)   Hanako$_i$-ga   [$_{vP}$ Taroo$_j$-ni   [$_{VP}$ zibun$_{i,j}$-no wani-o   tabe]]-sase-ta (koto)
         Hanako-NOM   Taroo-DAT   self-GEN alligator-ACC eat-make-Past fact

         '(the fact that) Hanako made Taroo eat her/his (pet) alligator'

It has been known since Kuroda (1965) that the causative morpheme *sase* takes a clausal complement. (10) confirms this. The causee *Taroo* can be the antecedent of the subject-oriented reflexive *zibun*, and hence, it should be the subject of the embedded clause. I assume that the clausal complement is a *v*P, following Murasugi and Hashimoto (2004). The hypothesis is further confirmed by the fact that the object cannot be passivized out of a causative complement as shown in (11).

(11) *wani-ga$_i$ Hanako-niyotte [$_{vP}$ Taroo$_j$-ni   [$_{VP}$ t_i tabe]]-sase-rare-ta   (koto)
         alligator-NOM Hanako-by   Taroo-DAT   eat-make-Passive-Past fact

         '*Lit*. (the fact that) the alligator was made by Hanako to be eaten by Taroo'

This is expected as the movement crosses the embedded subject *Taroo* in violation of minimality.

     Let us return to nominative objects with this background. As shown in (12), the object in the causative construction can be in nominative when the potential suffix *(rar)e* 'can' is attached to the causative verb.

(12)   Hanako-ga   [$_{vP}$ Taroo-ni   [$_{VP}$ wani-o/-ga   tabe]]-sase-rare-ru (koto)
         Hanako-NOM   Taroo-DAT   alligator-ACC/-NOM eat-make-can-Past fact

         '(the fact that) Hanako can make Taroo eat alligator meat'

This is totally unexpected under the movement analysis of nominative objects. According to Koizumi's (1998) analysis, for example, the nominative object in (12) must move to the inner Spec of T to have its Case licensed. But then, the movement should violate minimality exactly as in the case of (11). The same problem arises with Tada's analysis because the nominative object must move across the embedded subject in order to land within the projection of *(rar)e* 'can'.

     Koizumi (1998), as noted above, demonstrated that nominative objects take scope over negation and argued that this is because their Case is licensed by T. The discussion above, however, indicates that they do not move to a Spec position of T. These considerations naturally lead to the hypothesis that T values nominative through the operation Agree. In the next subsection, I consider Ura's (1999) Agree-based analysis.

2.2. Ura's Analysis with Covert Feature Movement/Agree

     To my knowledge, Ura (1999) is one of the first works that propose an analysis of

nominative objects in terms of Agree.[5] He first argues against Koizumi's (1998) movement analysis based on examples of the following kind:

(13) Hanako$_i$-ni/-ga   Taroo$_j$-ga   zibun$_{i,*j}$-no ie-de   sikar-e-ru   (koto)
      Hanako-DAT/-NOM Taroo-NOM self-GEN   house-at scold-can-Pres fact

      '(the fact that) Hanako can scold Taroo at her/*his house'

This example shows that a nominative object does not qualify as the antecedent for the subject-oriented *zibun* 'self'. However, Koizumi's analysis predicts that it should if subject is defined as a phrase in TP Spec. Ura concludes then that nominative objects do not move to a position within the projection of T.[6]

   Ura, then, goes on to propose that T checks the Case feature of nominative objects through Agree. This predicts that nominative objects stay in situ, and hence, readily accounts for (12), where a nominative object appears in the complement of a causative verb. But a problem remains with the scope property of nominative objects. Koizumi's crucial example in (8) is repeated below as (14).

(14) Kiyomi-ga   migime-dake-ga   tumur-e-na-i   (koto) (only > not > can)
      Kiyomi-NOM right-eye-only-NOM close-can-Neg-Pres fact

      '(the fact that) it is only her right eye that Kiyomi cannot close'

For this, Ura suggests that the Agree relation yields the wide scope of the object. As T licenses the nominative Case on the object, the object takes scope at T.

   However, it is shown in Lasnik and Saito (1991) that Agree relation does not affect scope. The examples in (15) demonstrate this.

(15) a. Fewer than five knights$_i$ [$_{VP}$ appeared t_i at the gate] every day
          (fewer than five > every, every > fewer than five)

      b. There [$_{VP}$ appeared fewer than five knights at the gate] every day
          (every > fewer than five)

In (15a), *fewer than five knights* moves from the object position to TP Spec. Thus, the example exhibits a scope ambiguity between this DP and *every day*. In (15b), on the other hand, T enters into Agree relation with the DP, but the DP stays in situ. In this case, it cannot scope over *every day*. This shows that Agree does not suffice to account for the wide scope

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[5] His analysis appeals to covert feature movement. But it is equivalent to Agree as covert feature movement was in effect reanalyzed as Agree in Chomsky (2000).

[6] Note that examples like (10) indicate that the antecedent of *zibun* is not limited to phrases in TP Spec. Hence, it is necessary to reexamine what constitutes "subjects" in the relevant sense to see if this argument goes through. See Saito (2011) for relevant discussion.

property of Japanese nominative objects.

3. A Preliminary Merge-Based Analysis of Japanese Case

It was argued in the preceding section that neither movement nor Agree successfully captures the distribution and interpretation of nominative objects. In this section, I suggest an alternative Merge-based analysis. In Section 3.1, I motivate the general approach. Then, in Section 3.2, I present the details of the analysis with some concrete examples.

3.1. What is Japanese Case for?

Chomsky (2000) proposes that Case is a reflex of ϕ-feature agreement. Case is required on a DP to participate in agreement and is checked through the agreement. This is embedded in a system with feature-inheritance in Chomsky (2008). It is proposed there that phase heads are the locus of unvalued/uninterpretable features. Thus, C, for example, carries ϕ-features and the EPP, and transmits them to T as illustrated in (16).

(16)   [C{ϕ, EPP} [$_{TP}$ DP [T [$_{vP}$ DP{Case} ….

T, then, probes a DP with unvalued Case feature and enters into Agree relation with the DP. The ϕ-features on T are valued by the DP and the Case feature on the DP is valued as nominative by T through this Agree relation. Finally, the EPP on T raises the DP to its Spec. Thus, Case is required for ϕ-feature agreement and is valued through ϕ-feature agreement.

However, as noted at the outset of this paper, Case is observed on PPs extensively in Japanese. The relevant examples in (2) and (3a) are repeated below as (17a–b).

(17)   a.   Koko-kara-ga   huzi-san-ni   nobori-yasu-i
            here-from-NOM Mt. Fuji-DAT climb-easy-Pres

            'It is easy to climb Mt. Fuji from here.'

        b.   Taroo-no   oya-e-no   izon
            Taroo-GEN parents-to-GEN dependence

            'Taroo's dependence on his parents'

The nominative Case in (17a) and the genitive Case on PP in (17b) cannot be a reflex of ϕ-feature agreement as PPs do not carry ϕ-features. Then, what is Japanese Case for if it is not part of ϕ-feature agreement?

Since the only operations in Minimalist syntax are Agree and Merge, Merge is a plausible candidate. That is, if Case is not a precondition for a phrase to participate in Agree, it is likely to be required of a phrase to participate in Merge. For genitive Case, this is in fact a restatement of An's (2009) idea noted above that genitive is a kind of prenominal inflection.

The initial hypothesis can be stated as in (18).

(18) a. Case is required on DPs and PPs for merger with N and D.
      b. Case is required on argument DPs for merger with V and A.
      c. Case is required on argument DPs and PPs for merger with *v*.

(18b–c) stipulate that an argument PP must have a Case in a sentence only when it is a subject as in (17a).

If Case in Japanese is required for Merge, it seems equally plausible that it is valued by this operation. Let us then hypothesize that Case is valued through Merge as in (19).

(19) a. Case is valued as nominative by merger with T-C.
      b. Case is valued as accusative by merger with (transitive) V-*v*.
      c. Case is valued as genitive by merger with N-D.

If the locus of nominative is C and it is inherited by T, this yields a more or less standard derivation for examples like (20a).

(20) a. Taroo-ga   hasir-u
          Taroo-NOM run-Pres

          'Taroo runs.'

      b. $[_{CP} [_{TP} \text{Taroo-Case}_i [_{T'} [_{vP} t_i [[_{VP} \text{hasir }] v]] \text{T}]] \text{C}]$

As *Taroo* carries Case, it can be merged at *v*P Spec for thematic interpretation. The Case, however, is not valued at this position. The DP then must move and merge at TP Spec for the Case to be valued nominative.

If this mechanism is assumed as is, it leads to a notational variant of Koizumi's (1998) analysis for nominative objects. They must carry Case to be merged at the object position for thematic interpretation. If the V-*v* in the relevant cases lacks the ability to value accusative, they must move to TP Spec to have their Case valued as nominative. But it was shown in the preceding section that they do not move to TP Spec. It seems then that we have a paradox. Nominative objects must be merged with T but they do not move to TP Spec. In the following section, I suggest a way out of this problem, developing Shimada (2007) and Tonoike's (2009) hypothesis on phrase structure building.

3.2. Phrase Structure Building with Excorporation

Shimada (2007) and Tonoike (2009) propose an original way to derive phrase structure. For clauses, they assume that the derivation starts with a complex of heads, C-T-*v*-V. If the verb is transitive, the object merges with this complex as in the first step of (21).

(21)   C-T-*v*-V ①→{C-T-*v*-V, DP₁} ②→{C-T-*v*, {V, DP₁}} ③→{DP₂, {C-T-*v*, {V, DP₁}}}
        ④→ {C-T, {DP₂, {*v*, {V, DP₁}}}} ⑤→{DP₂, {C-T, {DP₂, {*v*, {V, DP₁}}}}} ⑥→
        {C, {DP₂, {C-T, {DP₂, {*v*, {V, DP₁}}}}}}

Then, C-T-*v* excorporates as in step 2, creating a *v*P. This *v*P merges with the subject DP in step 3, and C-T exporporates in step 4 to create a TP. The subject is internally merged with this TP in step 5. The final product after the excorporation of C in step 6 is the CP structure.

Both Shimada and Tonoike propose this derivation to maintain the extension condition in the strict form. Shimada argues that it allows head movement to observe the condition. Tonoike, on the other hand, points out that the derivation of Chomsky (2008) illustrated in (16) forces a counter-cyclic movement of the subject to TP Spec. This problem does not arise in the derivation in (21).

The Shimada–Tonoike proposal is of particular interest in the present context because it allows a nominative object to merge with T without moving to TP Spec. Recall the problem noted in the preceding subsection: nominative is valued through merger with T but nominative objects do not raise to TP Spec. In step 1 of (21), the object is directly merged with a complex that includes T as well as V. In the remainder of this section, I adapt their main idea and suggest a way to account for the distributions of Cases in Japanese.

First, I suggest that a head complex is formed initially because a derivation starts with a phase head and proceeds to satisfy selectional requirements. Let us take (22) to illustrate how this works.

(22)   Hanako-ga   Taroo-o   sikat-ta
        Hanako-NOM Taroo-ACC scold-Past

        'Hanako scolded Taroo.'

As *v*P is the smallest phase in the example, the derivation starts with *v*. It first merges with V as in (23a) because it selects for a V.

(23)   a. {<u>V, *v*</u>} (accusative)
        b. {DP₁-<u>ACC</u>, {<u>V, *v*</u>}}
        c. {{DP₁-<u>ACC</u>, V}, *v*}
        d. {DP₂-Case, {{DP₁-<u>ACC</u>, V}, *v*}}
        e. {<u>T, C</u>} (nominative)
        f. {{DP₂-Case, {{DP₁-<u>ACC</u>, V}, *v*}}, {<u>T, C</u>}}
        g. {DP₂-<u>NOM</u>, {{DP₂-Case, {{DP₁-<u>ACC</u>, V}, *v*}}, {<u>T, C</u>}}}
        h. {{DP₂-<u>NOM</u>, {{DP₂-Case, {{DP₁-<u>ACC</u>, V}, *v*}}, T}}, C}

The object DP is merged in (23b) to satisfy the selectional requirement of V. As the merger is to V-*v*, the Case on the DP is valued as accusative. Then, *v* excorporates in (23c) to create a *v*P as it should have VP as its complement. The subject DP is merged with this *v*P and

satisfies the selectional requirement of *v* in (23d).

The derivation moves on to the next phase in (23e). The phase head C selects T, and hence the T-C complex is formed. *v*P is merged with this complex in (23f) because of the selectional property of T. At this stage, the Case on the subject is still unvalued. So the subject DP internally merges with {*v*P, {T, C}} as in (23g) so that the Case is valued as nominative. The assumption here is that the Case on XP is valued if XP is merged with a syntactic object that contains the value assigner. In the case of (23g), this in effect means that T-C values nominative on XP in its Spec. Finally, C excorporates to complete the derivation in (23h).

The in-situ property of nominative objects follows with one additional assumption: I assume, following Takahashi (2010), that *v* is a phase head if and only if it values accusative. Let us consider (24) for illustration.

(24) Hanako-ga   rosiago-ga   wakar-u   (koto)
      Hanako-NOM Russian-NOM understand-Pres fact

      '(the fact that) Hanako understands Russian'

As *v* in this example does not value accusative, it is not a phase head by assumption. Then, the derivation starts with the only phase head C as in (25a).

(25)   a.   {<u>T, C</u>} (nominative)
       b.   {*v*, {<u>T, C</u>}}
       c.   {V, {*v*, {<u>T, C</u>}}}
       d.   {DP$_1$-<u>NOM</u>, {V, {*v*, {<u>T, C</u>}}}}
       e.   {{DP$_1$-<u>NOM</u>, V}, {*v*, {<u>T, C</u>}}}
       f.   {DP$_2$-<u>NOM</u>, {{DP$_1$-<u>NOM</u>, V}, {*v*, {<u>T, C</u>}}}}
       g.   {{DP$_2$-<u>NOM</u>, {{DP$_1$-<u>NOM</u>, V}, *v*}}, {<u>T, C</u>}}
       h.   {DP$_2$-<u>NOM</u>, {{DP$_2$-<u>NOM</u>, {{DP$_1$-<u>NOM</u>, V}, *v*}}, {<u>T, C</u>}}}
       i.   {{DP$_2$-<u>NOM</u>, {{DP$_2$-<u>NOM</u>, {{DP$_1$-<u>NOM</u>, V}, *v*}}, T}}, C}

The derivation proceeds as in (25b) and (25c) as T and *v* select *v* and V respectively. In (25d), the object is merged with this complex and the Case is valued as nominative simultaneously because the complex contains T-C. Then, *v*-T-C excorporates in (25e) to yield a *v*P. The external argument is merged with this *v*P in (25f), and its Case is valued as nominative. T-C excorporates in (25g), and I assume here that the subject is raised to TP Spec as in (25h) to satisfy the EPP requirement of T-C.[7] Finally, C excorporates to complete the derivation in (25i). Note that the object is merged at the thematic position and its Case is valued as nominative at this position by T-C. Thus, this analysis allows nominative objects to have their Cases valued by T-C without moving to TP Spec, a desirable result.

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[7] Whether this EPP-triggered raising applies is not important for the proposal made here. See Saito (2011) and the references cited there for discussion on EPP in Japanese.

The analysis readily extends to genitives. I use (26) to demonstrate this.

(26)   Taroo-no   yooroppa-e-no   ryokoo
        Taroo-GEN Europe-to-GEN trip

        'Taroo's trip to Europe'

The only phase head, I assume, is D. The derivation in (27) starts out with the merger of N and D as in (27a).

(27)   a. {<u>N, D</u>} (genitive)
        b. {PP-<u>GEN</u>, {<u>N, D</u>}}
        c. {DP-<u>GEN</u>, {PP-<u>GEN</u>, {<u>N, D</u>}}}
        d. {{DP-<u>GEN</u>, {PP-<u>GEN</u>, N}}, D}

Then, the PP and the subject DP are merged as in (27b) and (27c) respectively. Recall that both must have Case to be merged in this context as specified in (18a). And their Cases are both valued as genitive because of the presence of N-D in the syntactic objects they merge with. The derivation is completed with the excorporation of D in (27d).

The illustrations so far, I believe, made it clear how the proposed Merge-based analysis works. Instead of going over more examples to demonstrate its empirical coverage, I discuss a couple of consequences of the analysis in the next section.

4.   Some Consequences of the Merge-Based Analysis

I first consider the nominative/genitive alternation in prenominal sentential modifiers in Section 4.1 and demonstrate that the Merge-based analysis allows a straightforward analysis. Then, in Section 4.2, I return to the wide scope property of nominative objects and show that its Merge-based analysis opens up a new way to apply Kayne's (1994) LCA to Japanese.

4.1. The Nominative/Genitive Alternation

An alternation between nominative and genitive is observed in Japanese prenominal sentential modifiers as in (28).

(28)   Taroo-ga/-no   ongaku-ga/-no   kik-e-ru   basyo
        Taroo-NOM/-GEN music-NOM/-GEN listen-can-Pres place

        'a place where Taroo can isten to music'

As the predicate *kik-e-ru* 'listen-can-Pres' in the relative clause is stative, it is not surprising that the subject *Taroo* and the object *ongaku* 'music' can both appear in nominative. What is peculiar is that both can appear in genitive as well.

I assume here, following Maki and Uchibori (2008), that genitive is possible in this

context because of the presence of the relative head, or more precisely, N-D.[8] This implies that a relative clause does not constitute a phase as it does not block the relevant relation between the relative head and the genitive phrase(s) within the relative clause. This is assumed, for example, in Ochi (2001), which proposes that D licenses the genitive(s) through Agree.[9] It is also plausible in the light of Murasugi's (1991) proposal that Japanese relative clauses are TPs and not CPs. For example, they never contain relative pronouns or complementizers. Given the hypothesis entertained here that nominative is valued by T-C, Japanese relative clauses must be headed by C. I assume then that the C is "defective," probably the lowest C, the Subject head, in Rizzi's (1997) CP hierarchy. It is not a phase head but participates in the valuation of nominative.

Given these assumptions, the nominative/genitive alternation in (28) follows from the Merge-based analysis outlined in the preceding section. (29) is a slightly simplified derivation of the example that takes *kik-e* 'listen-can' as a simple stative verb.

(29) a. $\{\underline{\text{N, D}}\}$ (genitive)
    b. $\{C, \{\underline{\text{N, D}}\}\}$
    c. $\{\underline{T}, \{\underline{C}, \{\underline{\text{N, D}}\}\}\}$ (nominative)[10]
    d. $\{v, \{\underline{T}, \{\underline{C}, \{\underline{\text{N, D}}\}\}\}\}$
    e. $\{V, \{v, \{\underline{T}, \{\underline{C}, \{\underline{\text{N, D}}\}\}\}\}\}$
    f. $\{DP_1\text{-}\underline{\text{NOM/GEN}}, \{V, \{v, \{\underline{T}, \{\underline{C}, \{\underline{\text{N, D}}\}\}\}\}\}\}$
    g. $\{\{DP_1\text{-}\underline{\text{NOM/GEN}}, V\}, \{v, \{\underline{T}, \{\underline{C}, \{\underline{\text{N, D}}\}\}\}\}\}$
    h. $\{DP_2\text{-}\underline{\text{NOM/GEN}}, \{\{DP_1\text{-}\underline{\text{NOM/GEN}}, V\}, \{v, \{\underline{T}, \{\underline{C}, \{\underline{\text{N, D}}\}\}\}\}\}\}$
    i. $\{\{DP_2\text{-}\underline{\text{NOM/GEN}}, \{\{\alpha, V\}, v\}\}, \{\underline{T}, \{\underline{C}, \{\underline{\text{N, D}}\}\}\}\}$, $\alpha = DP_1\text{-}\underline{\text{NOM/GEN}}$
    j. $\{DP_2\text{-}\underline{\text{NOM/GEN}}, \{\{DP_2\text{-}\underline{\text{NOM/GEN}}, \{\{\alpha, V\}, v\}\}, \{\underline{T}, \{\underline{C}, \{\underline{\text{N, D}}\}\}\}\}\}$
    k. $\{\{DP_2\text{-}\underline{\text{NOM/GEN}}, \{\{DP_2\text{-}\underline{\text{NOM/GEN}}, \{\{\alpha, V\}, v\}\}, T\}\}, \{C, \{\underline{\text{N, D}}\}\}\}$
    l. $\{\{\{DP_2\text{-}\underline{\text{NOM/GEN}}, \{\{DP_2\text{-}\underline{\text{NOM/GEN}}, \{\{\alpha, V\}, v\}\}, T\}\}, C\}, \{\underline{\text{N, D}}\}\}$
    m. $\{\{\{\{DP_2\text{-}\underline{\text{NOM/GEN}}, \{\{DP_2\text{-}\underline{\text{NOM/GEN}}, \{\{\alpha, V\}, v\}\}, T\}\}, C\}, N\}, D\}$

The head complex V-*v*-T-C-N-D is formed in (29a–e). The object is merged in (29f), and its Case can be valued as nominative or genitive as the head complex contains T-C as well as N-D. *v*-T-C-N-D excorporates in (29g) and the subject DP is merged in (29h). Here too, the Case of the subject can be valued as nominative or genitive for the same reason. (29i) shows the

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[8] See Hiraiwa (2001b) for an alternative and Maki and Uchibori (2008) for discussion of the issues related to this assumption.

[9] Ochi (2001) actually proposes an analysis in terms of covert feature movement. But his analysis can be readily restated in terms of Agree.

[10] Here, T and C are not directly merged. The tacit assumption here, informally speaking, is that C is the head (or label) of $\alpha = \{C, \{N, D\}\}$ and hence, $\{T, \alpha\}$ values nominative. Note that DP and V are thematically related, for example, in $\{DP, \{V, v\}\}$. Then, V must be "visible" to DP in this configuration just as C is visible to T in $\{T, \{C, \{N, D\}\}\}$. I leave the precise formulation of "visibility" to future research.

excorporation of T-C-N-D. The subject is internally merged to TP as in (29j) if this is required by the EPP. Three successive excorporations in (29k–m) complete the derivation.

This derivation demonstrates that once the defectiveness of C is assumed, which seems necessary under any account, the nominative/genitive alternation follows from the Merge-based analysis of Japanese Case. A desirable consequence of this approach is that it automatically explains the absence of genitive on PPs and adjunct DPs in prenominal sentential modifiers. As noted above, genitive is required on adjunct DPs within simple DPs. Another relevant example is shown in (30a).

(30) a. Hanako-no   kinoo-*(no)   ikisaki
          Hanako-GEN yesterday-GEN destination

          'Hanako's destination yesterday'

      b. Hanako-no   kinoo-(*no)   it-ta   tokoro
          Hanako-GEN yesterday-GEN go-Past place

          'the place that Hanako went yesterday'

However, those DPs cannot be in genitive in relative clauses as (30b) shows. This follows from the hypothesis that Case is required for Merge as in (18), repeated below in (31).

(31) a. Case is required on DPs and PPs for merger with N/D.
      b. Case is required on argument DPs for merger with V and A.
      c. Case is required on argument DPs and PPs for merger with *v*.

The adjunct DP, *kinoo* 'yesterday', is merged with N in (30a) and hence, must carry Case. The Case is valued as genitive by N-D. That in (30b), on the other hand, is merged with V. As only argument DPs are required to have Case in this context, no Case shows up on *kinoo* 'yesterday' in (30b).

If one adopts the Agree-based analysis, it would probably be necessary to assume that the *no* on *Hanako* is Case that is valued by Agree while that on *kinoo* 'yesterday' is something else, a linker or prenominal inflection, that appears only prenominally. There is no need to make this distinction with the Merge-based analysis proposed here.

4.2. Head-Finality as a Consequence of Covert Excorporation

In this section, I return to the wide scope property of nominative objects and discuss its consequence for linearization. I argue that the proposals on phrase structure building and Case valuation outlined above open up a new way to derive the head-finality of Japanese from Kayne's (1994) LCA.

Let us consider again the contrast discussed by Tada (1992) in (6), repeated below in (32).

(32) a. Kiyomi-wa   migime-dake-o   tumur-e-ru (can > only)
Kiyomi-TOP right.eye-only-ACC close-can-Pres

'Kiyomi can wink with her right eye.'

b. Kiyomi-wa   migime-dake-ga   tumur-e-ru (only > can)
Kiyomi-TOP right.eye-only-NOM close-can-Pres

'It is only her right eye that Kiyomi can close.'

The narrow scope of the accusative object in (32a) should be attributed the fact that the accusative is valued by the V-*v* associated with the non-stative *tumur* 'close'. Then, *e* 'can' takes a *v*P complement, and the example should be derived as in (33)–(34).

(33) a. {close, *v*} (accusative)
b. {DP only-ACC, {close, *v*}}, DP = right eye
c. {{DP only-ACC, close}, *v*}
d. {K-Case, {{DP only-ACC, close}, *v*}}, K = Kiyomi

(33) shows the derivation of the embedded *v*P. The accusative is valued when the object is merged with V-*v* in (33c).

(34) is the derivation of the matrix CP phase.

(34) e. {T, C} (nominative)
f. {*v*, {T, C}}
g. {can, {*v*, {T, C}}}
h. {{K-Case, {{DP only-ACC, V}, *v*}}, {can, {*v*, {T, C}}}}, V = close
i. {{{K-Case, {{DP only-ACC, V}, *v*}}, can}, {*v*, {T, C}}}
j. {K-Case, {{{K-Case, {{DP only-ACC, V}, *v*}}, can}, {*v*, {T, C}}}}[11]
k. {{K-Case, {{{K-Case, {{DP only-ACC, V}, *v*}}, can}, *v*}}, {T, C}}
l. {K-NOM, {{K-Case, {{{K-Case, {{DP only-ACC, V}, *v*}}, can}, *v*}}, {T, C}}}
m. {{K-NOM, {{K-Case, {{{K-Case, {{DP only-ACC, V}, *v*}}, can}, *v*}}, T}}, C}

(34e–g) form the matrix *can-v*-T-C complex. Then, in (34h), the embedded *v*P is merged with this complex. The accusative object is contained within the *v*P while *can* is plausibly the head (or label) of the head complex. (See Fn.10 for relevant discussion.) Then, the scope relation, can > only, can be read off from this structure as illustrated in (35).

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[11] The subject *Kiyomi* is the external argument of *tumur* 'close' as well as of *e* 'can'. In (34j), I assume that it moves from the embedded *v*P Spec to the matrix *v*P Spec in order to account for this. But an alternative with PRO in the embedded *v*P Spec also serves the purpose.

(35)
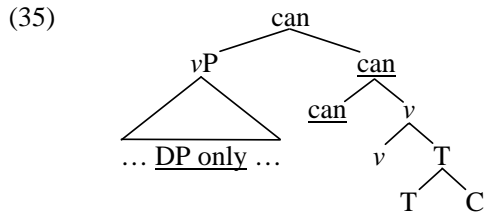
Thus, the narrow scope property of accusative objects seems straightforward. On the other hand, the wide scope property of nominative objects has an interesting implication. Let us consider the derivation of (32b) in (36).

(36) a. {T, C} (nominative)
      b. {*v*, {T, C}}
      c. {can, {*v*, {T, C}}}
      d. {close, {can, {*v*, {T, C}}}}[12]
      e. {ˌDP only-NOMˌ, {close, {ˌcanˌ, {*v*, {T, C}}}}}
      f. {{ˌDP only-NOMˌ, close}, {ˌcanˌ, {*v*, {T, C}}}}
      k. {{{DP only-NOM, close}, can}}, {*v*, {T, C}}}
      l. {K-Case, {{{DP only-NOM, close}, can}}, {*v*, {T, C}}}}
      m. {{K-Case, {{{DP only-NOM, close}, can}}, *v*}}, {T, C}}
      n. {K-NOM, {{K-Case, {{{DP only-NOM, close}, can}}, *v*}}, {T, C}}}
      o. {{K-NOM, {{K-Case, {{{DP only-NOM, close}, can}}, *v*}}, T}}, C}

As no Case is valued accusative in this example, the only phase head is C. The derivation, then, starts with C, and the *close-can-v*-T-C complex is formed in (36a–d). The object is merged with this complex in (36e), and the Case is valued nominative because of the T-C in the complex. At this point, the object c-commands *can* as in (37).

(37)
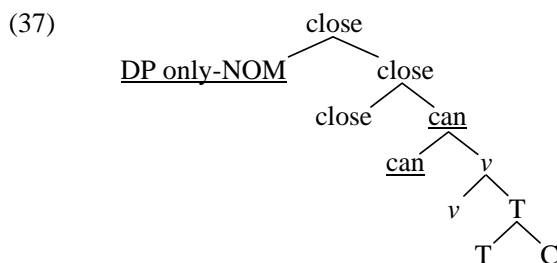
This accounts for the wide scope of the nominative object, but there is one further thing that must be said. Note that *can-v*-T-C excorporates in the next step of the derivation, (36f). The excorporation creates a configuration similar to (35). Then, if the scope relation is calculated based on this structure, it is predicted incorrectly that nominative objects at least

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[12] I assume, following Bobaljik and Wurmbrand (2007), that *e* 'can' selects for a V and takes a VP complement when the object of the V is in nominative. This is not crucial for the analysis proposed here.

can have narrow scope. This indicates that excorporation is "invisible" and ignored in the calculation of the scope relation.

Here, there must be a reason for the "invisibility" of excorporation for scope. And the desired result is obtained if the excorporation is covert. As is well known, Japanese is a language with scope rigidity. Thus, (38) is unambiguous and its interpretation reflects the hierarchical relation of the two quantified phrases.[13]

(38) dareka-ga   daremo-o   aisitei-ru (koto) ($\exists > \forall$)
      someone-NOM everyone-ACC love-Pres fact

      '(the fact that) someone loves everyone'

The scope relations in (32) can be understood as instances of this general phenomenon. As Kuroda (1971) points out, overt movement affects scope relations. (39a–b) are both ambiguous.

(39) a. daremo-o$_i$ dareka-ga t_i aisitei-ru (koto) ($\forall > \exists, \exists > \forall$)
          everyone-ACC someone-NOM   love-Pres fact

          '(the fact that) someone loves everyone'

      b. dareka-o$_i$ daremo-ga t_i aisitei-ru (koto) ($\exists > \forall, \forall > \exists$)
          someone-ACC everyone-NOM   love-Pres fact

          '(the fact that) everyone loves someone'

But covert movement should have no effects on scope. If QR, for example, can broaden the scope possibilities, (38) should not be unambiguous to begin with. Hence, the account of (32b) based on (37) can be maintained if excorporation is covert in Japanese.[14]

Although this may sound like a stipulation to accommodate the wide scope property of nominative objects, it predicts the head-finality of Japanese in an interesting way. Kayne (1994) proposes that linear order is derived from asymmetric c-command relations (Linear Correspondence Axiom, LCA). Let us consider the configuration in (40), assuming Chomsky's (1994) refinement that only maximal projections and heads count in the calculation of linear order.

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[13] There are variations among speakers with this. But as far as I know, the strongly preferred reading of (38) is the one with *someone* taking scope over *everyone* for all speakers.

[14] Note that this does not alter the derivations illustrated above if all operations, overt and covert, take place in a single cycle. I assume with Bobaljik (1995) that overt and covert movements apply in the same way, the only difference being that the phonetic features are interpreted at the landing site in the former while they receive interpretation at the initial site in the case of the latter.

(40)

$$W^{max} > X, W^{max} > Y^{max}, W^{max} > Y, W^{max} > Z^{max},$$
$$W^{max} > Z, X > Y, X > Z^{max}, X > Z, Y > Z, \dots$$
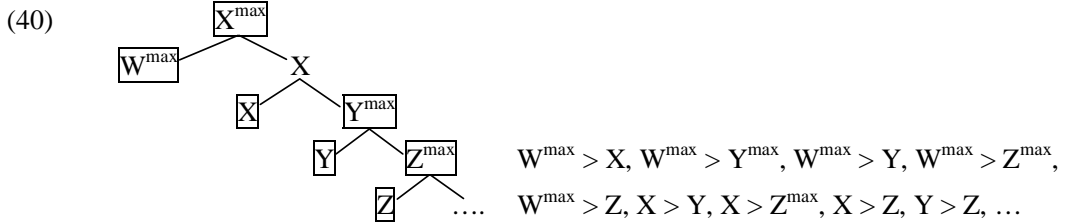
Stated on the right are the asymmetrical c-command relations observed with this structure. The linear order, $W^{max} > X > Y > Z$, is derived from these relations.

Kayne's LCA predicts the head-initial, spec–head–complement order. Hence, he entertains the possibility that the head-final, spec–complement–head order is derived by movement of the complement to a position that asymmetrically c-commands the head. However, the head-finality of Japanese automatically follows without further complication if excorporation is covert in the language. The only additional assumption required is virtually the definition of overt/covert movement: what enters into the calculation of linear order is the landing site in the case of overt movement and the initial site in the case of covert movement. Let us consider the *v*P structure in (41) for illustration.

(41)

$$Subj > Obj, \ Subj > V, Subj > v^{max},$$
$$Obj > V, Obj \ > v^{max}$$
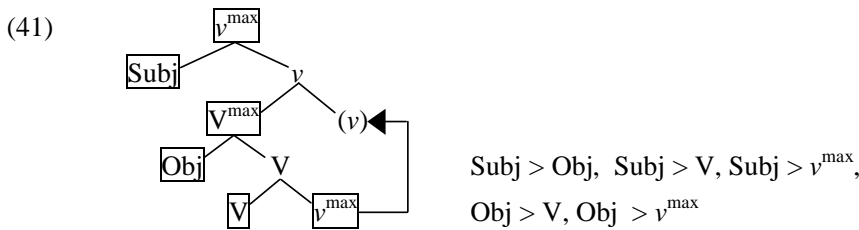
V and *v* merge first, and then the object DP merges with V-*v*. Then, *v* covertly excorporates and internally merges with VP. Then, the subject DP is externally merged. Here, since the excorporation is covert, the initial site of *v* counts in the calculation of linear order. Then, the asymmetric c-command relations on the right side obtain, yielding the subject–object–verb order. The linear order of V and *v* is undetermined, but it can be reasonably assumed that *v* cliticizes onto V. Thus, the head-finality of Japanese follows. As far as I can see, a derivation always yields a head-final order when it starts with a phase head and the excorporation is covert.

5. Conclusion and Further Issues

The main purpose of this paper was to suggest a Merge-based analysis of Case in Japanese. I first noted that an Agree-based analysis is untenable if a unified analysis is sought for Cases on argument DPs and PPs/adjunct DPs. Then, I argued that the wide scope property of nominative objects requires an alternative analysis on independent grounds. Given these conclusions, I explored the possibility that Case in Japanese is part of Merge: it is required for Merge and valued through Merge. I presented a concrete analysis, extending Shimada (2007)

and Tonoike's (2009) hypothesis on phrase structure building, which involves excorporation of heads out of head complexes. Finally, I pointed out that the wide scope property of nominative objects leads to the hypothesis that excorporation is covert in Japanese, and showed that this hypothesis predicts the head-finality of Japanese from Kayne's (1994) LCA.

In the discussion, I assumed that the proposed mode of phrase structure building applies universally. If this is correct, the head-initial order should be a consequence of overt excorporation. A vP in English, for example, would be derived as in (42) under this approach.

(42)
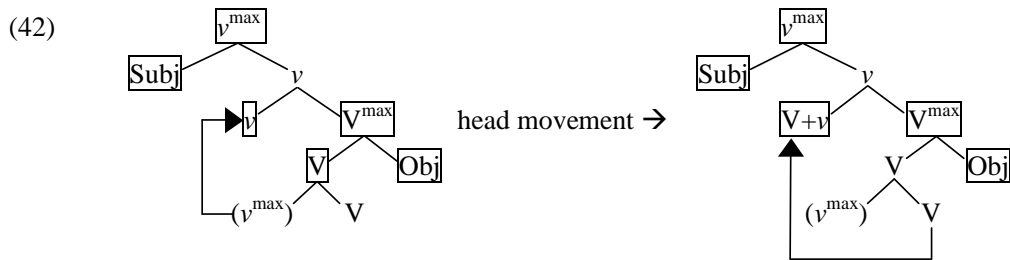
There are many possible ways to derive the head-initial order here. First, the structure is derived as illustrated on the left side with overt excorporation of v. This may suffice if the initial site of v is totally invisible in the calculation of linear order. It is also possible that V undergoes head movement to v as illustrated on the right side. In this case, the asymmetric c-command relation of V+v and the object DP is clear if the initial site of V, which lacks phonetic features, enters the calculation unlike the case of excorporation because it is where the V is interpreted.

If this approach is tenable, then the head-parameter is reduced to whether excorporation is overt or covert. On the other hand, it may turn out, as Hisa Kitahara suggests, that English phrase structure is derived with V and the object merging first, as is usually assumed. In this case, Japanese employs the specific way of phrase structure building illustrated above because Merge is Case-dependent in the language. This predicts that head-initial languages have Agree-based Case systems while head-final languages have Merge-based ones. Although the exploration of the two approaches undoubtedly raises a number of interesting issues, I must leave it for another occasion.

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TWO NOTES ON MULTIPLE SLUICING IN CHINESE AND JAPANESE*

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1. Introduction

In this article we consider the cases of reduction of interrogative clauses in Mandarin Chinese (henceforth, just Chinese) and Japanese where more than one remnant occurs. The phenomenon in which interrogative clauses are shrunk has been called sluicing since Ross (1969). The following is a typical example in English:

(1)   John hid something in the drawer, but I don't know what.

The verb in the second conjunct *know* selects an indirect question as its complement clause, but seemingly the complement only consists of the *wh*-phrase in (1). According to Ross (1969), the second conjunct is analyzed as follows:

(2)   I don't know [CP what [TP ~~John hid *t* in the drawer~~]]

The complement clause in question is assumed to have a full-fledged interrogative clausal structure underlyingly, with the TP part elided in PF under identity with the antecedent clause (ellipsis is indicated by the strikethrough). A similar phenomenon is observed in Chinese and Japanese (Inoue (1976), Takahashi (1994), and Wang (2002), among many others). The following are typical examples of sluicing in the languages ((3–4) are from Japanese and Chinese, respectively):[1]

(3)   Ken-ga   dareka-ni   atta   sooda.   Dakedo   boku-wa   dare-ni
        Ken-NOM   someone-DAT   met   I.heard   but   I-TOP   who-DAT
        ka   soozoodekinai.
        Q   cannot.imagine

        'I heard Ken met someone. But I cannot imagine who.'

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[1] Just for expository convenience, we gloss the element *shi* used in the examples of Chinese sluicing as FOC, which stands for a focus marker, though it is used as a copula in other environments. See Wang (2002) for some discussions.

(4)　　Lisi　da-le　　mouren,　dan　wo　bu　zhidao　shi　　shei.
　　　　Lisi　hit-ASP　someone　but　I　　not　know　　FOC　who

　　　'Lisi hit someone, but I don't know who.'

In these cases, the second conjuncts contain incomplete embedded clauses, but they are interpreted in the same way as the following complete sentences:

(5)　　Boku-wa　Ken-ga　　dare-ni　atta　ka　soozoodekinai.
　　　　I-TOP　　Ken-NOM　who-DAT　met　Q　cannot.imagine

　　　'I cannot imagine who Ken met.'

(6)　　Wo　bu　zhidao　Lisi　da-le　　shei.
　　　　I　　not　know　　Lisi　hit-ASP　who

　　　'I don't know who Lisi hit.'

It has been controversial in the literature whether cases of sluicing in Chinese and Japanese like (3–4) can be analyzed in the same way as their counterparts in English, and if not, how they should be treated (see, for instance, Nishiyama, Whitman, and Yi (1996), Saito (2004), Wang (2002), and Wei (2004)). In this article we impeachably call the phenomenon indicated in (3) and (4) sluicing just for ease of reference.

　　　While each of the examples in (3) and (4) has just one *wh*-phrase in its incomplete embedded question, the focus here is put on cases of sluicing with more than one remnant, such as the following (Takahashi (1994) and Chiu (2007), among others):

(7)　　Dareka-ga　　dareka-ni　　atta　sooda.　Dakedo　boku-wa
　　　　someone-NON　someone-DAT　met　I.heard　but　　　I-TOP
　　　　dare-ga　　dare-ni　　ka　soozoodekinai.
　　　　who-NOM　who-DAT　Q　cannot.imagine

　　　'*Lit.* I heard someone met someone. But I cannot imagine who who.'

(8)　　Mouren　　da-le　　Lisi, dan　wo　bu　zhidao　shi　　shei　zainali.
　　　　someone　hit-ASP　Lisi　but　I　　not　know　　FOC　who　where

　　　'*Lit.* Someone hit Lisi, but I don't know who where.'

The example in (7) is from Japanese. Takahashi (1994) examines cases like that, calling the phenomenon multiple sluicing, which is intended to stand for sluicing with multiple remnants. (8) is a case of multiple sluicing in Chinese, which is closely studied by Chiu (2007).

　　　The purpose of this article is to point out hitherto untouched facts about multiple sluicing in Chinese and Japanese, considering implications they have for comparative research on the two languages. The following discussion is two-fold: the first part is about the number of remnants in multiple sluicing, and the second part deals with cases of multiple sluicing with

what we call heterogeneous remnants, which have a combination of a *wh*-phrase and a non-*wh*-phrase as remnants.

2.   The Number of Remnants

While the example of multiple sluicing in (7) has two remnants, Takahashi (1994) observes that there can be more remnants in a case of multiple sluicing in Japanese. Consider the following examples:

(9)   Dareka-ga   kaikosareta sooda.   Dakedo boku-wa   dare-ga
       someone-NOM   was.fired   I.heard   but   I-TOP   who-NOM
       itu   donna riyuu-de   ka   soozoodekinai.
       when   what   reason-for   Q   cannot.imagine

'*Lit.* I heard someone was fired. But I cannot imagine who when for what reason.'

(10)   Dareka-ga   nanika-o   kakusita rasii.   Boku-wa   dare-ga
        someone-NOM someone-ACC   hid   likely   I-TOP   who-NOM
        nani-o   doko-ni   donna huu-ni   ka   soozoodekinai.
        what-ACC where-at   what   manner-in Q   cannot.imagine

'*Lit.* It seems someone hid something. I cannot imagine who what where in what way.'

The second sentences in (9) and (10) have three and four remnants, respectively. Both are perfectly acceptable.

Takahashi (1994) uses this fact to contrast Japanese with English, which appears to disallow multiple sluicing. Comparable examples in English such as the following are degraded:

(11) a.   Someone broke {something/someone's iPod}.
      b. *I don't remember who {what/whose iPod}.

(12) a.   Someone hit Mary.
      b. *I cannot imagine who when for what reason.

(13) a.   John hid something somewhere in his room.
      b. *Guess what where in what way for what purpose.

The examples in (11a), (12a), and (13a) serve to antecede the examples in (11b), (12b), and (13b), respectively, all of which contain sluiced embedded questions. (11b), (12b), and (13b) have two, three, and four *wh*-phrase remnants, respectively, and all of them are fairly degraded.[2]

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[2] However, there are some good cases of multiple sluicing in English. Building on an observation made by Bolinger (1978), Nishigauchi (1998) points out the following example:

Assuming that sluicing in English and its Japanese counterpart both involve *wh*-movement to the specifier position of CP (henceforth, Spec-CP) followed by TP-deletion (Ross (1969)), Takahashi (1994) attributes the difference between the two languages noted just above to the absence or presence of a movement operation responsible for formation of complex *wh*-phrases. To illustrate, let us consider the following schematic derivation of a multiply sluiced CP with three remnants in Japanese:

(14) a. $[_{CP} [_{TP} \ldots WH_1 \ldots WH_2 \ldots WH_3 \ldots] C]$

     b. $[_{CP} [_{TP} \ldots WH_1 \ldots [_{WH2} \textbf{WH}_3 WH_2] \ldots t_3 \ldots] C]$

     c. $[_{CP} [_{TP} \ldots [_{WH1} [_{WH2} \textbf{WH}_3 \textbf{WH}_2] WH_1] \ldots t_2 \ldots t_3 \ldots] C]$

     d. $[_{CP} [_{WH1} [_{WH2} \textbf{WH}_3 \textbf{WH}_2] \textbf{WH}_1] [_{C'} [_{TP} \ldots t_1 \ldots t_2 \ldots t_3 \ldots] C]]$

     e. $[_{CP} [_{WH1} [_{WH2} WH_3 WH_2] WH_1] [_{C'} \overline{[_{TP} \ldots t_1 \ldots t_2 \ldots t_3 \ldots]} C]]$

Underlyingly the three *wh*-phrases occur inside TP as shown in (14a). In the next step indicated in (14b), the lowest *wh*-phrase adjoins to the intermediate *wh*-phrase by what Takano (2002) calls oblique movement. Then, as shown in (14c), the complex adjoins to the highest *wh*-phrase again by oblique movement. This newly created complex then undergoes *wh*-movement to the Spec-CP ((14d)), followed by TP-deletion ((14e)). The hypothesis that Japanese permits a *wh*-phrase to adjoin to another phrase c-commanding it is proposed by Saito (1994) and elaborated by Sohn (1994) (for supportive arguments, readers are referred to those references). Takahashi (1994) claims that this movement, or oblique movement, is crucially involved in derivation of multiply sluiced clauses. In so doing, Takahashi (1994) hypothesizes that it is an instance of scrambling, an optional adjunction operation responsible for the free word order phenomenon in languages like Japanese (Saito (1985, 1992)). Since English lacks scrambling (that is, English is not a free word order language), it follows that

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(i)   a.   I know that in each instance one of the girls got something from one of the boys.
       b.   [?]But they didn't tell me which from which.

Anteceded by (ia), (ib) contains an incomplete embedded question, which consists of two *wh*-phrases. Lasnik (2008) suggests that the sluiced clause in (ib) is derived in such a way that while the first *wh*-phrase undergoes normal *wh*-movement to the specifier position of CP, the second *wh*-phrase is dislocated out of TP by rightward movement (or extraposition), as shown below:

(ii)   they didn't tell me $[_{CP}$ which$_1$ $[_{C'}$ C $[_{TP} \overline{t_1 \text{ got something } t_2}]$ [from which]$_2$ $]]]$

Here the embedded TP is elided after the two *wh*-phrases evacuate TP as indicated. Lasnik (2008) observes that cases like (ib) are allowed only when their second remnants are eligible for extraposition independently. Being aware of the existence of cases like (ib), we assume, as stated in the text, that English disallows multiple sluicing in general, on the ground that it does not tolerate sluicing with more than two remnants.

the language disallows multiple sluicing.

Several authors argue that Takahashi's (1994) analysis of Japanese sluicing in terms of *wh*-movement followed by TP-deletion is afflicted with some problems. Notably it has difficulty accommodating the optional appearance of the copula verb in sluiced clauses. Thus, the second sentence in (3) can be expressed alternatively as follows:

(15) Dakedo boku-wa dare-ni **da** ka   soozoodekinai.
       But   I-TOP   who-DAT be Q   cannot.imagine

       'But I cannot imagine who.'

Here the remnant *wh*-phrase is followed by the copula *da* 'be' and it is unexpected under Takahashi's (1994) analysis because the alleged source of (15) resists the occurrence of the copula. Compare the following examples with (5):

(16) a. *Boku-wa [Ken-ga   dare-ni   atta **da** ka] soozoodekinai.
           I-TOP   Ken-NOM who-DAT met   be   Q   cannot.imagine

       b. *Boku-wa [Ken-ga   dare-ni   **da** atta ka] soozoodekinai.
           I-TOP   Ken-NOM who-DAT be   met   Q   cannot.imagine

In (16), the copula is placed either after or in front of the verb in the embedded clause: neither (16a) nor (16b) is possible. The fact that the copula optionally occurs in sluiced clauses in Japanese leads researchers like Kuwabara (1996), Nishiyama, Whitman, and Yi (1996), and Saito (2004) to propose an alternative analysis according to which sluiced sentences are derived from the corresponding cleft constructions in Japanese. The cleft analysis postulates that the source of the sluiced sentences in (3) and (15) has the following form:

(17) Boku-wa [[Ken-ga   atta no]-ga   dare-ni   **da** ka]
       I-TOP   Ken-NOM met   that-NOM who-DAT be   Q
       soozoodekinai.
       cannot.imagine

       'I cannot imagine who it was that Ken met.'

The embedded clause here is a cleft construction (see Hoji (1989) for general discussions about the cleft construction in Japanese): it has a clausal subject expressing the presupposition, which is followed by the focused *wh*-phrase, which in turn is followed by the copula. It is independently assumed that Japanese allows ellipsis of arguments such as subjects and objects (Oku (1998), Saito (2007), Takahashi (2008), and so on). If the embedded clausal subject is elided in (17), Saito (2004) argues, it yields (15). Also, for some unclear reason, the copula can optionally be omitted in embedded clauses in Japanese. Thus, besides (17), we may have the following form:

(18) Boku-wa [[Ken-ga   atta no]-ga   dare-ni   __   ka] soozoodekinai.
      I-TOP   Ken-NOM met that-NOM who-DAT   Q   cannot.imagine

Elision of the embedded subject in (18) gives rise to the "sluiced" sentence in (3). Since the cleft analysis can accommodate the optional appearance of the copula in Japanese sluicing and dispense with the assumption that Japanese, a *wh*-in-situ language, has overt *wh*-movement as well as TP-deletion, it has gained popularity among experts on the topic.

Given that the cleft analysis has become standard, a question arises as to how it accounts for multiple sluicing. In fact, Kuwabara (1996) argues that it can accommodate the occurrence of multiple remnants fairly easily. He observes that the Japanese cleft construction allows multiple foci, as shown below:

(19) a. Boku-wa [*[kaikosareta no]-wa*   dare-ga   itu   donna riyuu-de
         I-TOP   was.fired   that-TOP who-NOM when   what reason-for
         (da) ka] soozoodekinai.
          be   Q   cannot.imagine

        '*Lit.* I cannot imagine who when for what reason it was that was fired.'

    b. Boku-wa [*[kakusita no]-wa*   dare-ga   nani-o   doko-ni   donna
         I-TOP   hid   that-TOP who-NOM what-ACC where-at what
         huu-ni   (da) ka] soozoodekinai.
         manner-in be   Q   cannot.imagine

        '*Lit.* I cannot imagine who what where in what way it was that hid.'

These examples should be compared with (9) and (10). If the embedded clausal subjects (the italicized parts) are elided and the copula is optionally omitted, (19a–b) result in (9) and (10), respectively.

In fact, Takano (2002) argues that oblique movement is responsible for multiple foci. For the purpose of illustration, let us assume Hiraiwa and Ishihara's (2002) analysis of the cleft construction in Japanese in terms of remnant movement.[3] For example, the cleft sentence in (20) is derived as in (21).

(20) [Ken-ga   atta no]-wa Yumi-ni   da.
     Ken-NOM met   that-TOP Yumi-DAT be

    'It was Yumi that Ken met.'

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[3] Actually, Takano (2002) adopts a slightly different analysis of the cleft construction, but the choice between the analysis in the text and Takano's does not affect our main concern here. Also, though Hiraiwa and Ishihara (2002) assume that the landing site of the presuppositional CP is the specifier position of Topic Phrase, we assume mainly for expository purposes that it is the specifier position of TP (see (21c)).

(21) a. $[_{CP}$ $[_{TP}$ Ken-ga Yumi-ni atta] no] da

b. $[_{FocP}$ **Yumi-ni$_1$** $[_{CP}$ t_1' $[_{TP}$ Ken-ga t_1 atta] no] da]

c. $[_{TP}$ **$[_{CP}$ t_1' $[_{TP}$ Ken-ga t_1 atta] no]-wa** $[_{FOCP}$ Yumi-ni$_1$ t_{CP} da]]

Underlyingly, the focused phrase *Yumi-ni* 'Yumi-DAT' occurs in the object position of the associated verb as in (21a), where the CP headed by *no* 'that' is the complement of the copula *da*, which is taken to be a focus head. In the next step depicted in (21b), the focused element undergoes movement to the specifier position of Focus Phrase (or just the Spec-FocP) via the Spec-CP. At the final stage in (21c), the CP is moved to the Spec-TP. Examples with multiple foci are then derived in the following fashion (X and Y are supposed to be focused elements):

(22) a. $[_{CP}$ $[_{TP}$ … X … Y …] no] da

b. $[_{CP}$ $[_{TP}$ … $[_X$ **Y** X] … t_Y …] no] da

c. $[_{FocP}$ $[_X$ **Y X**] $[_{CP}$ t_X' $[_{TP}$ … t_X … t_Y …] no] da]

d. $[_{TP}$ **$[_{CP}$ t_X' $[_{TP}$ … t_X … t_Y …] no]-wa** $[_{FocP}$ $[_X$ Y X] t_{CP} da]]

In the underlying representation in (22a), two focused elements, X and Y, occur in the CP headed by *no*. In the second step in (22b), the lower focused phrase Y adjoins to the higher phrase X by oblique movement, forming a complex focused phrase. In the third step in (22c), the complex undergoes movement to the Spec-FocP successive-cyclically. And finally in (22d), the remnant CP moves to the Spec-TP. Suppose that X and Y are *wh*-phrases and that the CP is elided in (22d), and we have a multiply sluiced clause.

To recapitulate the point above, whether Japanese sluicing is to be analyzed in terms of *wh*-movement plus TP-deletion or in terms of the cleft construction, the possibility of multiple sluicing depends on the availability of oblique movement, which is taken to be an instance of scrambling by Takahashi (1994). Bearing this in mind, let us turn our attention to Chinese. Chiu (2007) observes that it allows multiple sluicing, though unfortunately he only considers examples with two remnants. Although we suppose that he intends to mean that Chinese allows sluicing with two or more *wh*-phrases, we take on the task of examining whether it actually allows more than two remnants. The following are relevant examples:

(23) a. Mouren   da-le   Lisi,
      someone   hit-ASP Lisi

      'Someone hit Lisi,'

b. dan wo bu zhidao shi shei shenmeshihou zainali.
    but I   not know   FOC who   when   where

'*Lit.* but I don't know who when where.'

c. dan wo bu zhidao shi shei shenmeshihou zainali yong shenme
    but I   not know   FOC who   when   where   in   what
    fangshi.
    way

'*Lit.* but I don't know who when where in what way.'

(24) a. Zhangsan mai-le   moge-dongxi,
         Zhangsan buy-ASP something

'Zhangsan bought something,'

b. dan wo bu zhidao shi shenme zainali yinwei shenme yuanyin.
    but I   not know   FOC what   where   for   what   reason

'*Lit.* but I don't know what where for what reason.'

c. dan wo bu zhidao shi shenme shenmeshihou zainali yinwei
    but I   not know   FOC what   when   where   for
    shenme yuanyin.
    what   reason

'*Lit.* but I don't know what when where for what reason.'

The sentence in (23a) serves as the antecedent for (23b–c). While (23b) has three *wh*-phrases as remnants, (24c) has four. Both are quite acceptable. In a similar fashion, anteced by (24a), (24b–c) contain sluiced embedded clauses with three and four remnants, respectively, and both are acceptable. These indicate that multiple sluicing with more than two remnants is indeed possible in Chinese, just as in Japanese. What implications does it have for the general theory of multiple sluicing?

Considering data in Japanese, Takahashi (1994) argues that the availability of scrambling should be responsible for the possibility of multiple sluicing. The observation above about Chinese plainly indicates that Takahashi's (1994) hypothesis does not hold for the language, because it is not a free word order language and hence lacks scrambling. The absence of scrambling in Chinese can be shown by a cursory look at the following data:

(25) a. Zhangsan song Lisi yi-ben shu.
         Zhangsan send Lisi one-CL book

'Zhangsan sent Lisi a book.'

b. *Zhangsan song yi-ben shu Lisi.
   Zhangsan send one-CL book Lisi

c. *Zhangsan Lisi yi-ben shu song.
   Zhangsan Lisi one-CL book send

d. *Lisi yi-ben shu Zhangsan song.
   Lisi one-CL book Zhangsan send

The example in (25a) is a double object construction. We cannot permute the order of the two objects ((25b)), nor can we place the two objects between the subject and the verb ((25c)) or in front of the subject ((25d)).

How can we proceed with the fact that multiple sluicing is available both in Japanese and in Chinese? One possibility is to stick to the idea that oblique movement is responsible for the formation of a cluster of *wh*-phrase remnants in both languages while giving up Takahashi's (1994) assumption that it is an instance of scrambling. Attributing it to Kim (1998), Takano (2002) considers the hypothesis that oblique movement is focus-related: simply put, oblique movement involves movement of one focused phrase to another (probably by adjunction). Given that focus-related movement is available in both languages, it allows both of them to have oblique movement.[4] A potential problem with this approach is that we may lose explanation for the absence of oblique movement in English (if it were present, English would allow multiple sluicing). Obviously there are phenomena involving focus in English (for instance, the cleft construction). If oblique movement were focus-related, we would expect it to be available in English as well, yielding multiple sluicing.

Another possibility to pursue is to treat multiple sluicing in Chinese and Japanese

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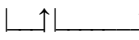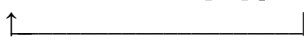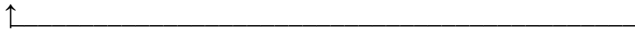
[4] As noted above in the text, Japanese has the cleft construction, which is clearly focus-related and exhibits properties of movement (Hoji (1989)). Chinese also possesses the cleft construction, as exemplified below:

(i) a. Zhangsan da-le Lisi.
        Zhangsan hit-ASP Lisi

        'Zhangsan hit Lisi.'

     b. Shi Zhangsan da-le Lisi.
        FOC Zhangsan hit-ASP Lisi

        'It was Zhangsan that hit Lisi.'

     c. ?Shi Lisi Zhangsan da-le.
        FOC Lisi Zhangsan hit-ASP

        'It was Lisi that Zhangsan hit.'

The cleft sentences in (ib–c) are constructed on the basis of the simple sentence in (ia): the subject and the object are focused in (ib–c), respectively, as indicated by the attachment of the focus marker *shi*.

differently: for example, to maintain the analysis of Japanese multiple sluicing in terms of oblique movement as an instance of scrambling while providing a different analysis for the Chinese counterpart. Though this may be workable, it could not offer a unified explanation for the two cases of multiple sluicing, which do exhibit some similarities, such as the clausemate effect noted by Chiu (2007) and Takahashi (1994).

Kuwabara (1996) provides an alternative analysis for multiple sluicing in Japanese that does not involve oblique movement (see also Koizumi (2000)). Head movement and remnant movement are crucial ingredients of his analysis. Let us illustrate the gist of his analysis with the following schematic derivation of a multiply sluiced clause with a subject, an adjunct, and an object remnant:

(26) a. $[_{CP}$ $[_{TP}$ WH$_{SUB}$ $[_{vP}$ WH$_{ADJ}$ WH$_{OB}$ V] T] no] da

b. $[_{CP}$ $[_{TP}$ WH$_{SUB}$ $[_{vP}$ WH$_{ADJ}$ WH$_{OB}$ t_V] t_T] $[_{C}$ $[_{T}$ **V** T] no]] da

c. $[_{FocP}$ **$[_{TP}$ WH$_{SUB}$ $[_{vP}$ WH$_{ADJ}$ WH$_{OB}$ t_V] t_T]** $[_{CP}$ t_{TP} $[_{C}$ $[_{T}$ V T] no]] da]

d. $[_{TP}$ **$[_{CP}$ t_{TP} $[_{C}$ $[_{T}$ **V** T] no]]-wa** $[_{FocP}$$[_{TP}$ WH$_{SUB}$ $[_{vP}$ WH$_{ADJ}$ WH$_{OB}$ t_V] t_T] t_{CP} da]]

e. $[_{CP}$ $[_{TP}$ ~~**$[_{CP}$ t_{TP} $[_{C}$ $[_{T}$ V T] no]]-wa**~~ $[_{FocP}$$[_{TP}$ WH$_{SUB}$ $[_{vP}$ WH$_{ADJ}$ WH$_{OB}$ t_V] t_T] t_{CP} da]] ka]

Kuwabara (1996) assumes that Japanese sluicing is derived from the cleft construction, and thus we illustrate his analysis with Hiraiwa and Ishihara's (2002) theory (see (20) and (21) above). In the underlying representation in (26a), three *wh*-phrases appear in the CP headed by *no* 'that,' which is selected by *da* 'be.' In the next step in (26b), the verb inside the CP undergoes head movement to C via T. In (26c), focus movement applies to the remnant TP, locating it in the SPEC-FocP. Note that the affected TP contains the three *wh*-phrases, each of which does not undergo movement by itself: they are dislocated as a result of movement of the TP containing them. The subsequent step in (26d) involves remnant movement of the CP headed by *no* to the Spec-TP. In (26e), the TP is merged with the interrogative complementizer; if ellipsis applies to the presuppositional CP, as indicated by the strikethrough, the representation of multiple sluicing is obtained.

Since this analysis does not assume oblique movement, it should in principle be applicable to Chinese. A potential obstacle may be that in order to deal with a cluster of remnants including a subject *wh*-phrase, which is arguably in the Spec-TP, TP must be subject to remnant movement as shown in (26c), which necessitates verb movement to C as indicated in (26b). This is unlikely, however, since verbs usually do not occur above subjects in Chinese. Consider the following examples:

(27) a.　　Zhangsan　da-le　　Lisi.
　　　　　　Zhangsan　hit-ASP　Lisi

　　　　　　'Zhangsan hit Lisi.'

　　b.　＊Da-le　　　Zhangsan　Lisi.
　　　　　　hit-ASP　Zhangsan　Lisi

Verbs usually appear in the position following subjects, as in (27a). If V-to-C movement were available, cases like (27b) would be obtained. Since the configuration depicted in (27b) is generally impossible, it is unlikely that Chinese allows verb movement to C. Therefore, it is difficult to apply Kuwabara's (1996) idea to multiple sluicing in Chinese (see also Takano (2002) for arguments against Kuwabara's (1996) analysis).

These considerations show that it is not an easy task to account for multiple sluicing in Chinese and Japanese in a uniform fashion. Although we have to leave it to future research to propose our own analysis, we end this section by pointing out that the so-called pseudo-cleft construction in Chinese exhibits patterns similar to, and hence can be considered as a viable source of, multiple sluicing in the language (see also Chiu, Fujii, and Sugawa (2008) and the references therein for related discussions). First, the pseudo-cleft construction in Chinese is illustrated below, where RM stands for the relativization marker:

(28) a.　　Zhangsan　da-le　　Lisi.
　　　　　　Zhangsan　hit-ASP　Lisi

　　　　　　'Zhangsan hit Lisi.'

　　b.　　[[Zhangsan　da-le]　　de]　　shi　Lisi.
　　　　　　　Zhangsan　hit-ASP　RM　　be　Lisi

　　　　　　'*Lit.* That Zhangsan hit was Lisi.'

　　c.　　[[Da-le　　Lisi]　de]　　shi　Zhangsan.
　　　　　　　hit-ASP　Lisi　RM　　be　Zhangsan

　　　　　　'*Lit.* That hit Lisi was Zhangsan.'

Building on the simple sentence in (28a), we may form pseudo-cleft sentences as in (28b–c), where the subjects are free relative clauses followed by the copula and the pivots (or foci). Note that if the relative clause subjects are elided in (28b–c), sluicing-like structures are obtained. The pseudo-cleft construction is dismissed, however, as a general source of sluiced clauses in Chinese in the literature because it is difficult to derive sluiced clauses with non-NP remnants from theis pseudo-cleft counterparts. Categories other than NP may appear as remnants in sluicing, but crucially they cannot be pivots in pseudo-clefts (see the references above).

(29) a.　Zhangsan　da-le　　Lisi,　dan　wo　bu　zhidao　shi　　zainali.
　　　　　Zhangsan　hit-ASP　Lisi　but　I　　not　know　FOC　where

　　　　　'Zhangsan hit Lisi, but I don't know where.'

　　　b.　＊Zhangsan　da-le　　Lisi　de　　shi　{zai　Xiantai. / zainali?}
　　　　　　Zhangsan　hit-ASP　Lisi　RM　be　in　Sendai　where

　　　　　'*Lit.* That Zhangsan hit Lisi was in Sendai./where?'

What is noteworthy, however, is that non-NP pivots are in fact permissible if they are preceded by NP pivots, as shown below:

(30) a.　Da-le　　Lisi　de　　shi　Zhangsan　zai　Xiantai.
　　　　　hit-ASP　Lisi　RM　be　Zhangsan　in　Sendai

　　　　　'*Lit.* That hit Lisi was Zhangsan in Sendai.'

　　　b.　Da-le　　Lisi　de　　shi　shei　shenmeshihou　zainali　yinwei　shenme
　　　　　hit-ASP　Lisi　RM　be　who　when　　　　　　where　for　　what
　　　　　yuanyin?
　　　　　reason

　　　　　'*Lit.* That hit Lisi was who when where for what reason?'

In particular, (30b) contains four *wh*-phrases as pivots. Further, Chiu (2007) notes that multiple sluicing with two NP remnants is impossible in Chinese, as shown in (31a). Likewise, pseudo-clefts with two NP pivots are degraded, as in (31b–c).

(31) a.　＊Mouren　mai-le　　　mogedongxi,　dan　wo　bu　zhidao　shi　　shei
　　　　　　someone　buy-ASP　something　　but　I　　not　know　FOC　who
　　　　　　shenme.
　　　　　　what

　　　　　'*Lit.* Someone bought something, but I don't know who what.'

　　　b.　＊Mai-le　　de　　shi　shei　shenme?
　　　　　　buy-ASP　RM　be　who　what

　　　　　'*Lit.* That bought was who what?'

　　　c.　＊Da-le　　de　　shi　Zhangsan　Lisi.
　　　　　　hit-ASP　RM　be　Zhangsan　Lisi

　　　　　'*Lit.* That hit was Zhangsan Lisi.'

As far as multiple sluicing in Chinese is concerned, therefore, the pseudo-cleft construction seems to be a strong candidate for the source.

3. Heterogeneous Remnants

The topic we will consider in this section pertains to multiple sluicing with different kinds of remnants in Chinese and Japanese. We will make some novel observations, pointing out implications they have on the analyses of sluicing in those languages.

Let us start with some preliminary observations. First of all, a number of authors including Chiu, Fujii, and Sugawa (2008), Kuwabara (1996), and so on observe that non-*wh*-phrases can serve as remnants in Japanese sluicing. The following is a typical example:

(32) a. Ken-wa   [CP Gaga-ga   Kyoto-ni kuru   to] itta.
         Ken-TOP   Gaga-NOM Kyoto-to come   that said

   'Ken said that Gaga will come to Kyoto.'

   b. Takuya-wa   [CP Sendai-ni to] itta.
       Takuya-TOP   Sendai-to   that said

   '*Lit.* Takuya said that to Sendai.'

Anteceded by (32a), (32b) contains a truncated embedded clause, which consists of the non-*wh*-remnant *Sendai-ni* 'to Sendai' and the complementizer *to* 'that.' Though we do not go into details, the possibility of cases like this in Japanese vis-à-vis their absence in English leads the authors mentioned above to argue that Japanese sluicing should be treated differently from its English counterpart.

Chiu, Fujii, and Sugawa (2008) point out a similar phenomenon in Chinese. The example below is cited from the article:

(33) a. Zhang laoshi   renwei Lisi zai tushuguan du   yuyanxue,
         Zhang teacher thinks   Lisi at   library   study linguistics

   'Prof. Zhang thinks that Lisi is studying linguistics at the library,'

   b. dan Lin   laoshi   renwei shi   zai kafeiting
       but   Lin   teacher think   FOC at   coffee.shop

   '*Lit.* but Prof. Lin thinks that at the coffee shop.'

The sentence in (33a) serves as the antecedent for (33b), where the embedded clause only contains the non-*wh*-phrase PP accompanied by the focus marker.

Further, Kuwabara (1996) observes that Japanese allows multiple sluicing with a combination of a *wh*-phrase remnant and a non-*wh*-phrase remnant. Consider the following example:

(34) a. Ken-wa [dono otokonoko-ga kyoositu-de benkyoosita ka] sitteiru.
　　　 Ken-TOP which boy-NOM classroom-at studied Q know

　　　 'Ken knows which boy studied at the classroom.'

　　 b. Yumi-wa [dono onnanoko-ga tosyokan-de ka] sitteiru.
　　　 Yumi-TOP which girl-NOM library-at Q know

　　　 '*Lit.* Yumi knows which girl at the library.'

Taking (34) as its antecedent, (34b) means that Yumi knows which girl studied at the library. Notice that the embedded clause in (34b) is shrunk, with the *wh*-phrase *dono onnanoko-ga* 'which girl-NOM' and the non-*wh* PP *tosyokan-de* 'at the library' left as remnants. This fact may not be so surprising given that Japanese permits multiple sluicing and allows not only *wh*-phrases but also non-*wh*-phrases as remnants of single sluicing.

　　 One may then expect that Chinese should allow multiple sluicing with heterogeneous remnants too, because just like Japanese, it permits single sluicing with either *wh*-phrase or non-*wh*-phrase remnants and allows multiple sluicing. This is not borne out, however, as the following examples are unacceptable:

(35) a. Zhangsan xiang zhidao [nage nanhai zai Shanghai kanjian AKB48].
　　　 Zhangsan want know which boy in Shanghai see AKB48

　　　 'Zhangsan wants to know which boy saw AKB48 in Shanghai.'

　　 b. *Lisi xiang zhidao [shi nage nvhai zai Xiantai].
　　　 Lisi want know FOC which girl in Sendai

　　　 '*Lit.* Lisi wants to know which girl in Sendai.'

(36) a. Zhangsan zhidao [nage nanhai song yiben shu gei Xiaoli].
　　　 Zhangsan know which boy send one book to Xiaoli

　　　 'Zhangsan knows which boy sent a book to Xiaoli.'

　　 b. *Lisi zhidao [shi nage nvhai gei Xiaohong].
　　　 Lisi know FOC which girl to Xiaohong

　　　 '*Lit.* Lisi knows which girl to Xiaohong.'

Anteceded by (35a) and (36a), (35b) and (36b), respectively, have truncated embedded clauses with a combination of a *wh*-phrase remnant and a non-*wh* remnant. (35b) is intended to mean that Lisi wants to know which girl saw AKB48 in Sendai; (36b) should mean that Lisi knows which girl sent a book to Xiaohong. As indicated, both of them are impossible. This is one respect in which Chinese and Japanese behave differently.

　　 We point out that here, too, the pseudo-cleft construction is a viable source for multiply

sluiced clauses in Chinese, because the pseudo-cleft counterparts of (35b) and (36b) exhibit the same pattern.[5]

(37) a. *[Kanjian AKB48 de] shi nage nvhai zai Xiantai?
       see   AKB48 RM be which girl in Sendai

    '*Lit.* That saw AKB48 was which girl in Sendai?'

   b. *[Song yiben shu] shi nage nvhai gei Xiaohong?
        send one   book be which girl to Xiaohong

    '*Lit.* That sent a book was which girl to Xiaohong?'

These pseudo-cleft sentences contain multiple pivots: in each case, the first pivot is a *wh*-phrase and the second is a non-*wh*-phrase. The examples are fairly degraded, in contrast with (30a–b), which have homogeneous pivots. For those who assume that multiple sluicing is derived from the pseudo-cleft construction in Chinese, the fact in (35) and (36) is relatively easy to deal with, because their alleged sources are impossible. Of course, though, providing an ultimate answer to the question why cases like (37a–b) are disallowed awaits further careful investigation.

Finally, we note that the alleged source of (34b) under the cleft analysis of Japanese sluicing does not sound very good.[6] The cleft counterpart of (34b) is given below with our judgment:

(38) [?]*[Benkyoosita no]-wa   dono onnanoko-ga tosyokan-de desu ka?
     studies   that-TOP which girl-NOM   library-at   be   Q

   '*Lit.* Which girl at the library was it that studied?'

If this observation is correct, it poses a problem to the advocates of the cleft analysis: why is (34b), a case of multiple sluicing with heterogeneous remnants, possible although its purported source, a cleft sentence with heterogeneous pivots, is impossible? Although this, too, remains to be solved, it surely gives us a new perspective on the issue concerning the proper treatment of Japanese sluicing.

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[5] As noted in section 2, the pseudo-cleft construction tolerates multiple pivots if they are of the same kind. Thus, (37a) becomes acceptable if the second pivot is replaced with a *wh*-phrase as below:

(i) [Kanjian AKB48 de] shi nage nvhai zainali?
    see   AKB48 RM be which girl   where

   '*Lit.* That saw AKB48 was which girl where?'

[6] Attributing it to one of the reviewers of his article, Takano (2002) observes that cases similar to (38) are not very bad. We disagree with him (or that reviewer) about the status of the relevant examples, which sound fairly degraded to us. The point here is that there are speakers that accept sluicing with heterogeneous remnants but do not allow cleft sentences with heterogeneous pivots.

4.　Conclusion

　　To summarize, we have pointed out two major facts about multiple sluicing in Chinese, considering their implications on comparative research on sluicing in Chinese and Japanese. One has to do with the observation that Chinese sluicing allows more than two remnants just like its Japanese counterpart. While the fact itself demands explanation, it also helps narrow down the competing analyses proposed for Japanese multiple sluicing: it at least suggests that any analysis implicating scrambling to deal with multiple remnants should be subjected to reconsideration. The other major point pertains to the difference between the two languages in terms of multiple sluicing with heterogeneous remnants: Whereas it is possible in Japanese, it is not in Chinese. Considering that they are similar in a number of other respects related to sluicing, the existence of such a difference is intriguing in itself. At the same time, however, it has important consequences on how sluicing in those languages should be analyzed: that multiple sluicing with heterogeneous remnants patterns with its pseudo-cleft counterpart in Chinese strongly suggests the possibility that the latter acts as the source of the former. As for sluicing with heterogeneous remnants in Japanese, on the other hand, its alleged source according to the cleft analysis turns out to be impermissible, indicating that it derives from some other source. Although we have had to leave a number of important questions unresolved, we believe that our observations here will fuel further comparative research on the two languages in terms of sluicing, a much studied but still mysterious phenomenon.

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PSEUDO-RIGHT DISLOCATION
AND THE BARE-TOPIC CONSTRUCTION IN JAPANESE*

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1. Introduction

Although Japanese is a strict head-final SOV language, various kinds of constituents may appear in the post-verbal position. Some concrete examples of this construction, called right dislocation, are given in (1).[1]

(1) a. Taroo-ga   Δ katta-yo,   **ano hon-o**
       Taroo-Nom   bought-Prt that book-Acc

    '*Lit*. Taroo bought Δ, **that book**'

   b. Taroo-ga   Δ inu-o   hirotta-yo,   **ano kooen-de**
       Taroo-Nom   dog-Acc picked.up-Prt that park-in

    '*Lit*. Taroo picked up a dog Δ, **in that park**

   c. Taroo-ga   Δ okane-o   nusunda-yo, **ano saihu-kara**
       Taroo-Nom   money-Acc stole-Prt   that wallet-from

    '*Lit*. Taroo stole money Δ, **from that wallet**'

Dislocated phrases can be Case-marked NPs as in (1a) or PPs as in (1b–c).

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[1] Right dislocated constituents are given in boldface, and the symbol Δ indicates the gap corresponding to them. The particle *-yo* is attached to the verb to make the sentence more colloquial, as right dislocation is more natural in colloquial speech. Although various constituents including clausal arguments, adverbials, and prenominal modifiers can appear in the post-verbal position, I restrict myself to the cases where nominal elements are right dislocated, since pseudo-right dislocation counterparts (which are introduced below in the text) can be created only in these cases.

There is a version of right dislocation where dislocated phrases lack their Case-markers/postpositions, as in (2).[2]

(2) a. Taroo-ga   Δ katta-yo,   **ano hon-Ø**
       Taroo-Nom   bought-Prt   that book

'*Lit*. Taroo bought Δ, **that book**'

b. Taroo-ga   Δ inu-o   hirotta-yo,   **ano kooen-Ø**
   Taroo-Nom   dog-Acc picked.up-Prt   that park

'*Lit*. Taroo picked up a dog Δ, **that park**

c. Taroo-ga   Δ okane-o   nusunda-yo, **ano saihu-Ø**
   Taroo-Nom   money-Acc stole-Prt   that wallet

'*Lit*. Taroo stole money Δ, **that wallet**'

I call this version of right dislocation *pseudo*-right dislocation (PRD), as opposed to the *"standard"* right dislocation (SRD) in (1), where dislocated elements are Case-/postposition-marked. In the previous literature, PRD has been rarely studied in detail, and if any, it has been taken for granted that PRD is merely a sub-case of SRD (see, for instance, Endo 1996, Fukutomi 2007). The only exception I am aware of is Tanaka and Kizu (2006, 2007, henceforth T&K), who focus on right dislocations with Case-marked and Case-less NPs such as (1a) and (2a).[3]

This paper has the following goals: First, building on the data by T&K, I provide a novel set of observations regarding PRD, comparing it with SRD. Then, I propose an account of the properties of PRD, claiming that it is derived from the bare-topic construction discussed by Taguchi (2009) (see also Endo 2007). Second, I illustrate that the bare-topic construction is subsumed under Hanging Topic constructions found in various Romance and other languages (see, among many others, Cinque 1977, 1983, 1990, Vat 1981, Grohmann 2000a, b, Frey 2004, Benincà and Polleto 2004, Shaer and Frey 2004, Belletti 2008, Krapova and Cinque 2008 and the papers in Anagnostopoulou, van Riemsdijk and Zwarts 1997). Bringing these goals together, I argue that investigation of the properties of PRD allows us to contribute to a deeper understanding of the nature of the bare-topic construction, which in turn opens a novel way of comparing Japanese with other languages in terms of the syntax of topics.

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[2] All instances of Case-marker/postposition do not appear to be able to be missing equally (see Endo 1996 and Fukutomi 2007). In particular, Case-markers can be missing more easily than postpositions. Furthermore, the fact that (2c) is degraded compared to (2b) for some speakers indicates that there are certain differences among postpositions. Hence, the examples presented in the rest of this paper are basically modeled on (2a-b).

[3] I thank Hideaki Yamashita (p.c.) for reminding me the relevance of T&K. To be more precise, they also examine the behaviors of Case-marked and Case-less NPs in cleft and relative clauses, and argue that the three constructions behave in the same way.

This paper is organized as follows: In Section 2 I provide a set of data regarding PRD. Section 3 proposes an account of the properties of PRD, and compares it with some potential alternative analyses. In Section 4 I illustrate that the bare-topic construction is subsumed under Hanging Topic constructions, and discuss various implications arising from this perspective. Section 5 concludes this paper.

2. Observations

This section provides a set of data concerning PRD, comparing it with SRD. Although it is shown that there are some similarities between SRD and PRD in Section 2.1, we see that they do behave differently in a significant way in Section 2.2.

2.1. Similarities between SRD and PRD

It has been observed at least since Kuno (1978) and Inoue (1978) that SRD is insensitive to Ross' (1967) Right-Roof Constraint, which prohibits rightward movement from crossing a clausal boundary. That is, right dislocated phrases can participate in long-distance dependencies, as shown in (3). The fact that the examples in (3) are still grammatical even if the Case-makers/postpositions of the dislocated phrases are missing indicates that PRD is also insensitive to the constraint, on a par with SRD.

(3) a. Hanako-ga [Taroo-ga Δ katta to] itteita-yo, **ano hon-{o/Ø}**
        Hanako-Nom Taroo-Nom   bought C said-Prt   that book-Acc

    '*Lit*. Hanako said [that Taroo bought Δ], **that book**'

   b. Hanako-ga [Taroo-ga Δ inu-o   hirotta   to] itteita-yo, **ano kooen-{de/Ø}**
        Hanako-Nom Taroo-Nom dog-Acc picked.up C said-Prt that park-in

    '*Lit*. Hanako said [that Taroo picked up a dog Δ], **(in) that park**'

The second similarity between SRD and PRD is illustrated by the examples in (4). As shown in (4), if the dislocated phrase appears on the right-periphery of the embedded clause, the sentence becomes ungrammatical no matter whether the complementizer precedes or follows it. That is, SRD is restricted to the root clause (see Haraguchi 1973, Kuno 1978, Saito 1985, Abe 1999, and Tanaka 2001), and the same holds for PRD.

(4) a. *Hanako-ga [Taroo-ga Δ katta (to) **ano hon-{o/Ø}** (to)] omotteiru-yo
        Hanako-Nom Taroo-Nom   bought C   that book-Acc   C   think-Prt

    '*Lit*. Hanako thinks [that Taroo bought Δ, **that book**]'

b. *Hanako-ga　[Taroo-ga　Δ inu-o　　hirotta　　(to) **ano kooen-{de/Ø}** (to)]
Hanako-Nom Taroo-Nom　dog-Acc picked.up　C　that park-in　　　　C
omotteiru-yo
think-Prt

'*Lit*. Hanako thinks [that Taroo picked up a dog Δ, **(in) that park**]'

2.2.　Differences between SRD and PRD

Although SRD can participate in long-distance dependencies as shown in (3), it does exhibit island-sensitivity (see Simon 1989, Endo 1996, Abe 1999, and Tanaka 2001). T&K, however, observe that island-effects disappear when Case-markers of dislocated phrases are missing. For instance, the example in (5) indicates that a violation of the Complex NP Constraint is ameliorated if the dislocated phrase is not accompanied with the accusative Case-marker *-o* (based on Tanaka and Kizu 2007:221; judgments are theirs).

(5)　　　*Taroo-ga　[$_{NP}$[$_{TP}$ Hanako-ga　Δ ageta] hito]-o　　sagasiteita-yo,　　**ano**
Taroo-Nom　　Hanako-Nom　gave　person-Acc was.looking.for-Prt　that
ronbun-{*o/$^?$Ø}
paper-Acc

'*Lit*. Taroo was looking for the person who Hanako gave Δ, **that paper**'

Similar effects are observed for examples like (6a), which involves an adjunct island, and (6b), where the postposition *-de* 'in' is intended to be missing.

(6)　a.　[Taroo-ga　Δ suteta　　kara]　Hanako-ga　totemo okotteiru-yo, **ano**
　　　Taroo-Nom　discarded because Hanako-Nom very　is.angry-Prt　that
hon-{*o/Ø}
book-Acc

'*Lit*. [Because Taroo discarded Δ], Hanako is very angry, **that book**'

b.　Hanako-ga　[[Δ inu-o　　hirotta]　hito]-o　　sitteiru-yo, **ano kooen-{*de/Ø}**
Hanako-Nom　　dog-Acc picked.up person-Acc know-Prt　that park-in

'*Lit*. Hanako knows [the person [who picked up a dog Δ]], **(in) that park**'

Thus, PRD behaves differently from SRD with respect to island-sensitivity.

The second difference has to do with reconstruction effects. Let us first consider the example in (7), adapted from Tanaka and Kizu (2007:222). T&K observe that the anaphor *zibun* 'self' within the dislocated element can be bound by either the matrix subject or the embedded subject in SRD, while it can only be bound by the matrix subject if the Case-marker is missing. Put differently, PRD exhibits "half-way" reconstruction (Tanaka and Kizu 2007:224).

(7)   Taroo-ga$_i$ [Hanako-ga$_j$ Ziroo-kara   Δ moratta   to] itteita-yo,
       Taroo-Nom   Hanako-Nom Ziroo-from   received   C   said-Prt
       {zibun-no$_{i/j}$ ronbun-o/zibun-no$_{i/*?j}$ ronbun-Ø}
        self-Gen   paper-Acc self-Gen   paper

       '*Lit*. Taroo said [that Hanako received Δ from Ziroo], **self's paper**'

However, there are speakers including me who do not share their judgments: For them, neither of the subjects in (7) can antecede *zibun* 'self' if the Case-marker is absent. That is, SRD exhibits reconstruction effects, while PRD never does.

This pattern of judgments is confirmed by the examples in (8) and (9). The examples in (8) indicate that anaphors other than *zibun* 'self' within the dislocated phrases can be bound via reconstruction in SRD but not in PRD. Similarly, (9) shows that variable-binding is possible in SRD (see Abe 1999), while it is not in PRD.

(8)   a.   Taroo-ga$_i$ [Hanako-ga$_j$ Δ semeta   to] itteita-yo,   **zibunzisin-{o/*Ø}$_{i/j}$**
           Taroo-Nom   Hanako-Nom   blamed   C   said-Prt   self-Acc

           '*Lit*. Taroo said [that Hanako blamed Δ], **self**'

      b.   [Taroo to   Hanako]-ga$_i$ Δ uta-o   utatta-yo,   **otagai-no$_i$ ie-{de/*Ø}**
            Taroo and Hanako-Nom   song-Acc sang-Prt   each.other-Gen   house-in

           '*Lit*. Taroo and Hanako sang a song Δ, **(in) each other's house**'

(9)   a.   [Subete-no gaka]-ga$_i$ Δ hometa-yo, **sono$_i$ hito-no   sakuhin-{o/*Ø}**
            all-Gen   painter-Nom   praised-Prt   that person-Gen   work-Acc

           '*Lit*. Every painter praised Δ, **his work**'

      b.   [Subete-no kodomo]-ga$_i$ Δ uta-o   utatta-yo,   **sono$_i$ ko-no   ie-{de/*Ø}**
            all-Gen   child-Nom   song-Acc sang-Prt   that child-Gen house-in

           '*Lit*. Every child sang a song Δ, **(in) his house**'

In the rest of this paper, I focus on this type of speaker.

The final difference between SRD and PRD comes from the behaviors of the gap. Tanaka (2001) observes that in SRD, the gap can be overtly filled by an overt pronoun or a full-fledged phrase identical to the dislocated one (indicated by italics) as in (10).

(10) a.   Taroo-ga   {*sore-o/LGB-o*}   yonda-yo, **LGB-o**
          Taroo-Nom   it-Acc LGB-Acc read-Prt   LGB-Acc

          '*Lit*. Taroo read *it*/*LGB*, **LGB**'

   b.   Taroo-ga   {*soko-de*/*ano kooen-de*} inu-o   hirotta-yo,   **ano kooen-de**
       Taroo-Nom there.in that park-in   dog-Acc picked.up-Prt that park-in

       '*Lit*. Taroo picked up a dog *there*/*in that park*, **(in) that park**'

The examples in (11) indicate that when the Case-marker/postposition is missing, such "doubling" is possible with overt pronouns but quite degraded with identical phrases.

(11) a.   Taroo-ga   {*sore-o*/^{??}*LGB-o*}   yonda-yo, **LGB-Ø**
         Taroo-Nom it-Acc   LGB-Acc read-Prt   LGB-Acc

         '*Lit*. Taroo read *it*/*LGB*, **LGB**'

        b.   Taroo-ga   {*soko-de*/^{??}*ano kooen-de*} inu-o   hirotta-yo,   **ano kooen-Ø**
         Taroo-Nom there.in   that park-in   dog-Acc picked.up-Prt that park-in

         '*Lit*. Taroo picked up a dog *in that park*, **(in) that park**'

That is, PRD resists doubling of identical phrases.

The table in (12) summarizes the observations made so far. In the next section, I propose an analysis that can capture these observations.

(12) Table 1: Data summary

	SRD	PRD	Ex.
Long-distance dependency	yes	yes	(3)
Root restriction	yes	yes	(4)
Island-sensitivity	yes	no	(5)/(6)
Reconstruction effects	yes	no	(8)/(9)
Doubling of identical phrases	yes	??	(10)/(11)

3.   Proposals and Analysis

3.1.   Proposals

Before making specific proposals, let us review some of the previous approaches to Japanese right dislocation, as they constitute the basis of the analysis to be proposed. There are at least two kinds of major approaches, schematically given in (13). Under the approach in (13a), which is called the double preposing approach (see Kurogi 2007, Fukutomi 2007; see also Abe 1999 for a discussion), the XP which ultimately appears in the post-verbal position first undergoes leftward movement, and then, the rest of the clause (labeled as α) undergoes remnant movement, yielding the XP-final order. On the other hand, the approach in (13b), which is called the repetition and deletion approach (see Abe 1999, Tanaka 2001; cf. Kuno 1978), assumes that a Japanese right dislocation sentence consists of two near-identical

clauses (S_1 and S_2). The surface string is argued to be derived via leftward movement of XP within S_2 followed by deletion of the rest of S_2.[4]

(13) a. *Double preposing approach*

$$[\text{XP}_i\ [_\alpha \ldots t_i \ldots \text{V}]] \ \rightarrow \ [[_\alpha \ldots t_i \ldots \text{V}]\ [\text{XP}_i\ t_\alpha]]$$

b. *Repetition and deletion approach*

$$[_{S1} \ldots \Delta_i \ldots \text{V}],\ [_{S2}\ \text{XP}_i\ \cancel{\ldots t_i \ldots \text{V}}]$$

Although these approaches have certain advantages over the other, neither can successfully capture the observations made in Section 2, simply because they do not distinguish PRD from SRD (T&K's analysis is reviewed in Section 3.3).[5]

In this paper I assume without further discussion that the properties of SRD are best analyzed in terms of the repetition and deletion approach (see Takita 2011 and Yamashita 2011 for recent arguments). To capture the properties of PRD, then, I propose that their properties can be captured by the double preposing approach with a modification. Specifically, I claim that PRD is derived from the bare-topic construction (see Taguchi 2009), exemplified in (14), in the manner depicted in (15) (bare-topics are boxed).

(14) a. Ano hon-Ø, Taroo-ga Δ katta-yo
that book Taroo-Nom bought-Prt

'*Lit*. That book, Taroo bought Δ'

b. Ano kooen-Ø, Taroo-ga Δ inu-o hirotta-yo
that park Taroo-Nom dog-Acc picked.up-Prt

'*Lit*. That park, Taroo picked up a dog Δ'

c. Ano saihu-Ø, Taroo-ga Δ okane-o nusunda-yo
that wallet Taroo-Nom money-Acc stole-Prt

'*Lit*. That wallet, Taroo stole money Δ'

---

[4] See also Kayne (1994), Endo (1996) and Whitman (2000) for different implementations. Abe (1999) and Tanaka (2001) assume that the empty element within S_1 is *pro*, while Takita (2011) points out that it can be a result of ellipsis. I use Δ to suppress such analytical differences.

[5] It is also proposed in the literature that the dislocated phrase undergoes rightward movement (see, for instance, Haraguchi 1973, Simon 1989, and Murayama 1999), or is base-generated in the right-edge of the clause (see, for instance, Sells 1999, Soshi and Hagiwara 2004). Takano (2010) proposes a PF-based analysis building on a different set of data (for instance, he assumes that SRD is *not* island-sensitive). Although I do not review these approaches for reasons of space, it is worth noting that they share with the approaches in (13) the same problem regarding PRD (but see Section 3.3 for a potential variant of the base-generation approach).

(15) a.   [α bare-topic$_i$ [β … Δ$_i$ … V]]   (cf. (14))

    b.   [[β … Δ$_i$ … V] [α bare-topic$_i$ $t_β$]]   (cf. (2))

I assume, following Taguchi (2009), that bare-topics are base-generated in the left-periphery, and related to the gap via non-movement dependency (cf. Kuno's (1973) aboutness relation).[6] Then, once the constituent labeled as β in (15a) undergoes movement across the bare-topic, the surface string of PRD results, as in (15b). In the next subsection, I illustrate how the proposed analysis can capture the properties of PRD.

3.2.   Analysis

Let us start with the root restriction of PRD. As we have seen in (4) above, PRD is restricted root clauses. Taguchi (2009) observes that the bare-topics are also restricted to root clauses (see Taguchi 2009 for an account of the root restriction on bare-topics). For instance, the examples in (16) are ungrammatical, which are putative derivational sources of the examples in (4) under the proposed analysis.

(16) a. *Hanako-ga   [ano hon-Ø,   Taroo-ga   Δ katta   to] omotteiru-yo
         Hanako-Nom   that book   Taroo-Nom   bought C think-Prt

        '*Lit*. Hanako thinks [that that book, Taroo bought Δ]'

    b. *Hanako-ga   [ano kooen-Ø,   Taroo-ga   Δ inu-o   hirotta   to] omotteiru-yo
         Hanako-Nom   that park   Taroo-Nom   dog-Acc picked.up C think-Prt

        '*Lit*. Hanako thinks [that that park, Taroo picked up a dog Δ]'

Hence, the root restriction on PRD is readily captured.

By assumption, bare-topics and their corresponding gaps are related via non-movement dependency. Hence, they can participate in long-distance dependencies as shown in (17), and they are island-insensitive as the examples in (18) indicate.

(17) a.   Ano hon-Ø,   Hanako-ga   [Taroo-ga   Δ katta   to] itteita-yo
         that book   Hanako-Nom Taroo-Nom   bought C said-Prt

        '*Lit*. That book, Hanako said [that Taroo bought Δ]'

    b.   Ano kooen-Ø,   Hanako-ga   [Taroo-ga   Δ inu-o   hirotta   to] itteita-yo
         that   park   Hanako-Nom Taroo-Nom   dog-Acc picked.up C said-Prt

        '*Lit*. In that park, Hanako said [that Taroo picked up a dog Δ]'

---

[6] I leave open the precise status of the gap in the bare-topic construction, although Taguchi (2009) assumes that it is *pro*.

(18) a. <u>Ano hon-Ø</u>, Hanako-ga [Taroo-ga Δ suteta kara] totemo okotteiru-yo
       that book   Hanako-Nom Taroo-Nom discarded because very is.angry-Prt

     '*Lit*. <u>That book</u>, [because Taroo discarded Δ], Hanako is very angry'

   b. <u>Ano kooen-Ø</u>, Hanako-ga [[Δ inu-o hirotta] hito]-o sitteiru-yo
       that park   Hanako-Nom dog-Acc picked.up person-Acc know-Prt

     '*Lit*. <u>That park</u>, Hanako knows [the person [who picked up a dog Δ]]'

Since the examples in (17) and (18) can serve as the derivational sources of the PRD examples in (3) and (5), respectively, the availability of long-distance dependency and the island-insensitivity of PRD automatically follows.

Let us now turn to the reconstruction effects. As shown in (19) and (20), bare-topics never exhibit reconstruction effects either for anaphors or for bound variables. Since bare-topics are base-generated in the left-periphery by assumption, the required c-command relations are never attested, hence the ungrammaticality of the relevant examples.

(19) a. *<u>Zibunzisin-Ø</u>$_{i/j}$, Taroo-ga$_i$ [Hanako-ga$_j$ Δ semeta to] itteita-yo
       self   Taroo-Nom Hanako-Nom   blamed C said-Prt

     '*Lit*. <u>Self</u>, Taroo said [that Hanako blamed Δ]'

   b. *<u>Otagai-no</u>$_i$ ie-Ø, [Taroo to Hanako]-ga$_i$ Δ uta-o utatta-yo
       each.other-Gen house Taroo and Hanako-Nom   song-Acc sang-Prt

     '*Lit*. <u>Each other's house</u>, Taroo and Hanako sang a song Δ'

(20) a. *<u>Sono$_i$ hito-no sakuhin-Ø</u>, [subete-no gaka]-ga$_i$ Δ hometa-yo
       that   person-Gen work   all-Gen painter-Nom   praised-Prt

     '*Lit*. <u>His work</u>, every painter praised Δ'

   b. *<u>Sono$_i$ ko-no ie-Ø</u>, [subete-no kodomo]-ga$_i$ Δ uta-o utatta-yo
       that   child-Gen house all-Gen   child-Nom   song-Acc sang-Prt

     '*Lit*. <u>His house</u>, Every child sang a song Δ'

Under the proposed analysis, the PRD counterparts of (19) and (20) (see (8) and (9)) are derived by movement of the rest of the clause (namely the β-part of (15a–b)) across the bare-topics. The lack of reconstruction effects in PRD are then readily accommodated since such movement never establishes the required c-command relations. That is, the elements in the dislocated phrase are never bound because they are not c-commanded by the elements contained within the rest of the clause at any point of the derivation.

Finally, the pattern of doubling in PRD follows from the fact that the bare-topic construction allows the gap to be realized as an overt pronoun while it results in marginality with an identical full-fledged phrase, as shown in (21).

(21) a. 　LGB-Ø　, Taroo-ga　　{*sore-o*/[??]*LGB-o*}　　yonda-yo
　　　　　LGB　　　Taroo-Nom　it-Acc　LGB-Acc　read-Prt

　　　　'*Lit*. 　LGB　, Taroo read *it*/*LGB*'

　　　b. 　Ano　kooen-Ø　, Taroo-ga　　{*soko-de*/[??]*ano kooen-de*} inu-o　　hirotta-yo
　　　　　that　park　　　Taroo-Nom　there-in　that park-in　　dog-Acc　picked.up-Prt

　　　　'*Lit*. 　That park　, Taroo picked up a dog *there*/*in that park*'

Since the examples in (21) are the putative source of the PRD examples in (10), their ungrammaticality can be captured.[7]

3.3. Notes on (Potential) Alternatives

Having established the close connection between PRD and the bare-topic construction, this subsection examines some potential alternative analyses.

As a first hypothetical alternative, suppose that PRD has a schematic structure given in (22), where a bare-NP (namely a nominal without a Case-marker or postposition) is directly base-generated in the *right*-periphery of the sentence.

(22)　　　[… Δ_i … V] NP-$Ø_i$

Assuming that the NP is related to the gap via non-movement dependency, this analysis can achieve essentially the same results that the proposed analysis does for island-insensitivity and lack of reconstruction effects.
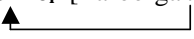
Nonetheless, the proposed analysis is superior to this alternative in the following respects. First, given the strict head-finality of Japanese, this alternative should stipulate that rightward base-generation is somehow restricted to root clauses. Second, this alternative must attribute all the properties of PRD to the fact that the "dislocated" element is indeed base-generated in the right-periphery. It seems, however, hard to test such a claim on independent grounds. On the other hand, the proposed analysis clearly predicts that PRD and the bare-topic construction behave exactly in the same way: For instance, it is predicted that when Case-markers/postpositions on right dislocated phrases fail to be missing (see footnote 2), such Case-markers/postpositions are also fail to be missing in the corresponding bare-topic construction counterparts, while such predictions are never available for the alternative in question. Hence, pursing this alternative does not seem promising.

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[7] At this point I have no concrete account for why the bare-topic construction resists doubling of identical phrases. I leave it for future research (but see Section 4.1).

The second hypothetical alternative is a combination of the repetition and deletion approach and the idea that PRD is derived from the bare-topic construction.[8] (23) illustrates a schematic structure of PRD under this analysis. In (23), the bare-topic construction is repeated as S_2, and everything except the bare-topic is deleted, yielding the desired word order of PRD.

(23) $[_{S1} \dots \Delta_i \dots V]$, $[_{S2}$ ~~bare-topic~~$_i$ ~~$[\dots A_i \dots V]$~~$]$

Since the bare-topic construction is involved, this analysis can capture the following three properties of PRD in the same way as the proposed analysis does: the root restriction, island-insensitivity, and the lack of reconstruction. This analysis cannot accommodate the pattern of doubling, however. To see this point, let us consider how the original repetition and deletion approach captures the fact about the full possibility of doubling in SRD. As we have seen in (10), SRD allows the gap to be overtly filled by an overt pronoun or a full-fledged phrase identical to the dislocated one (the relevant example is repeated as (24a)). According to Tanaka (2001), this is possible because (24a) can have something like (24b) as its underlying source under the repetition and deletion approach. In (24b), S_1 contains a pronoun/full-fledged phrase instead of a gap, and this is possible because S_1 and S_2 are independent from each other. Then, the alternative under discussion wrongly predicts that PRD parallels SRD, because nothing prevents the gap within S_1 in (23) from being overtly realized as in (24c), which is as acceptable as (24b).
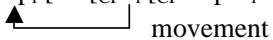
(24) a.   Taroo-ga   {*sore-o*/*LGB-o*}   yonda-yo,   **LGB-o**
           Taroo-Nom   it-Acc LGB-Acc   read-Prt   LGB-Acc

     '*Lit*. Taroo read *LGB*, **LGB**'

    b. $[_{S1}$ Taroo-ga {*sore-o*/*LGB-o*} yonda-yo], $[_{S2}$ **LGB-o$_i$** [Taroo-ga t_i yonda-yo]]

    c. $[_{S1}$ Taroo-ga {*sore-o*/*LGB-o*} yonda-yo], $[_{S2}$ **LGB-Ø$_i$** [Taroo-ga Δ_i yonda-yo]]

Hence, this alternative is not adequate at least empirically.[9]

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[8] I thank Chizuru Nakao (p.c.) for pointing out this possibility.
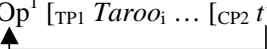
[9] A deeper question is why the structure in (23) is not available. One potential answer is that deletion within S_2 fails to be licensed. There are at least two possible ways of achieving this result. The first one is to attribute the impossibility of deletion to the fact that clausal ellipsis requires some focalized elements to be remnants in many cases (see Merchant 2001, van Craenenbroeck and Lipták 2006, among many others). Since bare-topics cannot be focused, ellipsis cannot be licensed. The other is to relate it to the fact that bare-topics are base-generated elements; they cannot license ellipsis because they are base-generated so that they fail to establish an agreement relation with a functional head, which has been considered to be one of the crucial requirements for ellipsis licensing (see Lobeck 1990, Saito and Murasugi 1990). Although this is an important issue, addressing it is beyond the scope of this paper.

The final alternative to be discussed is the analysis proposed by T&K. They argue that a sentence of long-distance Case-less right dislocation (namely our PRD) should involve what they call mixed A'-chains. In particular, they propose a schematic derivation in (25). In this approach, the thematic position is occupied by *pro*, and a null operator is base-generated in the adjoined position of embedded CP, binding *pro*, as in (25a). Then, the null operator undergoes movement to an appropriate position in order to be licensed.

(25) a.   [… [$_{CP}$ Op$_i$ [$_{CP}$ …pro$_i$ …]] …] NP$_i$
         binding

      b.   Op$_i$ [… [$_{CP}$ t_i [$_{CP}$ …pro$_i$ …]] …] NP$_i$
         movement

The resulting chain is called "mixed" because it consists of a binding relation and a movement relation (see also Kizu 2005 and references cited therein).

T&K's analysis is especially designed to capture their judgments about reconstruction found in (26a) (see (7)). Recall that for them the anaphor within the dislocated element can be bound by the matrix subject but not by the embedded subject. They try to capture this observation by assigning a partial structure like (26b) to (26a) (the mixed A'-chain relation among Op, the trace of Op, and *pro* are indicated by the superscripted numeral).

(26) a.   Taroo-ga$_i$ [Hanako-ga$_j$ Ziroo-kara Δ moratta   to] itteita-yo, **zibun-no$_{i/*?j}$**
           Taroo-Nom Hanako-Nom Ziroo-from   received C said-Prt   self-Gen
           ronbun-Ø
           paper

      '*Lit*. Taroo said [that Hanako received Δ from Ziroo], **self's paper**'

      b.   [$_{CP1}$ Op^1 [$_{TP1}$ *Taroo$_i$* … [$_{CP2}$ t^1 [$_{CP2}$ [$_{TP2}$ *Hanako$_j$* … pro^1 …]]]]] *self's$_{i/*?j}$ paper*

In (26b), the null operator moves from the embedded CP-adjoined position, so that reconstruction can take place to the position below *Taroo*, but not to the position below *Hanako*. In this way their analysis captures the "half-way" reconstruction pattern found in (26a).

Recall that this paper focuses on the speakers who do not share the crucial judgments for the relevant cases with T&K (see (8) and (9)). Hence, it is not possible to evaluate their analysis on this point. Instead, I point out some potential problems of their analysis. First, although they are not explicit about it, they seem to assume that the bare-NP in (25) is base-generated in the right-periphery. Hence, their analysis carries over the problems of the direct rightward generation approach discussed above.

A more important problem has to do with the root restriction of PRD. T&K indeed argue that the schematic derivation in (25) is available not only for right dislocation with Case-less NPs but also for cleft constructions with bare-NP pivots and relative clauses (see footnote 3). As shown in (27), the latter two constructions are not restricted to root clauses (the NPs which structurally correspond to the ones in Case-less right dislocation are given in boldface).

(27) a. Taroo-ga   [[Hanako-ga [Ziroo-ga   Δ yonda to] omottieru no]-ga **kono**
         Taroo-Nom   Hanako-Nom Ziroo-Nom   read   C think   C-Nom this

    hon da   to] itta
    book Cop C   said

    'Taroo said that [it is **this book** [that Hanako thinks [that Ziroo bought]]]'

    b. Taroo-ga [[Hanako-ga [Ziroo-ga Δ yonda to] omotteiru] **hon**]-o   katta
        Taroo-Nom Hanako-Nom Ziroo-Nom read   C think   book-Acc bought

    'Taroo bought [the **book** [that Hanako thinks [Ziroo read]]]'

Then, it becomes unclear how their analysis prevents PRD from being embedded on a par with these two constructions.

To summarize this section, I proposed an analysis of PRD which closely relates it to the bare-topic construction. I also examined three potential alternatives to the proposed analysis, and pointed out that all of them have certain conceptual and empirical problems. In the next section, I argue that the proposed analysis can offer interesting implications if we turn our attention to the relation between the bare-topic construction and Hanging Topic constructions.

4.   The Relation between Bare-Topics and Hanging Topics and Its Implications

4.1.   Bare-Topics as Hanging Topics

Hanging Topic constructions are found in various Romance and other languages, where a topic phrase appears in the sentence initial position and is resumed by a certain kind of element such as pronouns within the sentence following it. Some concrete examples are given in (28).[10]

(28) a.   *Italian* (based on Cinque 1983, his (1))
          Tuo fratello, invece, *lui* si   che aveva   sempre fame
          your brother however him yes that (he) was always hungry

---

[10] Hanging Topics are boxed, and the elements resuming them are given in italics. The symbol # in (28c) and the examples to be provided in the text indicates an intonational break. Almost all the authors I am relying on for the data to be presented in this section explicitly note that such a phonological break is observed between a Hanging Topic and the rest of the sentence in the languages under discussion, which is also observed for the bare-topic construction.

b. *Colloquial Bulgarian* (based on Krapova and Cinque 2008: 257)

Tja	i	bez	tova	ne	moga	da	*ja*	nakaram
she.Nom	and	without	that	not	can.1sg	Mod.Prt	her.Cl.Acc	make.1sg

da	jade
Mod.Prt	eat.3sg

'Her, anyway, I cannot make *her* eat'

c. *German* (based on Grohmann 2000a:140)

Deiser	Satz,	# ich	mag	*ihn*	besonders
this.Nom	sentence	I	like	him	especially

'This sentence, I like *it* especially'

In Hanging Topic constructions, only NPs (or more precisely DPs) are allowed to be dislocated, unlike other kinds of left-dislocation constructions such as Clitic Left-Dislocation (see Cinque 1977, 1990, to name a few), where various XPs including PPs can be dislocated (as long as appropriate resumptive elements can resume them). In the rest of this subsection, I substantiate the claim that the bare-topic construction is subsumed under Hanging Topic constructions by showing that the properties of the former discussed in the previous sections are also found in the latter.[11]

The first property to be discussed is the root restriction (see (16)). Just like bare-topics, Hanging Topics are restricted to root clauses, as in (29).

(29) a. *Italian* (based on Cinque 1983, his (11))

*Credo	che	Mario,	*lui*	non	venga
I.think	that	Mario	he	won't come	

b. *Colloquial Bulgarian* (base on Krapova and Cinque 2008:259)

(*Ivan	kaza	če)	Toj	ne	mogat	da	*go*	prikrepjat
Ivan	said	that	he.Nom	not	can.3pl	Mod.Prt	him.Cl.Acc	attach.3pl

kam	nikogo
to	nobody

'(Ivan said that) him, they cannot attach *him* to anyone'

c. *German* (based on Grohmann 2000a:145)

*Ich	glaube,	dieser Satz,	wir	haben	*ihn*	nun	alle	satt
I	believe	this sentence	we	have	it	now	all	enough

'I believe this sentence, we've all had enough of *it* by now'

---

[11] In fact, Endo (2007) has already suggested a similarity between bare-topics in Japanese and Hanging Topics in Italian. Thus, the attempts to be made in the text can be conceived as a concrete extension of his idea.

Second, Hanging Topics do not exhibit reconstruction effects, as the examples in (30) and (31) indicate. The a-examples in (30) and (31) indicate that anaphors within the Hanging Topics cannot be licensed. In the b-examples in (30) and (31), the intended bound variable readings are not available.

(30) *German* (based on Grohmann 2000a:141-142)

    a. *[Freunde von einander], Herforder erzählen *ihnen* selten Lügen
       friend of each.other Herfordians tell them rarely lies

     '[Friend of each other], Herfordians rarely tell *them* lies'

    b. *[Sein Vorgarten], jeder Herforder Bürger mag *ihn*
       his front.lawn every Herfordian dweller like it

     '[His front lawn], every Herfordian likes *it*'

(31) *Greek* (based on Anagnostopoulou 1997:155)

    a. *[O eaftos tu] # o Jannis den *ton* frontizi
       the self.Nom his the John.Nom not Cl.Acc take.care.3sg

     '[Himself], John doesn't take care of'

    b. [I mitera tu]$_{*j/i}$ # kathenas$_j$ *tin* agapai
       the mother.Nom his everyone Cl.Acc love.3sg

     '[His mother], everyone loves'

In this respect, too, the bare-topic construction patterns with Hanging Topic constructions (see (19) and (20)).

Third, recall that the bare-topic construction is island-insensitive (see (18)). Hanging Topics constructions are also known to be island-insensitive cross-linguistically, as indicated by the grammaticality of the examples in (32).[12]

(32) a. *Italian* (based on Cinque 1983, his (13))
     [Giorgio], non conosco la ragazza che *lui* vuole sposare
     Giorgio I don't know the girl that he wants to marry

    b. *Colloquial Bulgarian* (base on Krapova and Cinque 2008:263)
     [Ivan] # Marija izbjaga, kato *mu* dade rozata
     Ivan Maria ran.away.3sg when him.Cl.Dat gave.3sg rose.art

     '[As for] [Ivan], Maria ran away after giving *him* the rose'

---

[12] Shaer and Frey (2004) use the symbol ↓ in (32c) to indicate a prosodic break, which I believe corresponds to the one indicated by #.

    c.   *German* (based on Shaer and Frey 2004:472)

       Peter, ↓ Maria hasst das Gerücht, dass die Maffia *ihm* geholfen hat
       Peter   Maria hates the rumor that the Mafia him helped has

       'Peter, Maria hates the rumor that the Mafia helped *him*'

Let us now consider the patterns of doubling in Hanging Topic constructions. In the examples discussed so far, Hanging Topics are resumed by pronouns or clitics. As shown in (33), even epithets can resume them. However, the phrases identical to Hanging Topics are not appropriate as resuming elements, as the degraded status of (34) indicates.[13]

(33) a. *Italian* (based on Benincà and Poletto 2004:65)

       Mario, non daro piu   soldi a *quell'imbecille*
       Mario, not give anymore money to that idiot

       'Mario, I won't give more money to *that idiot*'

    b. *Colloquial Bulgarian* (based on Krapova and Cinque 2008:261)

       Maria az izobšto njama da   govorja s   *taja patka* veče
       Maria I at.all   will.not Mod.Prt talk.1sg with this fool   already

       '[As for] Maria, I will not talk to *this fool* any more'

(34)   *Italian* (Giuliano Bocci, p.c.)

       ?Mario, non daro piu   soldi a *Mario*
       Mario, not give anymore money to Mario

       'Mario, I won't give more money to *Mario*'

As we have seen above, the bare-topic construction allows the gap to be realized as pronouns but not as full-fledged phrases. The example in (35) confirms this observation, further showing that the gap can be realized as an epithet.[14]

(35)   **Taroo-Ø**, boku-wa mou   {Δ/*kare-ni*/*ano baka-ni*/$^{??}$*Taroo-ni*} okane-o
       Taroo   I-Top   anymore   him-to that idiot-to Taroo-to   money-Acc
       age-nai
       give-Neg

       '*Lit*. **Taroo**, I won't give more money Δ/*to him*/*to that idiot*/*to Taroo*'

---

[13] I thank Giuliano Bocci (p.c.) for making judgments on this example.

[14] One may wonder whether there is a significant difference between the status of (34) and that of (35) (namely, "?" vs. "??"). I assume that there is no significant difference, because even in Japanese, the marginality of the relevant examples shows much individual variation. Nonetheless, none of my informants accepts doubling of identical phrases as equally as that of pronouns/epithets. I believe the situation is similar for Italian (or other languages).

Therefore, the bare-topic construction again behaves like Hanging Topic constructions with respect to the patterns of doubling.

The final property examined here is the fact that a part of idiom chunks cannot be a Hanging Topic. Some concrete examples are given in (36).

(36) a. *German* (based on Grohmann 2000a:144)
      *Der Kopf, der Alex hat *ihn* gestern   der Maria verdrecht
      the head   the Alex has it   yesterday the Maria twisted

      'Maria's head, Alex turned it yesterday'

   b. *Greek* (based on Anagnostopoulou 1997:155)
      *I tixi   tu   # kathe ftoxos *tin*   ekane pigenontas stin Ameriki
      the luck.Nom his.Gen every poor Cl.Acc made going   to.the States

      'The poor made their luck/fortune by going to the States'

As is expected, a part of idiom chunks cannot be bare-topics as well, as in (37). The grammaticality of (37a) indicates that the idiom *kimo-o hiyas-* can be split up by scrambling. On the other hand, its bare-topic construction counterpart is ungrammatical as in (37b).[15]

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[15] As shown in (i), a contrast similar to the one found in (37) is also observed between SRD and PRD. That is, SRD is grammatical with a part of idiom chunks while PRD is not (I thank Keiko Murasugi for raising this issue).

(i)   Minna-ga sono ziko-ni   Δ hiyasita-yo, **kimo-{o/*Ø}**
       all-Nom that accident-Dat   chilled-Prt chlokyst-Acc

       '(intended) Everyone was frightened at the accident'

    One complication arises from Tanaka's (2001) observation given in (ii) (adapted from Tanaka 2001:575 with his judgment). He observes that SRD with a part of idiom chunks is possible only if the gap is realized as a full-fledged phrase.

(ii)   John-ga   {*hara-o*/$^{??}$Δ}   tateta-yo,   **hara-o**
      John-Nom stomach-Acc set.up-Prt stomach-Acc

      '(intended) John got upset'

According to Tanaka (2001), this is because something like (iiia) underlies (ii) with the gap, where *pro* and the verb in S_1 do not constitute a complete idiom. On the other hand, (ii) with the full-fledged phrase has (iiib) as its underlying form, where both S_1 and S_2 contain a complete idiom.

(iii) a.   [$_{S1}$ John-ga *pro* tateta-yo], [$_{S2}$ hara-o$_i$ [John-ga t_i tateta-yo]]

    b.   [$_{S1}$ John-ga hara-o tateta-yo], [$_{S2}$ hara-o$_i$ [John-ga t_i tateta-yo]]

Although Tanaka's (2001) argument is sound, it is not compatible with the high acceptability of the SRD version of (i). Meanwhile, Takita (2011) argues that the gap may be derived via ellipsis. Then, if ellipsis can target a part of an idiom within S_1 (such as *hara-o* in (iiib)), nothing seems to prevent the

(37) a. Kimo-o_i,   minna-ga sono ziko-ni t_i hiyasita-yo
       liver-Acc all-Nom   that   accident-Dat   chilled-Prt

       '(intended) Everyone was frightened at the accident'

   b. *Kimo-Ø,   minna-ga sono ziko-ni   Δ hiyasita-yo
       liver   all-Nom   that   accident-Dat   chilled-Prt

To sum up, all the properties of the bare-topic construction are also found in Hanging Topic constructions, supporting the idea that the former is subsumed under the latter. Putting aside the root restriction (but see footnote 17) and the marginality of doubling with identical phrases, the other properties straightforwardly follow from the idea that bare-topics and Hanging Topics are both base-generated in the left-periphery and related to the gap via non-movement dependency.

4.2. Some Implications

Having substantiated the perspective that equates the bare-topic construction in Japanese with Hanging Topic constructions found in various other languages, I discuss some implications of the current perspective.

The first implication has to do with the lack of Case-connectivity in Hanging Topic constructions. Let us consider the examples in (38), repeated from (28b–c).

(38) a. Tja   i   bez   tova ne   moga da   *ja*   nakaram
       she.Nom and without that   not can.1sg Mod.Prt her.Cl.Acc make.1sg
       da   jade
       Mod.Prt eat.3sg

       'Her, anyway, I cannot make *her* eat'

   b. Deiser Satz,   # ich mag *ihn* besonders
       this.Nom sentence   I   like   him   especially

       'This sentence, I like *it* especially'

In Hanging Topic constructions, the Case of the topic can differ from that of its corresponding element within the clause. For instance, in (38a), the topic *tja* is marked as nominative, while the corresponding clitic *ja* is marked as accusative. Given that Hanging Topics tend to bear the default (or, unmarked) Case of the language (see, for instance, Boeckx and Grohmann 2005, Krapova and Cinque 2008), our claim that equates bare-topics with Hanging Topics implies that no-marking is the default option in Japanese.

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part of the idiom from appearing in SRD. In fact, the contrast in (ii) is much weaker than the one found in (i). Hence, I assume that the derivation employing ellipsis sketched above is indeed available, and the reported contrast in (ii) is due to some independent factors.

The second implication concerns the word order restriction found in Hanging Topics constructions. As shown by the examples in (39), Hanging Topics must precede the elements that have been moved from within the clause.

(39) a. *Italian* (based on Benincà and Poletto 2004:65)
(Giorgio,) ai nostri amici, (*Giorgio,) non parlo mai di *lui*
Giorgio to the our friends Giorgio not talk never of him

b. *Colloquial Bulgarian* (based on Krapova and Cinque 2008:263)
(Az) mene (*az) ošte *me* e jad, če togava ne te
I.Nom me.Acc I.Nom still me.Cl.Acc is anger that then not you.Cl.Acc
poslušax
listened.1sg

'Me, *I* am still angry that you didn't listen to me'

c. *German* (based on Grohmann 2000a:146)
*Der Alex$_i$, den Wagen$_j$, die Mutter$_k$, den$_j$ hat *sie$_k$ ihm$_i$* geschenkt
the Alex the car the mother it has she him given

'Alex, the car, the mother, *she* gave it to *him*'

In (39a–b), the sentence becomes ungrammatical if the Hanging Topics *Giorgio* and *az* 'I' are preceded by the elements that have undergone Clitic Left Dislocation. The ungrammaticality of (39c) is due to the fact that the second Hanging Topic (namely *die Mutter* 'the mother') is preceded by *den Wagen* 'the car', which has undergone Contrastive Left Dislocation (Thráinsson 1979, Zaenen 1980, Altmann 1981; see also Anagnostopoulou 1997, Grohmann 2000a, b and references cited therein, among many others). Based on these observations, it has been proposed that nothing can be moved to a position higher than the position for Hanging Topics (see, for instance, Benincà and Poletto 2004).

Recall at this point that the proposed analysis of PRD requires a movement across a bare-topic, which is now regarded as an instance of a Hanging Topic under the current perspective (see (15b) above). Suppose that such a movement is possible in Japanese because it has scrambling. Then, it is predicted that in the languages discussed so far (which arguably lack Japanese-style scrambling) never allow Hanging Topics to appear in the right-periphery. Furthermore, if this prediction is shown to be borne out, the availability of Hanging Topics on the right periphery in turn can be conceived as a new diagnostic test for the availability of Japanese-style scrambling, in addition to the radical reconstruction property (Saito 1989).[16]

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[16] Yuji Takano (p.c.) points out that scrambling across a bare-topic is not allowed, as shown in (i), a fact which appears to be not compatible with the idea discussed in the text.

(i) *$^?$Inu-o$_i$ ano kooen-Ø, Taroo-ga Δ t_i hirotta-yo
dog-Acc that park Taroo-Nom picked.up-Prt

'*Lit*. A dog$_i$, that park, Taroo picked up t_i Δ'

That is, we can address whether Japanese-style scrambling is available for languages where its existence is highly controversial by examining whether Hanging Topics can appear in the right periphery in such languages.

Another implication, related but independent, also comes from the word order restriction illustrated in (39). Based on these and other observations, Benincà and Poletto (2004) propose that there are two kinds of "topic" positions in the left periphery. To be more specific, they argue that the highest position in the left periphery is reserved exclusively for base-generated topics (namely Hanging Topics), while the lower topic position functions as a landing site for elements that have undergone movement (for instance, Clitic Left Dislocation), as schematically shown in (40).[17]

(40)   [Hanging Topic [$_{\text{ForceP}}$ [... [(Clitic) Left Dislocation$_i$ [... [$_{\text{IP}}$ ... t_i ...]]]]]]
        └── base-generation   └──────────────────────┘ movement

That is, languages like Italian allow two strategies for topic-related elements, and correspondingly there are two positions for them depending on which strategy is taken.

As for Japanese, many researchers have argued that topics marked with -*wa* can appear in the sentence-initial position via movement or base-generation (see Saito 1985, Hoji 1985, among many others). The fact that -*wa*-marked topics are island-insensitive (Kuno 1973) as shown in (41a) has been taken as evidence for the claim that they can be base-generated and related to the gap via non-movement dependency. On the other hand, Hoji (1985) observes that -*wa*-marked topics exhibit reconstruction effects, indicating that they can undergo movement. For instance, (41b) allows the intended bound-variable reading (cf. (20a)).[18]

However, the degraded status of (i) does not necessarily indicate the impossibility of such scrambling. As briefly mentioned in footnote 10, there is a phonological break between a bare-topic and the rest of the sentence. Suppose that while scrambling in (i) blocks a proper assignment of the phonological break, movement across a bare-topic in PRD does not because the bare-topic ultimately appears in the sentence-final position, which is followed by a break by definition. If this account can be maintained, the degraded status of (i) ceases to be a problem for our approach.

[17] Benincà and Poletto (2004) suggest relating the root restriction on Hanging Topics to the fact that they are base-generated in the highest position in the left-periphery.

[18] Hoji (1985) notes that reconstruction effects are observed for *contrastive* topics but not for *thematic* topics. Based on this observation, he suggests that thematic topics are base-generated in the sentence-initial position while contrastive topics are moved to that position. In this respect, Hoji's (1985) dichotomy nicely corresponds to the one made by Benincà and Poletto (2004). However, Saito (2010), building on Kuroda (1988), observes that in certain cases the -*wa*-marked topics that have clearly undergone movement can be interpreted as thematic topics, obscuring Hoji's (1985) dichotomy. Hence, I gloss over these two interpretations of -*wa*-marked topics.

(41) a. Ano   sinsi-wa$_i$ [[[Δ$_i$ kiteiru]   yoohuku]-ga yogoreteiru]
      that gentleman-Top   is.wearing suit-Nom   dirty

      '*Lit*. That gentleman$_i$, the suit that Δ is wearing is dirty'

   b. Sono$_i$ hito-no   sakuhin-wa$_j$, [subete-no gaka]-ga$_i$ Δ$_j$ hometa
      that   person-Gen work   all-Gen   painter-Nom   praised

      '*Lit*. His work, every painter praised Δ'

Taken together with Benincà and Poletto's (2004) proposal, one novel question arises: *-wa*-marked topics are located in the same position, no matter whether it is base-generated or moved, or, they are in different positions depending on the ways by which they are introduced to the structure, just like Italian. If we are looking at topics marked with *-wa* only, it is not easy to tease apart these two possibilities. On the other hand, it becomes much easier to approach this question under the current perspective that equates bare-topics with Hanging Topics. Specifically, the properties of bare-topics discussed so far indicate that even in Japanese there is a position exclusively reserved for base-generated topics. Then, I suggest that even for *-wa*-marked topics, base-generated ones and moved ones occupy different positions.[19]

Finally, let us consider the cases of PRD and the bare-topic construction with multiple elements. (42) illustrates their schematic structures.

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[19] It is then further implied that right dislocation of *-wa*-marked NPs is structurally ambiguous between SRD and PRD. Therefore, it is predicted that it obeys the root restriction, exhibits island-insensitivity and reconstruction effects, and allows doubling. The following examples indicate that these predictions are borne out.

(i)   a. *Hanako-ga   [Taroo-ga   Δ katta   (to) **ano hon-wa**   (to)] omotteiru-yo
         Hanako-Nom Taroo-Nom   bought C that book-Top C   think-Prt

         '*Lit*. Hanako thinks [that Taroo bought Δ, **that book**]'

   b. [Taroo-ga   Δ suteta   kara]   Hanako-ga   totemo okotteiru-yo, **ano hon-wa**
      Taroo-Nom   discarded because Hanako-Nom very   is.angry-Prt   that book-Top

      '*Lit*. [Because Taroo discarded Δ], Hanako is very angry, **that book**'

   c. [Subete-no gaka]-ga$_i$ Δ hometa-yo, **sono$_i$ hito-no   sakuhin-wa**
      all-Gen   painter-Nom   praised-Prt that person-Gen work

      '*Lit*. every painter praised Δ, **his work**'

   d. Taroo-ga   {*sore-wa*/*LGB-wa*} yonda-yo, **LGB-wa**
      Taroo-Nom   it-Top   LGB-Top read-Prt   LGB-Top

      '*Lit*. Taroo read *it*/*LGB*, **LGB**'

See also Yamashita (2011) for other properties of right dislocation of *-wa*-marked elements.

(42) a.   [... Δ_i ... Δ_j ... V], NP-Ø$_i$, NP-Ø$_j$

     b.   [$_\alpha$ NP-Ø$_i$, NP-Ø$_j$, [$_\beta$ ... Δ_i ... Δ_j ... V]

Although SRD with multiple elements is indeed attested and investigated in the literature (see, for instance, Abe 1999), it is not an easy task to construct a clear paradigm of PRD with multiple elements (see footnote 16 for a potential source of complications). Similarly, it is not clear at this point whether multiple bare-topics are possible, because the relevant judgments are quite subtle and vary from example to example.

    Under the proposed analysis, PRD examples of the form in (42a) is derived from their bare-topic construction counterparts of the form in (42b). Given the claim that the bare-topic construction is subsumed under Hanging Topic constructions, we can tackle the issue concerning PRD and the bare-topic construction with multiple elements by looking at whether multiple Hanging Topics are allowed.

    Indeed, there is an interesting cross-linguistic variation regarding Hanging Topic constructions. As shown in (43), Italian disallows multiple Hanging Topics (Krapova and Cinque 2008:263 note that the same holds for Bulgarian).

(43) a. *Tuo fratello, Mario, *lei* ama   *lui*
        your brother Mario she loves him   (based on Cinque 1983, his (10))

     b. *Gianni, questo libro, non *ne* hanno   parlato a *lui*
        Gianni, this   book, they of-it haven't talked to him
                           (based on Benincà and Poletto 2004:64)

On the other hand, German allows multiple Hanging Topics, as the examples in (44) indicate.

(44) a. Alex$_i$, der Wagen$_j$, die Mutter$_k$, gestern   hat   *sie*$_k$ *ihm*$_i$ *den*$_j$ geschenkt
        Alex   the car   the mother yesterday has she him it   given

       'Alex, the car, the mother, yesterday *she* gave *it* to *him*'

                          (based on Grohmann 2000:145)

     b. Dem Alex, das Geld, du hättest   *es ihm*   nicht wegnehmen dürfen
        the   Alex the money you would.have it to.him not take.away   from

       'To Alex, the money, you should not have taken it away from him'

                        (based on Shaer and Frey 2004:490)

Given this cross-linguistic variation, it seems helpful to examine first whether Japanese belongs to the Italian/Bulgarian type or the German type in this respect, in order to investigate PRD and the bare-topic constructions with multiple elements on more solid grounds. Meanwhile, such attempts should provide a key in elucidating the source of the cross-linguistic variation. Although addressing these issues is beyond the scope of this paper and

deserves separate research, it is worth emphasizing that these research topics are achieved by the perspective that the bare-topic construction is subsumed under Hanging Topic constructions.

5.   Conclusion

In this paper, I first provided several properties of PRD, comparing it with SRD. Then, I argued that the properties of PRD can be captured by proposing that it is derived from the bare-topic construction. Second, illustrating that the bare-topic construction can be equated with Hanging Topic constructions found in various Romance and other languages, I pointed out that the current perspective offers a number of novel implications. Although more detailed investigations of these implications are necessary, this paper provides a fresh view to cross-linguistic studies of the syntax of topics.

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研究成果 2

Nanzan Linguistics 9 より

NOTES ON THE 'ARGUMENT TRANSFER' PROBLEM
FOR CONFIGURATIONAL θ-THEORY *

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1. Introduction

'Configurational' argument structure has been popular in generative syntax since Hale & Keyser's (1993) seminal work (see also Hale & Keyser 2002, Chomsky 1995, Baker 1997, Harley 2011). The grammatical process called Argument Transfer, which is found with a verbal noun construction in Japanese like (1) below, could pose an empirical problem for the *configurational* approach to argument structure.

(1)   Hiroshi-wa   sono ginkoo-kara genkin-no   goodatu-o   kokoromita
       Hiroshi-TOP   that bank-from   cash-GEN   stealing-ACC   attempted

       'Hiroshi attempted stealing of money in cash from the bank.'

The issue has been addressed by Hoshi (2002a, b). Calling this problem an 'Argument Transfer' problem for configurational θ-theory, the present paper attempts a further investigation into the issue that Hoshi addresses. The paper agues:

   (i)   an approach that can most clearly be characterized as an alternative to the
         configurational approach is what we might call a *featural* approach;

   (ii) the major properties of Argument Transfer can be handled more straightforwardly
         under the F-approach (Saito & Hoshi 1998, 2000) than under the C-approach, and

   (iii) nevertheless, it is not impossible to work out a way out of the problem for the
         configurational approach.

The paper also demonstrates:

   (iv) an initial attempt to motivate the 'configurational' analysis of Argument Transfer
         on independent grounds (cf. Matsumoto 1996b) does not succeed at least when
         taken at face value.

The paper is organized as follows. Section 2 is devoted to classifying approaches to argument structure in terms of the configurational vs. featural distinction. Section 3 reviews

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the major properties of Argument Transfer (AT) based on Grimshaw & Mester (1988). Section 4 also reviews how the featural approach proposed in Hoshi (1995), Saito & Hoshi (1998, 2000) can nicely account for these properties. Then sections 5 and 6 develop and consider a configurational account of AT, showing that AT can be made compatible with the configurational approach by making a certain set of assumptions. Section 7 attempts to test the proposed configurational analysis on independent grounds, even though, as we will see, the results fail to support the analysis, if not against it. Section 8 concludes the paper by addressing one other issue about the 'configurational vs. featural' debate.

2.   Two Approaches to Argument Structure: Configurational vs. Featural

This section is devoted to characterizing one alternative to the configurational approach to argument structure, namely a featural approach. In what follows, I dub the former the C-approach and the latter the F-approach.

One of the most popular instances of the C-approach is Hale & Keyser's (1993, 2002) work. Their main proposal is that a particular thematic role is associated with a particular syntactic position defined in phrase-structure theoretic terms. For concreteness, let us ask ourselves why *John kissed Mary* does not mean what *Mary kissed John* means. If we take Chomsky's (1995) familiar implementation of the C-approach, the question can be rephrased as follows. Why wouldn't a structure like (2) obtain and yield the unwanted result?

(2) $[_{vP}$ α   v $[_{VP}$ V β   ]]
          Patient   Agent

Hake & Keyser (1993:68-69) remark:

> Corresponding to this syntactic relation [where a verb phrase is immediately embedded under another verb phrase], there is a similarly asymmetric (semantic) relation between two events, a relation we will take to be that of *implication*. Accordingly, the matrix event "implicates" the subordinate event as in $[e_1 \rightarrow e_2]$, a relation that makes perfect sense if the syntactic embedding corresponds to a "semantic" composite in which the subordinate event is a proper part of the event denoted by the structure projected by the main verb.
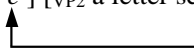
Crudely put, the 'configurational' answer is that (2) would violate principles of lexical meaning composition.

One direct consequence of the C-approach is that it explains why the UTAH (Uniformity of Thematic Assignment Hypothesis, Baker 1988) holds, as Hale & Keyser note.[1] Also, if we assume that there aren't so many legitimate conceptual relations among events, then, there

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[1] The hypothesis states that (i)dentical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure (Baker 1988:46).

will not be many different syntactic templates, accordingly; hence there are a few θ-roles.

Next turn to the F-approach. I take the following to be the most prominent characteristic of this approach. In this approach, argument structure is taken to be information that a lexical item bears as a feature of it. A consequence of this featural view of argument structure then is that it allows the thematic status of a syntactic position to change in principle in the course of derivation. Consider one concrete case. Jackendoff (1990) comments on Larson's (1988) derivation of the dative construction given in (3).

(3)   [$_{VP1}$ NP [$_V$ *e*] [$_{VP2}$ a letter send to Mary]]

Jackendoff (pp.450-51) observes:

> … the subject lies outside the maximal projection of *send* in D-structure, namely the lower VP. Therefore *send* cannot θ-mark its subject until it has raised into the upper VP. In other words, θ-marking has suddenly become a derived structure property.

Jackendoff seems right that Spec,VP$_1$ becomes a θ-position only after *send* substituting for the empty verb, because Larson (1988) assumes that a predicate must θ-mark an argument of it within its maximal projection.[2] Thus the thematic status of Spec,VP$_1$ changes due to V-movement. The point here is that this manner of θ-role assignment is possible crucially because *send* moves around with its agent-licensing ability. In other words, such θ-role assignment in a derived position would be impossible if the agent-licensing ability of *send* were not a *feature* of the lexical head. It should be very clear that this featural view cannot be shared by the C-approach, because, under the latter approach, thematic roles are not properties of lexical heads per se, but those of a phrase structural configuration resulting from composition of lexical heads.

Thus, the F-approach has to answer the question of how *John kissed Mary* does not mean 'Mary kissed John' in a different way than the C-approach does. The UTAH needs to be relativized for the F-approach. Baker (1997:108) calls it the RUTAH and writes:

> Baker's [1988] original statement of the UTAH implies that particular thematic roles were associated with particular syntactic positions in an absolute sense. However, many other researchers assume that only the relative positions of the arguments are important. On this view, it does not matter exactly what syntactic position (say) a theme phrase is generated in, as long as it is higher than any goal phrase and lower than any agent phrase in the same clause. We may call a condition of this kind the Relativized UTAH, or RUTAH.

Analyzing *John put some beer in the cooler*, Larson (1990:598) argues that its base structure

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[2]   In his reply to Jackendoff, Larson doesn't accept Jackendoff's interpretation of his derivation given in (3).

given in (4) does not entail that *some beer* can be understood as an agent even though it is in the specifier of *send*. This is because the RUTAH dictates that the most prominent role, Agent, goes with a higher A-position, Spec,VP$_1$.

(4)   [$_{VP1}$ John [$_V$ *e*] [$_{VP2}$ some beer [$_{V'}$ put in the cooler]]

Likewise, if *John kissed Mary* were understood to mean 'Mary kissed John' (i.e. the situation provided in (2)), that would result in violation of the RUTAH.

Given the stories told in the last two paragraphs, the following two can be noted as the key features of the F-approach to argument structure: (i) thematic information is represented as a feature of a lexical item; and (ii) the RUTAH-based thematic hierarchy is incorporated to explain why θ-roles are projected in structure in the way they actually are. In this light, the type of lexical representation that Grimshaw 1990 adopts (e.g., (5)) reflects these features of the F-approach rather clearly.

(5)   kiss   (x   (y))
                 Agent Theme

Parentheses explicitly indicate that Agent is prominent over Theme, and that information is represented as a feature of the lexical item *kiss*.

Before we proceed, I would like to make one point about the relationship between the C-approach and the notion 'θ-feature'. Sometimes a proposal referring to 'θ-feature' can be recast without appealing to it in the sense of the notion characterized above. For instance, take Hornstein's (1999) well known analysis of Obligatory Control using θ-features to drive movement into θ-position. As Harley (2011) correctly notes, a movement theory of control is compatible at least with a version of the C-approach. Given that Move (= external Merge) and Merge (=internal Merge) are unified (e.g., Chomsky 2008), one seems to even need a stipulation to stop the system to internally merge an argument in a new θ-position (e.g. D-structure or Chomsky's (2000) constraint on θ-positions and first merger of arguments) under the C-approach. In this respect, the Saito & Hoshi style analysis of Argument Transfer reflects the nature of the F-approach in a clearer manner, as we will see in section 3.

The next section lays out the major properties of AT that Grimshaw & Mester discovered and that Saito & Hoshi attempt to explain.

3.   Argument Transfer

As alluded to in section 1, we focus on 'Verbal Noun-ACC' and related constructions in Japanese.[3] The examples of VN-ACC constructions given in (6a-c) illustrate AT.[4]

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[3] Although I cannot afford to discuss the cross-linguistic status of this grammatical process in Japanese, let me make one comment on examples like *John gave Bill permission to buy a car*.

(6)   a.   Hiroshi-wa   [_VNP_ sono ginkoo-kara-<u>no</u> genkin-<u>no</u>   goodatu]-o
           Hiroshi-TOP   that bank-from-GEN cash-GEN   stealing-ACC
           kokoromita.
           attempted

           'Hiroshi attempted stealing of cash from the bank.'

      b.   Hiroshi-wa   sono ginkoo-kara [_VNP_ genkin-<u>no</u> goodatu]-o   kokoromita.
           Hiroshi-TOP that   bank-from   cash-GEN stealing-ACC attempted

      c.   ?Hiroshi-wa   sono ginkoo-kara genkin-o [_VNP_ goodatu]-o   kokoromita.
           Hiroshi-TOP that   bank-from   cash-ACC   stealing-ACC attempted

In each of these cases, the complement is headed by the Verbal Noun (VN) *goodatu* 'stealing'; the VN is directly followed by an accusative case marker; and the complement is obligatorily controlled; e.g., *Mary-mo kokoromita* 'Mary also attempted' only allows a sloppy interpretation when it follows any of these examples. They just differ from one another with regard to where internal arguments of the VN are located in surface structure. All the internal arguments are located inside the VNP in (6a); one of them is located outside it in (6b); all the two are located outside it in (6c). This way, an internal argument of the embedded predicate noun shows up as either a surface-structure dependent of that noun or a surface-structure dependent of the matrix verb in this construction. Grimshaw and Mester propose Argument Transfer (AT) to refer to this effect: In this view, (part of) the argument structure of a VN is *transferred* to the matrix verb in (6b, c).[5] Throughout the paper, I use AT as a cover term to refer to this phenomenon or grammatical effect, and sometimes call a pattern like (6a), where AT does not apply at all, the *simple VN-ACC construction,* as opposed to its ATed counterparts [(6b, c)].

In addition to the basic paradigm in (6), let us note that these VN-ACC constructions have what we might call a VN-*suru koto*-ACC counterpart. One example is given in (7).

According to Baker (1996: 353ff), an example like this involves AT. He remarks that "[i]n general, lexical properties of the light verb determine the basic syntactic structure of the clause, while the predicate noun determines the semantic flavor of those arguments." This characterization looks correct for the English construction. In the Japanese case under consideration, however, it looks like as many arguments add up in the matrix clause as undergo AT; e.g., the verb *kokoromiru* 'attempt.Pres' used in (6) ordinarily only takes one agent and one theme.

[4] The "?" status of (6c) is due to the fact that, roughly, clause-mate multiple accusatie NPs generally cause degradation, which has nothing to do with the applicability of AT per se; see Saito and Hoshi 2000 for full discussion.

[5] Grimshaw & Mester (1988) only discussed cases involving *suru* 'do' as the matrix verb. I'm agnostic here about the potential differences that the *suru*-construction might exhibit; see Matsumoto 1996a.

(7)　　Hiroshi-wa　　sono ginkoo-kara(*-no) genkin-{o, *no}　　goodatu-<u>suru-</u>
　　　　Hiroshi-TOP　that bank-from-GEN　cash-ACC　GEN　stealing-do.PRES-
　　　　koto-o　kokoromita.
　　　　C-ACC　attempted

The VN-*suru koto*-ACC construction contains the same VN, but the VN is followed by the morphologically tensed verb *suru* 'do.PRES' and the nominalizing complementizer *koto*. The case marking properties indicated in the above example show that the internal syntax of the *koto* complement is fully verbal. This construction will be important when the 'configurational' analysis of AT is tested against empirical data in section 7.[6]

As already seen above, what is peculiar about the VN-ACC construction is that in (6b, c), *sono ginkoo-kara* 'from that bank', case-wise, behaves as if it is a dependent of the matrix verb (If it were a dependent of the noun, it would be marked with genitive in Japanese; cf. (6a)). A surface phrase-structure like the one given in (8) encodes this case property, abstracting away from the exact surface position for the matrix subject and other details.

(8)
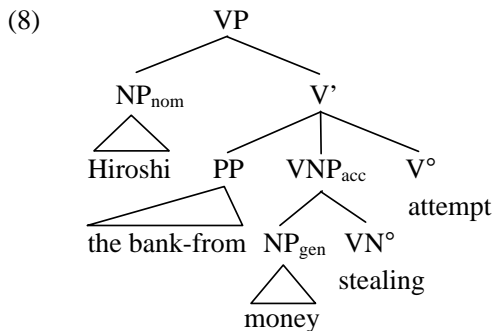
It is important to note that AT does not apply freely. One consensus that researchers have reached seems to be that the grammatical process in question must apply in the outside-in fashion that presupposes a certain thematic hierarchy (Grimshaw & Mester 1988; Matsumoto 1996; Saito & Hoshi 1998, 2000; cf. Ishii 2009). Observe first that the severe ungrammaticality of (9) suggests that the Theme of 'stealing' cannot undergo AT if the Source does not.

(9) *Hiroshi-wa　　genkin-o　[sono ginkoo-kara-no　goodatu]-o　　kokoromita
　　　Hiroshi-TOP　cash-ACC　that bank-from-GEN　stealing-ACC　attempted

This way of describing the status of (9) is confirmed by the status of (6c). Although it is not a perfect sentence (cf. footnote 4), it is still acceptable if both the internal arguments are transferred. Based on these facts, Grimshaw & Mester conclude that AT applies to the argument structure of the embedded VN from outside in, respecting, say, a hierarchy like the

---

[6]　Kuroda 1965 proposes a deletion transformation to derive a VN-ACC construction from its VN-*suru koto*-ACC counterpart.

following (">" indicates "is more prominent than").[7]

(10)   Agent > Source > Goal > Theme

To be more precise, an argument with θ-role β cannot undergo AT if there is an argument with θ-role α that has not undergone AT, where α > β holds in the thematic hierarchy.

    In sum, two descriptive properties serve as boundary conditions on an adequate analysis of AT.

(11)   a.   AT applies optionally to (internal) arguments of the VN.

        b.   AT applies in an outside-in fashion to preserve the thematic hierarchy.

4.   A Covert Incorporation Analysis of AT

    Saito & Hoshi 1998, 2000 propose an elegant covert incorporation analysis of AT.[8,9] I review the gist of the analysis below. According to the analysis, the effect of AT is achieved by covert (or LF) adjunction of the VN to the matrix V via head movement. In this analysis, the surface structure that we have in (12) (=(8)) undergoes a covert transformation to yield the structure given in (13).
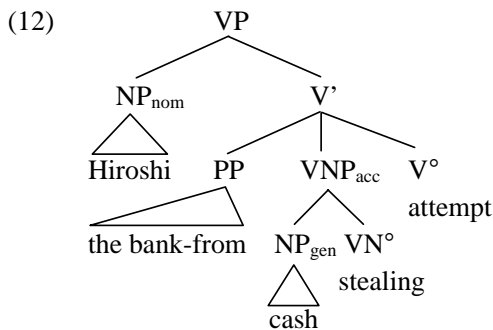
(12)

---

(13)

```
            …        V'
         ┌───────────┼───────────┐
        PP          VNP          V°
        ╱╲        ╱────╲        ╱──╲
  the bank-from  NPgen  tVN    VN°   V°
                  △
                 cash        stealing  attempt
```
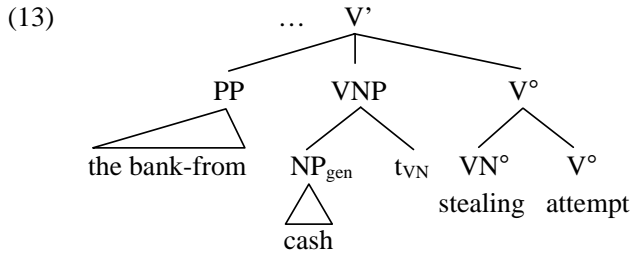
There are two basic assumptions about θ-role assignment underlying the analysis: (i) that a θ-role assigner assigns a θ-role to a phrase iff the former m-commands the latter (Locality); and (ii) that the m-command domain of X° is the domain that the first maximal projection that dominates it (Definition of m-command). Once these assumptions are made, it follows that in (13) above, the VN is able to license the PP as an argument of it.

The covert incorporation analysis of AT successfully captures the two facts summarized in (11): First, as Saito & Hoshi (2000) note, the very fact that AT is possible now follows from the combination of two independently attested properties of syntax, i.e. head movement and covert movement, without assuming a construction-specific rule. Second, the analysis explains the ungrammaticality of (9) by appealing to the RUTHA-based thematic hierarchy. (9), diagramed as in (14), can successfully be excluded by saying that the position for the theme is higher than that of the source, given the hierarchy in (10). This account requires that the matrix clause have the theme θ-position. That is exactly what the covert incorporation analysis claims.

(14)

```
               *VP
         ┌──────┴──────┐
       NPnom           V'
        △          ┌───┼────────┐
     Hiroshi     NPacc  VNPacc  VN°+V°
                  △     ╱──╲
                 cash  PPgen  tVN
                        ╱╲
                  that bank-from
```
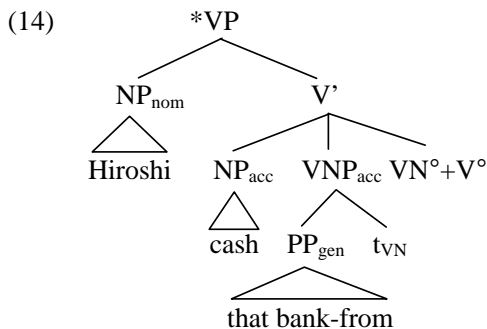
This is not trivial at all because an alternative analyzing this transferred theme as being θ-marked within the VNP would not be able to make recourse to the RUTAH or the thematic hierarchy to exclude the structure of (14).

In sum, Saito & Hoshi's (and Baker's, as alluded to in footnote 8) head movement-based view quite nicely satisfies the boundary conditions on an adequate analysis of AT (i.e., (11)a and b). The next two sections examine whether the covert incorporation analysis can be instantiated under the C-approach. We begin by proposing a configurational analysis of the simple VN-ACC construction as well as the VN-*suru-koto*-ACC construction.

5.   A 'Configurational' Analysis of the Simple VN-ACC Construction

The key feature of the covert incorporation analysis of AT is head movement being able to make an initially non-thematic position thematic in the course of derivation. What would a configurational treatment of VN-ACC complement constructions look like? In order to be able to answer this target question, we need first to consider a configurational analysis of the most basic patterns, the VN-*suru koto* construction [(7)] and the simple VN-ACC construction [(6a)]. (6a-c) and (7) are repeated below.

(15)   a.   Hiroshi-wa   [VNP sono ginkoo-kara-<u>no</u> genkin-<u>no</u> goodatu]-o
            Hiroshi-TOP   that bank-from-GEN cash-GEN stealing-ACC
            kokoromita.
            attempted

            'Hiroshi attempted stealing of cash from the bank.'

        b.   Hiroshi-wa   sono ginkoo-kara [VNP genkin-<u>no</u> goodatu]-o   kokoromita.
            Hiroshi-TOP   that bank-from   cash-GEN stealing-ACC attempted

        c.   ?Hiroshi-wa   sono ginkoo-kara genkin-o   [VNP goodatu]-o   kokoromita.
            Hiroshi-TOP that bank-from   cash-ACC   stealing-ACC   attempted

(16)   Hiroshi-wa   sono ginkoo-kara genkin-o   goodatu-<u>suru</u>-koto-o
        Hiroshi-TOP that bank-from   cash-ACC stealing-do.PRES-C-ACC
        kokoromita.
        attempted

One immediately conceivable way of dealing with (15a) is by borrowing a C-approach-based analysis of a similar type of nominalization. Let us adopt some ideas from a configurational analysis of English nominalizations suggested by Harley (2009) (see also Kratzer 1996, Harley & Noyer 1997). The major assumptions required to analyze (16) are listed below.

(17)   a.   A clause's ability of licensing accusative case, ability of licensing agents and ability of verbalizing roots are dissociated, rather than being treated as properties of one head, v. That is, Voice° introduces an agent, F° licenses accusative case, and v° verbalizes roots.

        b.   A series of overt head movements takes place (as indicated below), giving rise to the surface form of the verb, *goodatu su*.

        c.   Spec,√P is associated with goal/location/source and Compl,√P with theme at least in Japanese.

Then the embedded clause of the VN-*suru koto* construction exemplified by (16) can be analyzed as involving a structure like (18) (√ stands for a category-neutral root.)

(18)

```
                        VoiceP
                      /        \
                 Agent          \
                          FP       Voice°
                        /    \       ↗
                     vP       F°(+ACC)
                    /   \        ↗
                 √P      [v su]
                /  \        ↗
           Source   √'
                   /    \
              Theme      [√ goodatu]
```
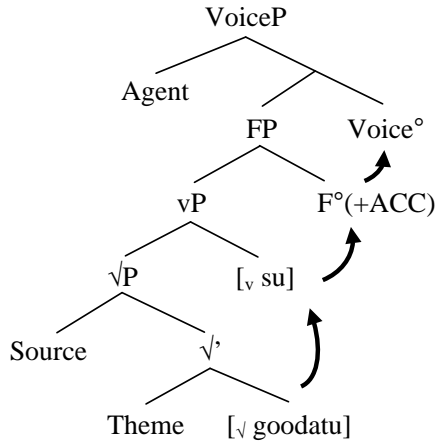
One might point out that the positions for the source and the theme assumed in (17c) radically differ from those proposed in the Hale & Keyser style analysis of English argument structure (see Hale & Keyser 1993, 2002; Harley 2011). For the moment, it suffices to note that the assumption in (17c) is largely compatible with the observed facts about Japanese argument structure and that it clearly is a configurational analysis if not without a problem (see Takano 2008 for a comprehensive review). I come back to this issue in section 8.

Turn to the structure of the simple VN-ACC construction. The structure given in (18) leads us to the hypothesis that the VN-ACC complement is diagramed as (19) (or perhaps its version without the Voice projection and PRO, which are put in parentheses in the diagram.)

(19)

```
                    √'
                  /    \
               nP       [√ kokoromi]
              /   \        attempt
       (VoiceP)    [n ∅]
       /      \       ↗
 ([NP PRO])    \
            √P    ([Voice ∅])
           /   \      ↗
      PP(-no)   √'
              /    \
        NP(-no)     [√ goodatu]
```
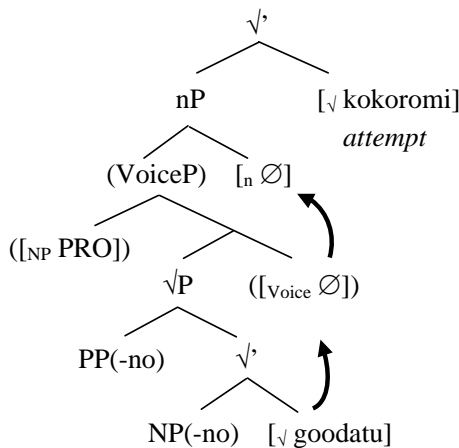
The major assumptions underlying this structure are:

(20)   a.   VNP is reanalyzed as nP. The head n is a nominalizer (cf. (18)).

     b.   The verbalizer v and the case-assigning F are never present inside nP (cf. (18)).

    c.   Head movement from √ to Voice and one from Voice to n apply to give the surface form of the noun *goodatu*.

    d.   XP gets spelled out with genitive marking or in its adnominal form iff it is governed by n at the point of Spell-Out (see Matsumoto 1996b:130 for a similar idea).

    e.   Head movement gives rise to the effect of Baker's (1988) Government Transparency Corollary.

(20a-c) are largely in lines with Harley's work. The assumptions in (20d-e) are made to deal with the fact that arguments and modifiers that appear inside the (extended) projection of a nominal *at surface structure* receive adnominal morphology.

Given these assumptions, and the assumption about theme and source in (17c), one can successfully make it follow that the PP and the NP in (19) are *configurationally* assigned a source and a theme role, respectively. This way, a configurational analysis of the non-ATed VNP complement construction can be instantiated.

6. Incompatibility with the Covert Incorporation Analysis of AT

Having made available a 'configurational' analysis of the simple VN-ACC construction, we are now in a position to ask the target question of this paper. How would it be possible for the C-approach to account for the AT cases exemplified by (15b-c)? I demonstrate first that the covert incorporation analysis, if taken at face value, does not fit in with the configurational analysis of VN-ACC complements sketched in the previous subsection. Let us take (15c) and consider its derivation. The base structure would be as in (21), and the covert incorporation of the VN --- the syntactic object that is now reanalyzed as √+n --- to the matrix verb gives rise to the configuration give in (22).[10, 11]

---

[10] One might correctly wonder, regarding (22), whether the matrix verb root √ has not moved up to a higher position at the point of LF derivation where the covert movement of the VN applies. This may imply that covert movement precedes overt movement, contrary to what's expected under the Y model assumed in (20d). It seems, though, that the main idea can still be kept intact. Assume that covert n-to-√ movement is an operation at the nP cycle, and a series of overt movements resulting in √+v+F+Voice count as operations at the next higher cycle. Assume also that Spell-Out applies cycle by cycle. That enables us to continue a Y-model derivation within each cycle.

[11] As was alluded to when (19) is presented, the VoiceP in the VNP may be absent from VN-ACC complements. Indeed, it is omitted in (21). This is to avoid being committed to the issue of whether PRO, an obligatorily controlled argument, undergoes AT. For the current purposes, one can assume, along the lines proposed by Chierchia (1984), Wurmbrand (2001), among others, that a controlled complement may lack a subject position.

(21)

```
                        VoiceP
                      /        \
              Agent  FP         Voice
                    /  \
                 vP     F
                /  \
             √P     v
            /  \
          PP    √'
      bank-from  /  \
              NP     √'
             cash    /  \
                  nP    [√ kokoromi]
                 /  \
               √P    n
                |
          [√ goodatu]
```

(22)

```
                 √P
               /    \
             PP      √'
         bank-from  /  \
                 NP     √'
                cash   /    \
                     nP       √
                    /  \     /  \
                  √P   t_n  n    [√ kokoromi]
                   |      /  \
                  t√   [√ goodatu]  n
```
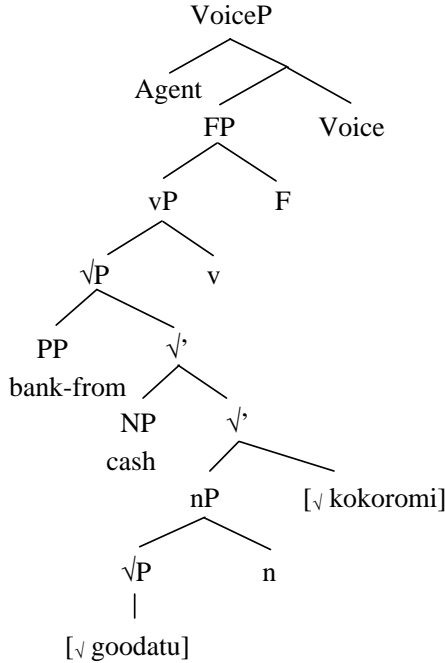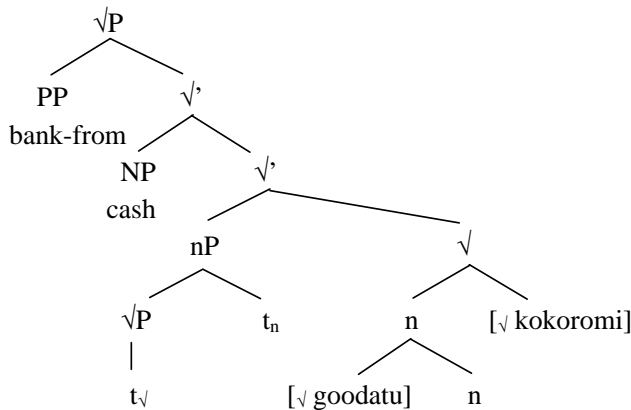
Recall that in (17c), we assumed that Spec,√P is associated with goal/location/source and Compl,√P with theme in order to get the configurational analysis of the construction off the ground. Now this assumption, obviously, prevents the ATed arguments from receiving the correct interpretations; in (22), the PP is not in the specifier of [√ *goodatu*], nor is the NP in the complement of it. (See Kuroda 2003 for a solution to this problem, which proposes reconstructing a configurational structure inside the lower √P.)

This section has demonstrated (i) that the VN-*suru koto*-ACC construction can be dealt with under the C-approach; (ii) that the VN-ACC construction without AT also can fall under it; and (iii) that the 'covert incorporation' solution to the AT problem is not compatible with the C-approach to argument structure. In the next section, we consider a 'configurational' way out of the problem, building on Matsumoto (1996b).

7.   Discussion

One way of accounting for AT under the C-approach is by proposing that transferred arguments result from non-case-driven A-movement from within the VN-ACC clause into the matrix domain. Under the structural analysis of the construction proposed above, the movement in question will be movement out of the nP to the matrix √P. The diagram in (23) presents how the source PP is transferred to the matrix domain in examples like (15b).

(23)
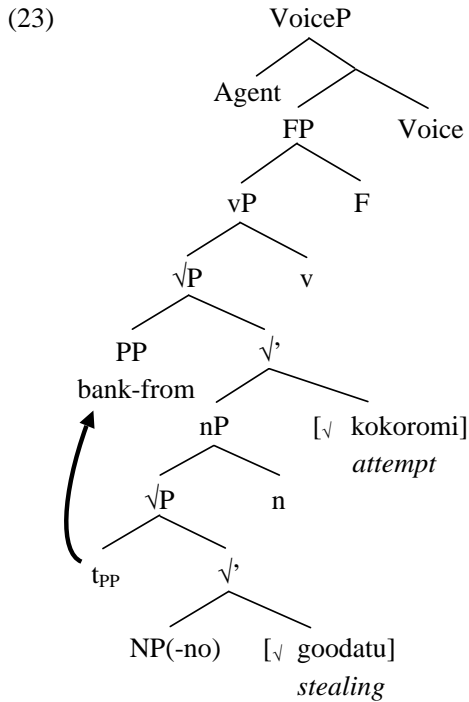
As for the construction exemplified by (15c), where the source and the theme are transferred, it can be handled by assuming that they would move into multiple specifiers as in (24).

(24)   … [$_{√P}$ PP$_{Source}$ [$_{√'}$ NP$_{Theme}$ [$_{√'}$ [$_{nP}$ t$_{Source}$ t$_{Theme}$ *goodatu*] *kokoromi*]]
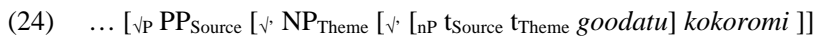
Note also that the movement in question can be non-case-driven, because, for example, the source PP receives no case from the matrix verb. A moved element, like the transferred theme in (23), can be assigned case by the matrix verb but it does not always have to be. The following assumptions seem to enable us to achieve the desired results.

(25)   a.   The matrix verb (√°) optionally gains an 'EPP' feature, which derives overt A-movement to a specifier of the head bearing it, essentially along the lines presented in Chomsky 2008, Lasnik 2003.

b.　The EPP feature in question may derive movement more than one time to create multiple specifiers (Ura 1994). When multiple movements are triggered, multiple specifiers are created in a 'Tacking in' fashion proposed in Richards (2001), Hiraiwa (2001). Thus, when the two internal arguments move, the 'base' word order is preserved.

c.　nP does not count as an intervener for movement of the PP and the NP. More generally, when H° triggers movement, the complement of H° does not count as an intervener for minimality purposes (Funakoshi 2012).

It should be noted that the movement in (23) cannot be scrambling. If it were, the effect of the thematic hierarchy (cf. (9), repeated as (26)) would not be captured, given that scrambling does not obey minimality.

(26)　*Hiroshi-wa　　genkin-o　[sono ginkoo-kara-no　　goodatu]-o　　kokoromita
　　　　Hiroshi-TOP　cash-ACC　that　bank-from-GEN　　stealing-ACC attempted

So this 'EPP-driven movement' analysis proposed above is not only compatible with the C-approach but also successfully captures the core effects of AT.

　　Now a question that arises is, is there any independent empirical argument that this 'EPP-driven movement' analysis is preferred over the covert incorporation analysis? In what follows, I first provide one putative argument in favor of the EPP-driven movement analysis, which is essentially one I reconstruct from Matsumoto's (1996b) observations (see also Kuroda 2003). And then I show that this particular argument unfortunately turns out to lead to a wrong consequence.

　　The form of the argument for the EPP-driven movement analysis is as follows. Suppose that displacement of a complement dependent of the sort proposed in (23) is observed in some other construction. Suppose furthermore that the second construction cannot be accounted for in terms of covert incorporation. Then, all the facts would follow without appealing to the covert incorporation analysis. Hence the EPP-driven movement analysis is preferred.

　　An actual empirical argument is based on a clause-mate condition on NPI licensing. First, the contrast in (27) is an illustration of the standard generalization that a *sika*-marked phrase, being an NPI, requires a clause-mate negation at surface structure. The PP-*sika* in the embedded clause cannot be licensed by the matrix negation but can be by the embedded negation.

(27)　a. *Yoko-wa　[Hiroshi-ga　　　sono　ginkoo-kara-sika　genkin-o
　　　　　 Yoko-TOP　Hiroshi-NOM　　that　bank-from-SIKA　cash-ACC
　　　　　 goodatu-suru　　　koto]-o　soozoosi-nakat-ta.
　　　　　 stealing-do.PRES　C-ACC　imagine-NEG-PAST

b. Yoko-wa   [doroboo-ga   sono   ginkoo-kara-sika   genkin-o
Yoko-TOP   robber-NOM   that   bank-from-SIKA   cash-ACC
goodatu-si-nai   koto]-o   soozoosita.
stealing-do-NEG.PRES   C-ACC   imagined

'Yoko imagined that robbers would steal cash only from that bank.'

As Matsumoto notes, it has been observed that a standard non-finite OC complement exhibits a clause-union effect: a dependent of the complement clause behaves as if it is in the matrix clause (Saito 1985, 1996; Nemoto 1993; Murasugi & Saito 1995). In (28a), the PP-*sika* is easily licensed by the matrix negation (Not surprisingly, when transferred elements are NPIs, they are licensed by the matrix negation, as in (28b)).

(28)   a.   Hiroshi-wa   sono ginkoo-kara-sika   genkin-o   goodatu-suru-koto-o
Hiroshi-TOP   that bank-from-SIKA   cash-ACC   stealing-do.PRES-C-ACC
kokorominakatta.
did.not.attempt

'Hiroshi attempted to steal cash only from that bank.'

b.   Hiroshi-wa   sono   ginkoo-kara-sika   [$_{VNP}$ genkin-no   goodatu]-o
Hiroshi-TOP   that   bank-from-SIKA   cash-GEN   stealing-ACC
kokoromi-nakat-ta.
attempt-NEG-PAST

Matsumoto's observation suggests that EPP-driven movement is independently needed to account for the clause-mate effect and hence the covert incorporation can be dispensed with. This way, an argument in favor of the EPP-driven movement analysis can be made.

However, it turns out that the unification of AT and the ill-understood clause-union effect under OC gains little empirical support. To see how, we introduce another instance of the clause-union effect, which has to do with the clause-mate condition on multiple clefting. In (29a), the matrix subject and the source PP are not in the same clause and they resist multiple clefting. As Takano (2010) observes, the effect goes away when the complement subject is OCed, as in (29b). (29c) shows that in the VN-ACC construction as well, a transferred element behaves like a clause mate of the matrix subject. This is expected since OC is involved (Foci are underscored in translations in (29)).

(29)   a. *[e_1 [doroboo-ga e_2 genkin-o   goodatu-suru-koto]-o   soozoosita-no]-wa
robber-NOM   cash-ACC   stealing-do-C-ACC   imagined-C-TOP
Hiroshi-ga$_1$ sono ginkoo-kara$_2$ da.
Hiroshi-NOM   that bank-from   COP

'<u>Hiroshi</u> imagined the robbers would steal cash <u>from that bank</u>.'

b. [e_1 e_2 genkin-o   goodatu-suru koto-o   kokoromita-no]-wa
         cash-ACC stealing-do   C-ACC attempted-C-TOP
Hiroshi-ga$_1$ sono ginkoo-kara$_2$ da.
Hiroshi-NOM that   bank-from   COP

'<u>Hiroshi</u> attempted to steal cash <u>from that bank</u>.'

c. [e_1 e_2 [$_{VNP}$ genkin-no   goodatu]-o   kokoromita-no]-wa
         cash-GEN   stealing-ACC   attempted-C-TOP
Hiroshi-ga$_1$ sono ginkoo-kara$_2$ da.
Hiroshi-NOM that   bank-from   COP

With this much background, consider a pair of examples like (30a,b). In (30a), the source PP must be in the embedded CP because of the *sika*-Neg association within the clause. It is predicted then that the theme NP *genkin* 'cash' cannot be displaced to the matrix clause in this environment, because the source PP would have to undergo EPP-driven movement if the theme NP does, obeying minimality (cf. the ungrammaticality of (26)). Now the prediction for multiple clefting applying to (30a) is that the theme NP would not undergo clefting with the matrix agent; i.e. that (30b) be ungrammatical. But the example is acceptable.[12]

(30) a. Hiroshi-wa   sono ginkoo-kara-sika genkin-o
         Hiroshi-TOP   that bank-from-SIKA   cash-ACC
         goodatu-si-nai-koto-o   yakusokusita.
         stealing-do-NEG.PRES-C-ACC   promised

      'Hiroshi promised to steal cash only from that bank.'

   b. [e_1 sono ginkoo-kara-sika e_2 goodatu-si-nai-koto-o
           that bank-from-SIKA   stealing-do-NEG.PRES-C-ACC
      yakusokusita]-no-wa Hiroshi-ga$_1$ genkin-o$_2$ da
      promised-C-TOP   Hiroshi-NOM cash-ACC COP

      '<u>Hiroshi</u> promised to steal <u>cash</u> only from that bank.'

Based on these considerations, I conclude that AT and the clause-union effect under OC should not be unified. That means that we could not extend the EPP-driven movement analysis of AT to the clause-union effect. The latter phenomenon is just left unexplained under both analyses. The EPP-driven movement analysis of AT may be correct, but the

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[12] The VN-ACC counterpart of (30b) is no good. This, however, does not tell us anything because clefting fails to apply to genitive-marked elements to begin with.

(i) *[Hiroshi-ga sono ginkoo-kara [$_{VNP}$ e_i goodatu]-o kokoromita-no]-wa genkin-no da
                                                                              cash-GEN

The ungrammaticality of (i) is expected if the condition on genitive marking in (20d) is correct.

argument for it over the incorporation analysis is gone.

In sum, it is possible to instantiate a 'configurational' analysis of AT by proposing that AT is non-case-driven A-movement out of the VNP. An initial attempt to give it independent support, however, does not seem to succeed at least when taken at a face value.

8.   Conclusions

I have argued that the Saito & Hoshi style account of AT is successful crucially because it is a variant of the featural approach to argument structure. I develop a configurational account of the same phenomenon though I have not been able to find independent support for it at this point.

One final point. One general conceptual merit of the C-approach over the F-approach is that the former arguably derives the effect of the thematic hierarchy while the latter directly encodes it into the system as a principle. This conceptual argument may be in favor of the configurational analysis of AT over the covert incorporation analysis. Quite ironically, however, the standard treatment of theme with respect to other internal arguments under the C-approach (Hale & Keyser 1993, 2002; Baker 1997) is exactly opposite to the one we need to assume in accounting for the Japanese data. Baker (1997:123) remarks:

> … if [the C-approach, T.F.] is correct, then the agent has prominence over the theme not by the extrinsic stipulation of some kind of thematic hierarchy, but by semantic compositionality: the agent is the argument of one predicate, the theme is the argument of another predicate, and the second predicate is an argument of the first.

As Baker notes (p.106), the theme needs to be lower than other internal arguments in accounting for the thematic hierarchy effect (cf. (9)). The configurational analysis presented in section 7 remains to be fully worked out in this respect, as well.

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CASE, TENSE, AND SUBJECT RAISING IN JAPANESE [*]

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1. Introduction

One long-standing issue in Japanese generative grammar concerns the question of where subjects are located in clause structure. Since the introduction of the predicate-internal subject hypothesis (see Koopman and Sportiche 1991, Sportiche 1988, Fukui 1986, Kitagawa 1986, Kuroda 1988, McCloskey 1996, 1997), this issue has figured prominently. This is precisely because the predicate-internal subject hypothesis makes two subject positions available—one is a vP-internal position, where a subject receives its theta role from the verb, and the other, Spec-TP, which is the landing site of a subject (when it undergoes subject raising).

Theoretically subjects can appear in either Spec-vP or Spec-TP, but in Japanese, no general consensus has been reached as to which position subjects should occupy. Some researchers, such as Fukui (1986, 1995) and Kuroda (1988), hold that subjects appear in vP-internal position without subject raising.

(1)   [TP   [vP SUBJ   [VP   V] v] T]

On the other hand, it is held by other researchers, such as Miyagawa (1989a, 1989b) and Kishimoto (2001), that subjects are raised to Spec-TP by virtue of the EPP requirement imposed on T.

(2)   [TP SUBJ   [vP S̶U̶B̶J̶   [VP   V] v] T]

The discussion of the structural position of subjects is often confined to cases involving nominative subjects, but more recently, a different claim has been advanced in Kishimoto (2012) to the effect that the structural position that subjects occupy varies depending on their marking; that is, nominative subjects are raised to Spec-TP, whereas source subjects marked with ablative case—the oblique *kara* 'from'—remain within vP (cf. Ueda 2003).

In Japanese, there is at least one way of measuring whether or not a subject undergoes raising to Spec-TP. In this paper, it is shown that one species of raising construction where the main predicate is combined with the aspectual verb *iru* 'be' allows us to confirm the

constituent position of subjects.

In the raising construction formed with the aspectual verb *iru*, a negator may either precede or follow the aspectual verb. As I will discuss at length below, when the negator precedes the aspectual verb, negative scope does not extend over the matrix TP, but is limited to the embedded TP: the limited extent of negative scope allows us to assess whether a subject is raised to Spec-TP or not. A close inspection of the data reveals that the possibility of subject raising is determined by the property of tense. It is suggested that when T bears a case feature to license a nominative argument, it carries an EPP feature, and hence, subject raising is instantiated.

The discussion proceeds as follows. In section 2, I first discuss the structure of the aspectual construction. It is shown then that crucial evidence that allows us to diagnose the presence or absence of subject raising can be drawn from the aspectual construction. In section 3, I argue that when tense bears a case feature to value the case feature of a nominative argument, the EPP requirement is imposed on the clause. In section 4, the nominative-case constraint is seen to emerge when tense has an uninterpretable case feature. A conclusion is presented in section 5.

2.   Subject Raising in the Aspectual Construction

The grammatical requirement for filling Spec-TP—the EPP requirement—motivates the raising of subjects to TP from the base-generated position within vP. Since the EPP was formulated by Chomsky (1982), a number of different theoretical implementations have been proposed (see Landau 2007), but it is commonly held that whether or not subject raising to Spec-TP takes place is determined by the property of T.[1]

The EPP requirement is often taken to work in tandem with, or closely to, some grammatical features such as case and agreement. Researchers such as Bošković (2002) and Martin (1999) propose that the EPP should be motivated by case. In contrast, Kuroda (1988), Pesetsky and Torrego (2001), and Miyagawa (2010) provide a view to the effect that agreement dictates the EPP requirement, and hence, the possibility of subject raising.[2] The non-raising view of subjects in Japanese is often motivated by the fact that the language lacks agreement, as discussed by Fukui (1986, 1995) and Kuroda (1988). For Kuroda (1988), for

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[1] There are a number of different grammatical views for the EPP: Alexiadou and Anagnostopoulou (1988) claim that the EPP holds universally, and this requirement could be met via XP or X^0 movement; McCloskey (1996) argues that the EPP holds in some languages, but not in others, or that languages may differ in the specifier requirement on T. While I assume that the EPP is a grammatical requirement (imposed on T), some proposals attempt to reduce the EPP requirement to a phonological constraint, stating that T needs its specifier (subject) for phonological reasons (e.g. Holmberg 2000). There are also views taking this requirement to be semantic in nature (see, e.g., Rothstein 2001).

[2] In Miyagawa's analysis, topic/focus features are construed as counterparts of agreement in languages like Japanese.

instance, subjects remain in vP-internal position, due to the absence of agreement. If the EPP works in tandem with agreement, this view might be plausible. Nevertheless, as I will discuss below, there is good reason to believe that in Japanese, the EPP requirement is conditioned by case rather than agreement.

In the following discussion, I will argue that, at least in Japanese, the EPP is correlated with the question of whether T licenses the most prominent structural case of the clause—i.e. nominative case. Data from the subject-raising construction with the aspectual verb *iru* suggest that the specifier requirement (i.e. the EPP requirement) of T is derived when tense carries an uninterpretable case feature to value the case feature of a nominative argument.

2.1. The Raising Constructions

Prior to going into the illustration of how subject raising is implemented in Japanese, let us discuss some notable properties of the aspectual construction (3) where the main verb is combined with the aspectual verb *iru* 'be', which plays a key role in the discussion of subject raising.

(3) John-ga   hon-o   yon-de   ir-u.
     John-Nom book-Acc   read   be-Pres

   'John is reading the book.'

First, in the aspectual construction headed by the aspectual verb *iru* 'be', a negator *nai* 'not' can appear in two different syntactic positions. As shown in (4), *nai* can either precede or follow the aspectual verb (but must always follow the main verb).

(4)   a.   John-ga   hon-o   yon-de   i-na-i.
          John-Nom book-Acc   read   be-Neg-Pres

     'John is not reading the book.'   V-BE-NOT

      b.   John-ga   hon-o   yoma-nai-de   ir-u.
          John-Nom book-Acc   read-Neg   be-Pres

     'John is not reading the book.'   V-NEG-BE

The aspectual verb *iru* occurring with the main verb expresses an aspectual meaning, and constructs a raising construction. This can be confirmed by restoring to two heuristics standardly used for distinguishing raising from control structures.

To be concrete, the fact that inanimate subjects are allowed, as well as the fact that clausal idioms can be embedded with no loss of their idiomatic meanings, confirms that the construction formed with the aspectual verb *iru* 'be' has a raising structure. The examples in (5) represent a case where the negator occurs to the right of the main verb.

(5)   a. Sora-ga   mada hare-te i-na-i.
           sky-Nom still   clear   be-Pres

           'The sky is not clearing yet.'   (Inanimate subject)

      b. Kono   mise-de-wa mada   kankodori-ga   nai-te i-na-i.
           this   shop-at-Top still   cuckoo-Nom   sing   be-Neg-Pres

           'There are still almost no customers shopping at this shop.'   (Clausal idiom)

The same fact that is observed for (5) obtains in cases where the negator follows the aspectual verb, as in (6).

(6)   a. Sora-ga   mada hare-nai-de i-ru.
           sky-Nom still   clear-Neg   be-Pres

           'The sky has not cleared yet.'   (Inanimate subject)

      b. Kono mise-de-wa   mada kankodori-ga naka-nai·de i-ru.
           this   shop-at-Top   still   cuckoo-Nom sing-Neg   be-Pres

           'There are still almost no customers shopping at this shop.'   (Clausal idiom)

The data illustrate that the aspectual verb *iru* does not impose any selectional restriction on the subject, which is characteristic of raising verbs, and thus, any type of subject is allowed in the aspectual construction as long as it satisfies the sectional requirement of the main verb.

     This pattern of distribution is not found in control constructions. The aspectual verb *oku* 'put' selects a *te*-clause as its complement, just like the aspectual verb *iru* 'be'. Nevertheless, the verb *oku* takes a control complement. This is readily confirmed by the fact that neither inanimate subjects nor clausal idioms can be embedded under *oku*, as shown in (7).

(7)   a. *Sora-ga   hare-te   oka-nakat-ta.
           sky-Nom clear   put-Neg-Past

           'The sky was not cleared.'   (Inanimate subject)

      b. *Kono   mise-de-wa kankodori-ga nai-te   oka-nakat-ta.
           this   shop-at-Top cuckoo-Nom   sing   put-Neg-Past

           'There were almost no customers shopping at this shop.'   (Clausal idiom)

The data (5) through (7) suggest therefore that the aspectual construction where the verb *iru* is used should have a raising structure.[3] The variant of the aspectual construction in (4b), where

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[3] To be more precise, the raising construction is formed when the subject is raised to Spec-TP. If it does not undergo raising, the resulting structure only involves embedding. As I will discuss below, the subject is moved to Spec-TP when T bears a feature [+Nom] to value the case feature of a nominative argument. In such a case, the aspectual construction involves raising rather than control. Japanese has

nai precedes the aspectual verb *iru*, has an agentive implication semantically, on the basis of which Takezawa (2004) argues that it should have a control structure. Nevertheless, the pattern of distribution observed above suggests that (4b), as well as (4a), should be counted as a raising construction.

2.2. Clause Structure and Negative Scope

In this section, I first delineate some assumptions about clause structure in Japanese. I postulate that Japanese has a clause structure like (8b), where a tense head *-ru* or *-ta* occupies the Fin-head position of FinP—projected in a higher position than TP.

(8) a. [$_{FinP}$ [$_{TP}$ SUBJ [$_{vP}$ ….. V-v] *-ru/-ta*] Fin]

  b. [$_{FinP}$ [$_{TP}$ SUBJ [$_{vP}$ ….. V-v] ~~-ru/-ta~~] *-ru/-ta*]

I assume that in Japanese, a tense element is merged in the T-head position, as in (8a), but is head-raised to Fin, as in (8b), for the purpose of identifying the finiteness of the clause (see Rizzi 1997, Radford 2009). As a consequence of head raising, which places tense in the Fin-head position, the structure where tense takes scope over TP is created in overt syntax.

In this connection, note that in Romance and Germanic languages, complementizers often have the morphological manifestation of finiteness/infiniteness, suggesting that FinP is associated with the C-system, as discussed by Rizzi (1977). This applies to English as well, since the finiteness of an embedded clause is signalled by the type of complementizer.

Rizzi (1997) suggests that the two sorts of complementizers *di* and *che* in Italian should occupy distinct head positions, on the basis of the facts given in (9) and (10).

(9) a. Credo che il tuo libro, loro lo apprezzerebbero molto.

    'I believe that your book, they would appreciate it a lot.'

  b. *Credo, il tuo libro, che loro lo apprezzerebbero molto.

    'I believe, your book, that they would appreciate it a lot.'   Rizzi (1997:218)

(10) a. *Credo di il tuo libro, apprezzarlo molto.

    'I believe 'of' your book, to appreciate it a lot.'

  b. Credo, il tuo libro, di apprezzarlo molto.

    'I believe, your book, 'of' to appreciate it a lot.'   Rizzi (1997: 218)

The complementizer *di* is construed as the non-finite counterpart of the finite complementizer

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a number of auxiliary verbs taking *te*-complements. These verbs are divided into two classes; while verbs like *kuru* 'come' and *iku* 'go' take raising structures, verbs like *ageru* 'give' and *miru* 'try' take control structures.

che. On the basis of the fact that *che* precedes, and *di* follows, a left-dislocated phrase appearing in TopP in Italian, as in (9) and (10), Rizzi claims that *che* appears in the head position of ForceP and *di* the head position of FinP.

The fact regarding the complementizers *that* and *for* in English is comparable to what is observed for the two complementizers *che* 'that' and *di* 'of' in Italian. Rizzi (1997) in fact argues that in English, the two types of complementizers *that* and *for* occur in distinct head positions above TP, in the light of the contrast observed in (11) and (12).

(11) a. He is anxious that John will leave tomorrow.

     b. He is anxious that, tomorrow, John will leave.　　Radford (2009: 335)

(12) a. He is anxious for John to leave tomorrow.

     b. *He is anxious for, tomorrow, John to leave.　　Radford (2009: 335)

The finite complementizer *that* fills in the head position of ForceP, so that a topic accommodated in TopP can follow it.[4] This ordering is impossible with *for*, because it occurs in the head position of FinP. The data suggest that in English (and Italian), FinP is associated with a non-finite complementizer rather than tense itself.

In Japanese, by contrast, no distinction between finite versus non-finite clauses is drawn by the kind of complementizer, i.e. finiteness is not signalled by a complementizer morphologically, and tense can be distinguished only by way of its morphology. In the light of this fact, I surmise that in Japanese, unlike English/Italian, the T-head is associated with finiteness, and that since T is located below Fin, head raising of tense to Fin is instantiated. Under the view held here, FinP plays a different role in English/Italian and Japanese.

Let us now turn to the question of how negative scope is determined. It is well-observed that in Japanese, the scope of negation extends over TP in a simple clause (see Kato 1985, and many others), so that no subject-object asymmetry is observed in licensing NPIs, as illustrated in (13).

(13) a. John-ga　*hon-sika*　yoma-na-i.
        John-Nom　book-only　read-Neg-Pres

      'John reads only books.'

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[4] In Rizzi's (1997) analysis, the C-system is comprised of several distinct projections, as in (i).

(i) Force … (Topic)…(Focus)… Fin

The crucial point is that ForceP is projected above the Topic-Focus field, but FinP is located below it, so that a topic appearing in the left periphery is ordered differently, depending on what type of complementizer appears in the clause.

b. *John-sika*   hon-o   yoma-na-i.
   John-only   book-Acc   read-Neg-Pres

   'Only John reads books.'

The NPI *sika* (attached to DP/PP) is licensed by falling under the scope of negation (see Aoyagi and Ishii 1994). In (13), both subject and object NPIs are licensed, on the grounds that the scope of *nai* extends over the entire clause. Needless to say, DP/PP-*sika* is not licensed if it does not appear in the negative context.

(14) a. *John-ga   *hon-sika*   yom-u.
         John-Nom book-only   read-Pres

         'John reads only books.'

      b. *John-sika* hon-o   yom-u.
         John-only   book-Acc   read-Pres

         'Only John reads books.'

      c. *John-sika* [Mary-ga   naka-nakat-ta to]   it-ta.
         John-only   Mary-Nom cry-Neg-Past   that say-Past

         'Only John said that Mary did not cry.'

In both (14a) and (14b), the NPI *sika* is not licensed due to the absence of a negator, i.e. negative scope is not projected which can license an NPI. In (14c), the NPI *sika* appears in the matrix clause, but the negator is located in the embedded clause. Thus, (14c) is ruled out on the grounds that the NPI falls outside the scope domain of the negator.

Negative scope can be assumed to be fixed structurally. The clause-wide scope of negation can be attributed to the presence of Neg-raising, which raises a Neg-head to T (and further to Fin), as depicted in (15).

(15)   [$_{FinP}$ [$_{TP}$ SUBJ [$_{NegP}$ [$_{vP}$ [$_{VP}$ OBJ   V] v] ~~Neg~~] ~~Neg-T~~] Neg-T-Fin]

In Japanese, T attracts a Neg-head to form a complex head, and further, since the finiteness of T needs to be licensed via head-raising to Fin, the entire head complex including Neg occurs in the Fin-head position. The complex head has TP in its c-commanding domain, and the scope of negation extends over TP accordingly.

In English, the negator *not* takes narrower scope, and a subject-object asymmetry obtains with regard to NPI licensing, as exemplified in (16).

(16)   a. John did not read *anything*.

       b. **Anyone* did not read the book.

This shows that the extent of negative scope differs between Japanese and English.[5] Arguably, no Neg-raising takes place in English.

(17) [$_{FinP}$ [$_{TP}$ SUBJ T [$_{NegP}$ *not* [$_{vP}$ v-V [$_{VP}$ OBJ]]]]]]

In English, the negator resides in NegP, as illustrated in (16), and as such, negative scope does not extend over TP.

Japanese is similar to English, in that a negator looks like occupying a lower position than tense (at least morphologically). Nevertheless, Japanese, unlike English, takes clause-wide negative scope. In Japanese, T is combined with Neg to form a complex head, and this complex head is raised to Fin, with the result that Neg takes scope over TP.[6] TP falls under the scope of *nai*, as a result of head raising, so the negative *nai* can license both subject and object (even if the subject undergoes raising to the clause-subject position of Spec-TP).

The existence of Neg-raising in Japanese, which leads to the formation of a complex head, is evidenced by (18).

(18) *John-ga   hasit-te   i-naku-**mo**   ar-u.
     John-Nom   run   be-Neg-also   be-Pres

     'John is also not running.'

The example in (18) illustrates that the negative *nai* resists the suffixation of an adverbial particle on its right. As discussed by Kishimoto (2007, 2008), this is indicative of the fact that *nai* and the tense form a complex head syntactically.

When tense is separated from the adjectivally-inflecting negator by virtue of an emphatic particle, the supportive verb *aru* 'be' is inserted to the left of the stranded tense, in the same way that the supportive verb *aru* is inserted when tense is separated from its host adjective, as in (19).

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[5] In English, the negator *not* takes scope over subjects (located in Spec-TP) if it is raised to a higher position. Thus, an asymmetry in NPI interpretation obtains in the sentences in (i).

(i)   a.   What did anyone not buy?

       b.   What didn't anyone buy?

In (ia), *anyone* has a free-choice interpretation, and does not serve as an NPI. This is due to the fact that the subject is located in the position which falls outside the scope of *not*. In (ib), in contrast, *anyone* can serve as an NPI. The difference accrues from the fact in (ia), but not in (ib), *not* is located in a position where its scope extends over the subject.

[6] The peculiarity of negation in Japanese lies in the fact that the sentential negator *nai* is combined with tense to form a complex head. In English, and also in other European languages, sentential negators, even if they are realized as heads, function as elements independent of tense, and normally do not interact with it (see Haegeman 1995, Zanuttini 1997, and others).

(19) John-wa   kanasiku-**mo**   ar-u.
      John-Top   sad-also   be-Pres

      'John is also sad.'

In (18), in opposition to (19), the predicative sequence is not well-formed even with this morphological adjustment, i.e., (18) is not acceptable even if an appropriate supportive verb is inserted to the left of the stranded tense, which suggests that the negative *nai* be raised and adjoined to the tense to form a complex head syntactically.

This analysis is based on the assumption that a complex head cannot comprise a particle inside even if there is a morphological boundary. This view gains support from the examples in (20).

(20)   a. *kaigai-**mo**   ryokoo   b. kaigai-ryokoo-**mo**
          overseas-also   travel   overseas-travel-also

          'overseas as well travel'   'overseas travel as well'

The entire sequence of a compound noun like *kaigai ryokoo* 'overseas travel' forms a complex head, despite the fact that it consists of two elements *kaigai* 'overseas' and *ryokoo* 'travel' morphologically. With this compound noun, a particle can be added to the right of the entire complex, as in (20b), but cannot intervene between the morphological boundary of the two elements, as in (20a). Since an adverbial particle cannot be inserted unless there is a syntactic break, it is reasonable to state that the impossibility of inserting a particle to the right of the negative *nai* in (18) gives us a sign that the head *nai* is raised to a higher head to derive a complex head.

While a particle is prevented from occurring to the right of a negator, as in (18), a particle can be added to the right of the aspectual verb *iru*.

(21)   John-ga   hasit-te i-**mo**   si-na-i.
       John-Nom   run   be-also   do-Neg-Pres

       'John is also not running.'

When a bound element is separated from the verb, as in (21), the supportive verb *suru* 'do' is used for morphological support. The acceptability of (21) shows that the aspectual verb does not form a syntactically tight unit with a higher predicative head, i.e. no head raising takes place.

Given the facts noted above, the verbal sequences in (22) can be posited for the two variants of the aspectual construction; (22a) represents a case where the negator appears in the matrix clause, and (22b) is a case where the negator is in the complement clause.

(22)   a. [$_{FinP}$ [$_{TP}$ [$_{NegP}$ [[$_{FinP}$ [$_{TP}$ [$_{vP}$ V-v] ~~T~~] T-Fin] Be] ~~Neg~~] ~~Neg-T~~] **NEG**-T-Fin]

b.　[FinP [TP [[FinP [TP [NegP [vP V-v] ~~Neg~~] ~~Neg-T~~] **NEG**-T-Fin] Be] ~~T~~] T-FIN]

In the aspectual construction, the morpheme *-te*, which occurs with the main verb, has an infinitival (or gerundive) character semantically, and occurs in the head position where a finite tense is placed. In view of this fact, it is reasonable to assume that *-te* heads a TP projection that constitutes a non-finite complement (Kishimoto 2012).

　　Under the view taking the finiteness of a clause to be determined by Fin, which is placed just above T, head raising of a tense head to Fin takes place even in the complement clause, because the non-finite nature of *-te* needs to be determined within the projection of FinP. Therefore, when a negator is embedded inside the aspectual verb, it should undergo Neg-raising to T filled by the affix *-te* (or *-de*), and subsequently to the embedded Fin. In effect, the examples in (23) suggest that Neg-head raising takes place in the complement clause of the aspectual construction.

(23)　a. *John-ga　　hasira-naku-**mo**　at-te　i-ru.
　　　　John-Nom　run-Neg-also　　　be　　be-Pres

　　　　'John is also not running.'

　　　b.　John-ga　　　hasira-nai-de-**mo**　i-ru.
　　　　　John-Nom　　run-Neg-also　　　　be-Pres

　　　　　'John is also not running.'

The unacceptability of (23a) shows that the negative head is raised to *-te* to derive a complex head. On the other hand, (23b) shows that *-te* is not syntactically combined with a higher head by head raising. This being the case, it can be stated that a complex head comprised of Neg and T (*-te/-de*) resides in the embedded Fin-head position, as (22b) illustrates.

　　The aspectual construction has a bi-clausal structure, and thus, the extent to which the scope of the negative *nai* extends should differ depending on where it appears. This is in fact the case. To be concrete, when *nai* intervenes between the main and the aspectual verbs, a difference in the possibility of NPI licensing is observed, as seen in (24).

(24)　a.　Zutto　　　John-ga　　*hon-sika*　　yoma-nai-de　i-ru.
　　　　　all.the.time John-Nom　book-only　　read-Neg　　be-Pres

　　　　　'John has been reading only books all the time.'

　　　b. *Zutto　　　*John-sika*　　hon-o　　　yoma-nai-de　i-ru.
　　　　　all.the.time John-only　　book-Acc　read-Neg　　be-Pres

　　　　　'Only John has been reading books all the time.'

While the NPI object in (24b) is licensed, the NPI subject in (24a) is not, showing that the

negative scope does not extend over the matrix clause.[7] If the negative *nai* is placed in the matrix clause, it takes scope over the matrix clause, and there is no subject-object asymmetry found in NPI licensing, as shown in (25).

(25) a. Saikin   John-ga   *hon-sika*   yon-de   i-na-i.
        Recently   John-Nom   book-only   read   be-Neg-Pres

        'Recently, John has been reading only books.'

    b. Saikin   *John-sika*   hon-o   yon-de   i-na-i.
        Recently   John-only   book-Acc   read   be-Neg-Pres

        'Recently, only John has been reading books.'

Importantly, the difference in acceptability observed between (24) and (25) suggests that the nominative subject is moved to Spec-TP from within vP by virtue of the EPP requirement imposed on T, as illustrated in (26).

(26) a. [FinP [TP   SUBJ   [NegP [[FinP [TP   [vP OBJ   V-v]] T-Fin] Be]]] **NEG-T-Fin**]

    b. [FinP [TP   SUBJ   [[FinP [TP [NegP [vP OBJ   V-v]]] **NEG-T-Fin**] Be]] T-Fin]

In (26a), where *nai* follows the aspectual verb *iru*, *nai* is raised to the matrix Fin, and thus, its scope domain extends over the entire clause. Consequently, the subject as well as the object of the main verb falls under the scope of negation. (In (26a), the subject has undergone raising to the matrix Spec-TP, and yet it falls under scope of negation.) On the other hand, in (26b), where *nai* precedes the aspectual verb, its scope extends only over the embedded clause. In this case, the object falls under scope of negation, which is placed in the embedded clause, but the subject does not. In (24), a subject-object asymmetry is observed in regard to NPI licensing, since the subject is extracted from the scope domain of *nai*. (Note that in the aspectual construction, two TP projections are present, but the lower non-finite TP is not relevant for the present discussion of the EPP.)

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[7]   An NPI object scrambled across the subject is not licensed by the negator *nai* that precedes the aspectual verb, as shown in (ia).

(i) a. ??? Zutto   *hon-sika*ᵢ   John-ga   *t*ᵢ   yoma-nai-de ir-u.
          all.the.time book-only   John-Nom   read-Neg   be-Pres

       'John has been reading only books all the time.'

    b. *Zutto   hon-oᵢ   *John-sika*   *t*ᵢ   yoma-nai-de ir-u.
        all.the.time   book-Acc   John-only   read-Neg   be-Pres

       'Only John has been reading books all the time.'

In (ia) both subject and object are located in the matrix clause, and thus, the subject NPI is not licensed by *nai*, either, as shown in (ib). Miyagawa (2001) claims that the subject may remain in vP-position when an object is scrambled across it, but the examples in (i) suggest that this is not case.

It is worth noting at this point that a similar pattern of distribution is found in (27), which involve adjunct NPIs.

(27) a. *John-wa   *kinoo-made-sika*   hataraka-nai-de   i-ta.
       John-Top   yesterday-until-only   work-Neg   be-Past

   'John was working only until yesterday.'

    b. Zutto   John-wa   *koko-de-sika*   hataraka-nai-de   i-ta.
       all.the.time John-Top   here-in-only   work-Neg   be-Past

   'John was working only here all the time.'

The temporal adverb in (27a) should be located in the matrix clause, because it is associated with the matrix tense. On the other hand, the locative PP in (27b) specifies the place where the event described by the main verb takes place, which suggests that it is located in the embedded clause. The contrast in acceptability between (27a) and (27b) shows that the temporal adjunct appears in the matrix clause, which is outside the scope of *nai* embedded under *iru*, but the locative adjunct appears in the embedded clause.

Again, no difference in acceptability is observed between the two types of NPI adjuncts with *sika* if the negator follows the aspectual verb, as shown in (28).

(28) a. John-wa   *kinoo-made-sika*   hatarai-te   i-nakat-ta.
       John-Top   yesterday-until-only   work-Neg   be-Neg-Past

   'John was working only until yesterday.'

    b. Zutto   John-wa   *koko-de-sika*   hatarai-te   i-nakat-ta.
       all.the.time John-Top   here-in-only   work-Neg   be-Neg-Past

   'John was working only here all the time.'

When *nai* appears in the matrix clause, as in (28), it takes scope over the entire clause. Consequently, both types of NPI adjuncts in (28) are licensed under the scope of negation. In (27), in contrast, the negator that appears in the complement clause takes scope over the embedded TP, but not beyond, so a difference in acceptability shows up there.

Note also that the subjects of unergative and unaccusative predicates fall outside the scope of negation in the aspectual construction where *nai* precedes the aspectual verb *iru*.

(29) a. *Zutto   *John-sika*   hasira-nai-de   i-ru.
        all.the.time John-only   run-Neg   be-Pres

   'Only John has been running all the time.'   (Unergative)

b. *Zutto　　　*John-sika*　taore-nai-de　i-ru.
　　all.the.time　John-only　fall-Neg　　　be-Pres

　　'Only John has been falling down all the time.'　(Unaccusative)

The fact shows that not merely unergative predicates but also unaccusative predicates instantiate the raising of their subjects to the matrix Spec-TP. It goes without saying that when the negative *nai* follows the aspectual verb, both types of sentences are acceptable, because the scope of negation extends over the matrix TP.

(30)　a.　Saikin　　*John-sika*　hasit-te　i-na-i.
　　　　　recently　John-only　run　　　be-Neg-Pres

　　　　　'Only John has been running recently.'　　　(Unergative)

　　　b.　Saikin　　*John-sika*　taore-te　i-na-i.
　　　　　recently　John-only　fall　　　be-Neg-Pres

　　　　　'Only John has been falling down recently.'　(Unaccusative)

Some researchers, such as Kageyama (1993) and Nishigauchi (1992), claim that the subjects of unaccusative predicates, as opposed to those of unergative predicates, do not undergo raising. On the contrary, since both the subjects fall outside the scope of negation in (29), where the negator is placed in the complement clause, it must be the case that the subjects undergo raising to Spec-TP regardless of whether the predicates are unergative or unaccusative.

In the aspectual construction where the negator appears to the left of the aspectual verb, the matrix clause falls outside the scope of negation, so that a subject-object asymmetry is observed with regard to NPI licensing. In the next section, I will turn to the discussion of evidence suggesting that the possibility of subject raising in Japanese should be conditioned by case.

3.　Canonical and Non-canonical Case Marking of Subjects

In this section, it is shown that when T is specified for [+Nom], the EPP requirement is imposed on it. I argue that nominative and dative subjects undergo subject raising, but obliquely-marked subjects do not (provided that no nominative argument appears in the clause).

3.1.　Subject Raising in the Raising Construction

In the literature on Japanese, it is a locus of debate where subjects are located in clause structure (see, e.g., Fukui 1986, 1990, Kuroda 1988, Ueda 1990, Nishigauchi and Ishii 2003). This discussion is often confined to cases where subjects receive nominative case, but subjects can bear some other case markings, e.g. the dative *ni*, ablative *kara* 'from', and

instrumental *de* 'with', as illustrated in (31).

(31) a. <u>John-ga</u>   ronbun-o   kai-ta.
          John-Nom   paper-Acc   write-Past

          'John wrote a paper.'   (Nominative subject)

     b. <u>John-ni</u>   sore-ga   mie-ta.
          John-Dat   that-Nom   see-Past

          'John saw that.'   (Dative subject, mainly for stative predicates)

     c. <u>Watasi-kara</u>   sono   koto-o   hanasi-ta.
          I-from   that   fact-Acc   speak-Past

          'I talked about that matter.'   (Ablative subject, marks a source)

     d. <u>Kodomo-tati-de</u>   atumat-ta.
          child-Pl-with   get.together-Past

          'The children got together.'   (Instrumental subject, marks a plural agent)

In Japanese, at least four distinct types of marking are available for subjects.[8] The subject is marked with nominative case in (31a), and dative case in (31b). In (31c), the subject bears the ablative *kara* 'from', since it is thematically conceived as a source, as well as an agent, i.e. the ablative case *kara* can be assigned to the subject which is identified as a source (Kishimoto 2009, 2010).[9] In (31d), the subject is assigned *de* 'with', for it is an agent argument which has a plural referent, i.e. the argument refers to a group of people (Kishimoto 2005, Takubo 2010).

The thematic relations of arguments are uniquely identifiable by *kara* and *de*, which shows that they are construed as inherent (or semantic) cases. On the other hand, nominative and dative cases are structural ones, and hence do not specify the thematic relations of arguments which they occur with.[10] In the following discussion, making crucial use of the aspectual construction, I will show that subject raising is instantiated in (31a-b), where the subjects bear structural case, but not in (31c-d), where the subjects carry inherent case.

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[8] The discussion in this paper is limited to cases where subjects appear in main clauses, but it is worth noting that some other markings are available in embedding contexts; for instance, subjects is marked with accusative case when they appear in the embedded clause of the ECM construction, and they can bear genitive case when they appear inside relative or noun complement clauses.

[9] When a DP marked with *kara* specifies ordering, it behaves like an adjunct. Thus, this type of DP is not discussed here (see Kishimoto 2012).

[10] Although there are a number of different views on dative case, I assume that it falls into the class of structural case. See, e.g. Butt (2006) for discussion on this point.

To begin, the underlined arguments bearing different markings in the four clauses in (31) are all counted as subjects syntactically. This can be confirmed by the fact that they can be the antecedents of the subject-oriented *zibun*.

(32) a. John$_i$-ga   zibun$_i$-no   ronbun-o   kai-ta.
          John-Nom   self-Gen   paper-ACC   write-Past

      'John wrote his own paper.'

     b. John$_i$-ni   zibun$_i$-no   ie-ga   mie-ta.
          John-Dat   self-Gen   house-Nom   see-Past

      'John saw his own house.'

     c. John$_i$-kara-wa   zibun$_i$-no   koto-o   hanasa-nakat-ta.
          John-from-Top   self-Gen   fact-Acc   speak-Neg-Past

      'John did not talk about his own matter.'

     d. Kodomo-tati$_i$-de   zibun$_i$-no   nimotu-o   hakon-da.[11]
          child-Pl-with   self-Gen   luggage-Acc   carry-Past

      'The children carried their own luggage.'

Subject honorification provides another type of corroboration for the adequacy of the present view. The examples in (33) show that the underlined arguments in (31) can be targeted by subject honorification.

(33) a. Sensei-ga   ronbun-o   o-kaki-ni-nat-ta.
          teacher-Nom   paper-ACC   write-Hon-Past

      'The teacher wrote a paper.'

     b. Sensei-ni   sore-ga   o-mie-ni-nat-ta.
          teacher-Dat   that-Nom   see-Hon-Past

      'The teacher saw that.'

     c. Sensei-kara   sono   koto-o   o-hanasi-ni-nat-ta.
          teacher-from   that   fact-Acc   speak-Hon-Past

      'The teacher talked about that matter.'

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[11] In this example, *zibun* can have either a group or a distributive reading. The two readings are available for *zibun* in cases where a subject refers to more than one individual.

    d. Sensei-tati-de   o-atumari-ni-nat-ta.
        teacher-Pl-with   get.together-Hon-Past

        'The teachers got together.'

Given that the underlined arguments in (31) can be the targets of subject honorification, and the antecedents of the reflexive *zibun*, both of which have subject orientation, it is safe to state that they serve as subjects.[12]

    Next, let us confirm that nominative subjects undergo raising to the matrix Spec-TP in the aspectual construction. This can be seen by the fact that nominative subjects lie outside the scope of negation when *nai* is embedded under *iru*.

(34) a. *Zutto   *John-sika* gohan-o   tabe-nai-de i-ta.
          all.the.time   John-only rice-Acc   eat-Neg   be-Past

          'Only John has been eating rice all the time.'

      b. Zutto   John-ga   *gohan-sika* tabe-nai-de i-ta.
          all.the.time John-Nom rice-only   eat-Neg   be-Past

          'John has been eating only rice all the time.'

In (34), the subject, but not the object, is allowed to occur with *sika*. Since the negative scope extends over the complement clause, but not the matrix clause, the fact shows that the nominative subject is raised to the matrix Spec-TP.

    Similarly, in the dative-subject construction, the dative subject is raised to Spec-TP, whereas an object is not even if it is marked with nominative case. The contrast in acceptability observed between (35a) and (35b) with regard to the licensing of the NPI *sika* provides a confirmation of this fact.

(35) a. *Zutto   *John-ni-sika*   sonna undoo-ga   deki-nai-de i-ru.
          all.the.time John-Dat-only that   exercise-Nom   can.do-Neg be-Pres

          'Only John has been able to do that exercise all the time.'

      b. Zutto   John-ni-wa   *sonna undoo-sika* deki-nai-de i-ru.
          all.the.time John-Dat-Top that   exercise-only   can.do-Neg be-Pres

          'John has been able to do only that exercise all the time.'

Since the dative subject cannot occur with *sika*, as shown in (35a), it must be located in Spec-TP in the main clause, i.e. the dative subject is moved to the matrix Spec-TP by virtue of subject raising.

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[12] Subject honorification is subject-oriented, as often discussed (see e.g. Harada 1976, Hasegawa 2006), but in some cases, speaker variation might arise with regard to its possible targets.

In the dative-subject construction, just like the nominative-subject construction, the subject-object asymmetry in NPI licensing observed in (35a-b) does not obtain when the negator appears in the matrix clause. This is shown in (36).

(36) a. *John-ni-sika*   sono   undoo-ga   deki-te   i-na-i.
          John-Dat-only   that   exercise-Nom can.do   be-Neg-Pres

      'Only John can do that exercise.'

      b. John-ni-wa   *sono   undoo-sika*   deki-te   i-na-i.
          John-Dat-Top   that   exercise-only   can.do   be-Neg-Pres

      'John can do only that exercise.'

The absence of subject-object asymmetry in NPI licensing is naturally expected: since the negative *nai* that follows the aspectual verb takes scope over the matrix clause, an NPI is licensed regardless of whether it appears in the matrix subject position or in the embedded object position.

Let us continue to consider how NPIs with *sika* behave in cases where the subject is marked with *de* 'with' or *kara* 'from'. First, in the aspectual construction where *nai* is located in the complement clause (37), the NPI subject marked with the oblique *de* 'with', as well as the NPI object, is licensed by *nai*.

(37) a. Zutto   *kodomo-tati-de-sika* asobi-no   keikaku-o   tate-nai-de i-ru.
          all.the.time child-Pl-Instr-only   play-Gen   plan-Acc   make-Neg   be-Pres

      'Only the children have been making plans for their play all the time.'

      b. Zutto   kodomo-tati-de *asobi-no   keikaku-sika* tate-nai-de i-ru.
          all.the.time child-Pl-Instr   play-Gen   plan-only   make-Neg   be-Pres

      'The children have been making only plans for their play all the time.'

In (37), the subject and the object fall under the scope of negation, and therefore, an NPI can appear in either the subject or the object position.[13] Since the negative scope does not extend

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[13] In a sentence like (38b), even when the object is scrambled across the *de*-marked subject, the sentence is acceptable, as in (i).

(i) Zutto   *asobi-no   keikaku-sika*$_i$ kodomo-tati-de t_i tate-nai-de i-ru.
     all.the.time play-Gen   plan-only   child-Pl-Instr   make-Neg   be-Pres

     'The children have been making only plans for their play all the time.'

This is obviously a reflection of the fact that the *de*-marked subject remains in the base position without raising to TP. In (i), since the subject remains in the embedded clause, the scrambled object can appear in the embedded clause, over which the negative *nai* extends its scope. The same fact obtains in a clause where the subject is marked with *kara* 'from'.

over the matrix clause, it must be the case that the obliquely-marked subject remains in situ without raising to the matrix Spec-TP.

In the ablative-subject construction in (38) as well, the oblique NPI subject, alongside an accusative NPI object, is licensed by falling under the scope of *nai* located in the subordinate clause.

(38) a. Zutto   *hahaoya-kara-sika*   hanasi-o   si-nai-de i-ru.
          all.the.time   mother-from-only   talk-Acc   do-Neg   be-Pres

          'Only the mother has been talking all the time.'

      b. Zutto   hahaoya-kara-wa   *sonna hanasi-sika*   si-nai-de i-ru.
          all.the.time   mother-from-Top   that   talk-only   do-Neg   be-Pres

          'The mother has been giving only that kind of talk all the time.'

The fact that both NPI subject and object are licensed suggests that the *kara*-marked subject as well does not undergo raising to the matrix TP.[14]

The data discussed thus far indicate that dative and nominative subjects undergo raising to Spec-TP, while oblique subjects do not. The question to be addressed at this point is why it is that the nominative and the dative subjects undergo raising to Spec-TP. As well observed (see Takezawa 1997, Tada 1992, and many others), the availability or unavailability of nominative case in Japanese is correlated with the question of whether the clause has (finite) tense. In the light of the fact that both nominative-subject and dative-subject constructions comprise nominative arguments, whose case feature is valued by tense, I suggest that when tense carries the uninterpretable case feature [+Nom], the EPP requirement is imposed on T, i.e. an EPP feature is assigned to it.

If subject raising is implemented in cases where tense has [+Nom] to value the case feature of a nominative argument, sentences which do not comprise any nominative arguments are not expected to instantiate subject raising. Note, however, that Japanese has the case requirement that a tensed clause has at least one nominative argument, which is often referred to as the 'nominative-case' constraint (Shibatani 1978). The nominative-case constraint applies fairly persistently, but still, there are a number of syntactic contexts where the nominative-case constraint does not apply. One such context is found in the oblique-subject constructions where the nominative case on the subject, which needs to be licensed by T, is replaced by an oblique marker *kara* or *de*. The data regarding the oblique-subject constructions in (37) and (38) confirm that no subject raising takes place when the clause

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[14] It goes without saying that the obliquely-marked NPI subject raised remaining in the base position is licensed by the negator *nai* that follows the aspectual verb.

does not comprise any nominative argument.[15]

Note that the dative-subject construction is subject to the nominative-case constraint. Thus, the variant of the dative-subject clause that marks the object with accusative case in (39) is not acceptable.

(39)   John-ni   {sore-ga/*sore-o}   deki-ru.
       John-Dat   that-Nom/that-Acc   can.do-Pres

       'John can do that.'

Owing to the fact that the nominative-case constraint applies to the dative-subject construction, the syntactic construal which does not have a nominative argument cannot be constructed from the dative-subject construction (see section 4).

Under the present analysis taking tense to be responsible for determining the possibility of subject raising, it is further predicted that the raising of an oblique-marked subject to Spec-TP is instantiated if the clause has a nominative argument. This prediction is in fact borne out, since oblique subjects are susceptible to subject raising when they occur in clauses that contain nominative objects, as I will discuss below. (40) is a case where the subject is marked with *kara* 'from'.

(40)   a. *Zutto   *hahaoya-kara-sika*   hanasi-ga deki-nai-de i-ru.
          all.the.time mother-from-only   talk-Nom   can.do-Neg be-Pre

          'Only the mother has been able to talk all the time.'

       b. Zutto   hahaoya-kara-wa *sonna* *hanasi-sika* deki-nai-de i-ru.
          all.the.time mother-from-Top   that   talk-only   can.do-Neg   be-Pres

          'The mother has been able to give only that kind of talk all the time.'

The examples in (40) differ from those in (38) in the choice of predicate. In (40), the object is marked with nominative case, since the predicate is *dekiru* 'can do'. (Note that *dekiru*, which can sanction nominative case on its object, is a suppletive potential form of *suru* 'do'.) The examples in (40) show that while the NPI object, which is marked with nominative case, is licensed by *nai*, the NPI subject does not, owing to its raising to Spec-TP.

The same holds true for the construction whose subject is *de*-marked. As can be seen from (41), the subject marked with *de* is amenable to subject raising if the clause contains a nominative object.

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[15]   In matrix clauses, the subjects of unaccusative verbs cannot be marked with accusative case, even though they initially appear in object position. It should also be noted that no semantic markers substituting the nominative case on the subjects of unaccusative verbs are available in Japanese.

(41) a. *Zutto   *kodomo-tati-de-sika*   hanasi-ga   deki-nai-de   i-ru.
         all.the.time   child-Pl-with-only   talk-Nom   can.do-Neg   be-Pres

      'Only the children have been able to talk all the time.'

      b. Zutto   kodomo-tati-de-wa *sonna hanasi-sika* deki-nai-de   i-ta.
         all.the.time child-Pl-with-Top that   talk-Nom   can.do-Neg   be-Past

      'The children have been able to give only that kind of talk all the time.'

In (41), the subject marked with *de*, but not the nominative object, falls outside the scope of negation. This stands in contrast with the *de*-marked subject appearing in the clause which has an accusative object, as in (37).

    The negative *nai*'s failure to license the oblique subject NPIs in the aspectual construction where the negative takes scope only over its complement clause gives us a clear indication that oblique subjects are raised to the matrix Spec-TP when the EPP requirement is obtained, as illustrated in (42b).

(42) a. [TP   [TP   [vP SUBJ-kara/de OBJ-ACC Vv]] T]

      b. [TP SUBJ-kara/de [TP ~~SUBJ-kara/de~~ [vP ~~SUBJ-kara/de~~ OBJ-NOM   Vv]] T]

Subject raising is not implemented when an object is marked with accusative rather than nominative case. Thus, it is reasonable to conclude that subject raising is induced when tense bears a case feature to value the case feature on a nominative argument.

3.2. Control Construction

    The raising construction where the negator is located in the complement clause, no subject-object asymmetry in NPI licensing is observed when the subject does not undergo raising to the matrix Spec-TP, as seen above. In the aspectual construction where the main verb is combined with an aspectual verb like *oku* 'put' (see section 2.1), the subject is selected by *oku*, and thus, it is base-generated in the matrix clause, while PRO appears in the complement clause, as (43) illustrates.

(43)   [FinP [TP [vP SUBJ [FinP [TP PRO [NegP [vP V-v]]] **NEG-T-FIN**] PUT]] T-FIN]

This leads to another predication. In the control construction where the negator is located to the left of the verb *oku* 'put', as in (43), it is predicated that NPI subjects will not be licensed even in a case where the EPP is not imposed on the clause. This prediction is in fact borne out, as we can see from (44).

(44) a. *Zutto   *kodomo-tati-de-sika*   asobi-no   keikaku-o   tate-nai-de   oi-ta.
         all.the.time   child-Pl-Instr-only   play-Gen   plan-Acc   make-Neg   put-Past

      'Only the children made a plan for their play all the time.'

b. Zutto   kodomo-tati-de *asobi-no keikaku-sika* tate-nai-de oi-ta.
   all.the.time child-Pl-Instr   play-Gen plan-only   make-Neg   put-Past

   'The children made a plan only for their play all the time.'

In (44), the subject marked with *de* should not be raised to the matrix Spec-TP in the absence of a nominative argment. Nevertheless, the subject lies outside the scope of negation, since the negative scope extends only over the complement clause. Hence, (44a) is unacceptable. The same fact obtains even when the subject is marked with *kara*, as seen in (45).

(45) a. *Zutto   *hahaoya-kara-sika* hanasi-o   si-nai-de oi-ta.
         all.the.time mother-from-only   talk-Acc   do-Neg   put-Past

         'Only the mother talked all the time.'

      b. Zutto   hahaoya-kara-wa *sonna hanasi-sika*   si-nai-de oi-ta.
         all.the.time mother-from-Top that   talk-only   do-Neg   put-Past

         'The mother talked about only that kind of thing all the time.'

The difference in acceptability between (44a) and (45a), on the one hand, versus (44b) and (45b), on the other hand, is naturally expected, given the configuration (43). In (43), the subject remaining in the base-generated position of the matrix clause falls outside the scope of *nai*, which resides in the embedded clause. On the other hand, the object lies inside the scope of negation. Accordingly, a subject-object asymmetry is observed with regard to NPI licensing.[16]

This pattern of distribution is found in a case where the subject is marked with nominative case, as seen in (46).[17]

(46) a. *Zutto   *Ken-sika* hanasi-o   si-nai-de oi-ta.
         all.the.time Ken-only talk-Acc   do-Neg   put-Past

         'Only Ken talked all the time.'

      b. Zutto   Ken-wa   *sonna hanasi-sika* si-nai-de oi-ta.
         all.the.time Ken-Top   that   talk-only   do-Neg   put-Past

         'Ken gave only that kind of talk all the time.'

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[16] In Hornstein's analysis (1999), which dispenses with PRO, the controller undergoes movement starting from the position where PRO is base-generated. Even if this analysis adopted, no problem arises, because only the overt position of the controller is relevant for NPI licensing.

[17] The dative-subject construction is not discussed here. This is because the aspectual construction with the verb *oku* 'put' is not acceptable when a dative-subject clause, which does not describe an event performed by the subject, is embedded.

The nominative subject in (46), unlike the oblique subjects in (44) and (45), should be moved to the matrix Spec-TP. Nevertheless, these subjects share the property that they are located in the matrix clause, and hence the subject NPIs are not licensed by *nai* regardless of their marking in the control construction where the negator precedes the verb *oku* 'put'.

On the other hand, when the negator follows the verb *oku* 'put', the subject NPIs are licensed under the scope of negation, as shown in (47).

(47)　a. *Kodomo-tati-de-sika*　asobi-no　keikaku-o tate-te　oka-nakat-ta.
　　　　child-Pl-Instr-only　　play-Gen plan-Acc　make　put-Neg-Past

　　　　'Only the children made a plan for their play.'

　　　b. *Hahaoya-kara-sika* hanasi-o　si-te　oka-nakat-ta.
　　　　mother-from-only　　talk-Acc　do　　put-Neg-Past

　　　　'Only the mother talked.'

　　　c. *Ken-sika*　hanasi-o　si-te　oka-nakat-ta.
　　　　Ken-only　talk-Acc　do　　put-Neg-Past

　　　　'Only Ken talked.'

What is more, there is an asymmetry in NPI licensing of temporal and locative adjuncts, as shown in (48).

(48)　a. *John-wa　*kinoo-made-sika*　　hataraka-nai-de　oi-ta.
　　　　John-Top　yesterday-until-only　work-Neg　　　put-Past

　　　　'John worked only until yesterday.'

　　　b. Zutto　　　John-wa　*koko-de-sika*　hataraka-nai-de　oi-ta.
　　　　all.the.time John-Top　here-in-only　work-Neg　　　　put-Past

　　　　'John worked only here all the time.'

This distribution observed in (48) falls into place, if the temporal adjunct appears in the matrix clause, which is outside the scope of *nai* embedded under *iru*, but the locative adjunct does not.

The data indicate that in the control construction with the aspectual verb *oku*, all types of subjects appear in the matrix clause.

3.3.　Summary

The overall patterns of subject raising that we have observed for the raising construction headed by the aspectual verb *iru* 'be' are shown in (49).

(49)   a.   [$_{TP}$ SUBJ-NOM [$_{TP}$ ~~SUBJ-NOM~~ [$_{vP}$ ~~SUBJ-NOM~~ (OBJ-ACC) V-v]]]

       b.   [$_{TP}$ SUBJ-DAT [$_{TP}$ ~~SUBJ-NOM~~ [$_{vP}$ ~~SUBJ-DAT~~ OBJ-NOM V-v]]]

       c.   [$_{TP}$ [$_{TP}$ [$_{vP}$ SUBJ-INSTR/-ABL   V-v]]] (No Raising)

It should be apparent from (49) that the presence or absence of subject raising is correlated with the question of whether T has the case feature [+Nom], i.e. wherever T enters into a case relation with a nominative argument, i.e. T values the case feature of a nominative argument, subject raising is instantiated.

If the EPP is tied to nominative case, subject raising is instantiated in the nominative-subject construction as well as in the dative-subject construction, due to the fact that they need to contain a nominative argument, by virtue of the nominative-case constraint. The oblique subject constructions offer cases where subject raising may not be applicable, because the nominative case on the subjects can be replaced by oblique markers without affecting their acceptability if certain semantic criteria are met. (In the instrumental-subject construction, the subject needs to represent a plural agent, and in the ablative-subject construction, the subject needs to be construed as a source.)

In essence, the EPP requirement is not always imposed on T in Japanese; in ordinary clauses, subjects undergo A-movement to Spec-TP, because they are associated with the T that values the case feature on a nominative argument. Oblique subjects are not raised to Spec-TP when it is possible for the clause to be exempt from the nominative-case constraint via semantic-case replacement. Nevertheless, when nominative arguments are included elsewhere in the clauses, even the oblique subjects undergo raising to Spec-TP. The fact points to the conclusion that the EPP requirement on T is motivated when tense bears the case feature [+Nom] to value the case feature of a nominative argument. Since the EPP requirement is imposed on the T-head that values case features, the EPP should be tied to case (rather than agreement).

4.   What Derives the Nominative-Case Constraint?

In the oblique-subject constructions, subject raising is not implemented if the clauses do not comprise any nominative argument. As noted earlier, Japanese has the nominative-case constraint, and the oblique-subject constructions, where semantic-case replacement takes place, constitute exceptions to this constraint (Inoue 1998, 2007).[18] This might give us the impression that semantic-case replacement always provides a way of voiding the nominative-case constraint. This is not the case, however. In (50a), the nominative case on the locative argument can be replaced by *kara* without affecting acceptability, but in (50b), the same

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[18]   Inoue (1998, 2007) observes that when subjects are marked with oblique case, the clause is exempt from the nominative-case constraint, but does not provide any explanation as to why this constraint does not apply in this case.

replacement results in unacceptability.

(50) a. Kodomo-ga kono heya-ga/-kara   de-rare-nakat-ta.
       child-Nom   this   room-Nom/-Abl   leave-can-Neg-Past

   'The child was unable to leave this room.'

   b. Kodomo-ni kono heya-ga/*-kara   de-rare-nakat-ta.
      child-Dat   this   room-Nom/-Abl   leave-Past

   'The child was unable to leave this room.'

The sole difference between the two examples lies in the fact that whereas the subject is marked with nominative case in (50a), it is marked with dative case in (50b). The grammatical status of (50b) is comparable to that found in (51).

(51) Kodomo-ni kono heya-ga/*-o   de-rare-nakat-ta.
     child-Dat   this   room-Nom/-Acc leave-can-Neg-Past

   'The child was unable to leave this room.'

Since the oblique *kara* cannot replace the nominative case in (50b), it should be apparent that owing to the nominative-case constraint, the dative-subject construction (50b) is ruled out as ungrammatical.

The data show that clauses with no nominative argument derived by replacing nominative case with a semantic case are not always legitimate (due to the nominative-case constraint). If this is the case, we are faced with a paradox: the nominative-case constraint does not apply when semantic-case replacement takes place on subjects, as demonstrated in section 3, but in (50b) the same semantic-case replacement cannot void the nominative-case constraint. Why is this the case?

The difference emerges depending on the property of tense. The crucial fact is that (50b) falls into a type of dative-subject construction. Since the dative case on the subject is licensed by T when the predicate (or to be more precise, the tense associated with the predicate) is stative (Kuno 1973), I suggest that the nominative-case constraint is enforced when T bears an uninterpretable case feature, but it is not when T does not carry any case feature to be used for deleting case features on arguments. Note that in Japanese, finite T does not always value the case feature on a nominative argument, which suggests that T can optionally bear the case feature [+Nom]. In the light of this fact, I propose that Japanese makes two kinds of T's available, which are distinguished according to whether or not they carry uninterpretable case features, and that when T bears case features, it always includes the most prominent case feature of [+Nom], which I claim is responsible for the nominative-case constraint.

An ordinary type of T is equipped with case features, and in the nominative-subject

construction, T comprises [+Nom], as in $T_{[+NOM]}$.[19] In the nominative-subject construction, the case feature on T is deleted via agreement with the case feature on the nominative subject. If there is an object, its case feature as well as the case feature on v is deleted by agreement. (If all the uninterpretable features are deleted, the derivation converges.)

(52)   a.   [SUBJ~~[+NOM]~~   OBJ~~[+ACC]~~   v~~[+ACC]~~ T ~~[+NOM]~~]

       b.   [SUBJ ABL/INSTR   OBJ~~[+ACC]~~   v~~[+ACC]~~ Tϕ]

The nominative-case constraint applies to (52a), for T carries a case feature. Thus, the derivation does not converge if the clause does not have a nominative argument. On the other hand, the oblique markers *de* and *kara* do not require an external licenser, and if the nominative case on the subject is replaced by an oblique marker, T can appear without any case feature, as in (52b). In (52b), the derivation is legitimate, because the case feature on v is deleted in agreement with the case feature on the accusative object. Since T does not include any case features that need to be deleted in the derivation, (52b) is exempt from the nominative-case constraint, and hence the sentence is acceptable even if it does not comprise any nominative argument.

The nominative-case constraint cannot be voided in the dative-subject construction, where the subject is marked with dative case. The fact naturally falls out if tense is responsible for case licensing of dative case, as well as nominative case in the dative-subject construction, i.e. T is furnished with [+Dat] alongside [+Nom], as in $T_{[+DAT], [+NOM]}$. In (53a), the dative case feature is deleted in agreement with the case feature on the dative subject, and the nominative case feature can be deleted by the case feature on the nominative object.

(53)   a.   [SUBJ ~~[+DAT]~~   OBJ~~[+NOM]~~   v   T ~~[+DAT]~~ ~~[+NOM]~~]

       b. *[SUBJ~~[+DAT]~~   OBJ~~[+ACC]~~   v~~[+ACC]~~ T ~~[+DAT]~~ [+NOM]]

       c. *[SUBJ~~[+DAT]~~   OBJ-ABL   v   T ~~[+DAT]~~ [+NOM]]

Note, however, that even if nominative case on an object is replaced by an oblique marker, as in (53c), T needs to bear the case feature [+Dat] to license the dative subject, which means that T must participate in a case-licensing relation with an argument. In this case, [+Nom] appears on T, which needs to be deleted for the derivation to converge. In (53b-c), the derivation is not legitimate, because [+Nom] on T remains undeleted in the absence of a nominative argument. When T bears [+Nom], a violation of the nominative-case constraint is

[19] Pesetsky and Torrego (2001) suggests nominative case should be an unvalued tense feature on D, so that it is deleted in association with tense. In Chomsky (2000, 2001), manifestation of structural Case depends on the probe, and T values the case feature on an argument as nominative, and v as accusative, etc. But the Japanese facts illustrate that tense does not necessarily value the case feature of a nominative argument. Thus, the present analysis assumes that a case feature contained in the probe determines the case value of an argument, and that T and v contain [+Nom] and [+Acc], respectively.

incurred if nominative case is replaced by accusative case or the ablative *kara*. Thus, sentences where T contains a case feature cannot be well-formed unless they include nominative arguments.

Incidentally, if the dative case is replaced by *kara* in the dative-subject construction, the resulting clause does not result in unacceptability.

(54) Kodomo-ni/-kara kono heya-ga mie-nakat-ta.
child-Dat/-Abl this room-Nom see-Neg-Past

'The child was unable to see this room.'

In (54), when the dative case is replaced by the ablative *kara*, T comprising [+Nom] (but not [+Dat]) is merged. In this case, the sentence is not excluded as unacceptable, due to the presence of a nominative argument.

The present analysis taking tense to be responsible for the nominative-case constraint crucially draws on the assumption that the case feature of the dative subject is valued by T (Chomsky 2001, 2004, 2008). It is sometimes assumed (see e.g. Ura 1999), however, that dative case is construed as inherent case, which does not require the presence of an external licenser. Nevertheless, there is good reason to believe that the case feature on the dative subject is valued by T. To make this point, first consider (55).

(55) a. [PRO_arb kodomo-o home-ru] koto-wa ii koto da.
child-Acc praise-Pres fact-Top good thing Cop

'It is a good thing [PRO_arb to praise children].'

b. *[John-ga PRO_arb home-ru] koko-wa ii koto da.
John-Nom praise-Pres fact-Top good thing Cop

(Lit.) 'It is a good thing [for John to praise PRO_arb].'

The examples in (55) show that with a non-stative predicate, its nominative subject, but not an accusative object, can be turned into PRO_arb. In contrast, in the dative-subject construction, it is the dative rather than the nominative argument that can serve as PRO_arb, as seen in (56).

(56) a. [PRO_arb kodomo-ga home-rare-ru] koto-wa ii koto da.
child-Nom praise-can-Pres fact-Top good thing Cop

'It is a good thing [PRO_arb to be able to praise children].'

b. *[John-ni PRO_arb home-rare-ru] koko-wa ii koto da.
John-Dat praise-can-Pres fact-Top good thing Cop

(Lit.) 'It is a good thing [for John to be able to praise PRO_arb].'

According to Chomsky and Lasnik (1993), PRO is licensed by receiving null case from

infinitival T. In Japanese, a verb in the present form can be associated with infinitival T, and thus, (55a) and (56a) can have PRO$_{arb}$ interpretation (see Kuroda 1983).[20] Given that PRO$_{arb}$ occurs by replacing an argument appearing in subject position whose case feature is valued by finite T, it is reasonable to say that T is the case licenser of subjects in the dative-subject construction.[21]

There are cases where a dative argument is valued by the verb, rather than T. When a dative argument does not enter into an agreement relation with T, nominative case can be replaced by an oblique marker without affecting acceptability, as exemplified in (57).

(57) Haha-ga/-kara   kodomo-ni   hon-o   atae-ta.
       mother-Nom/-Abl child-Dat   book-Acc give-Past

       'The mother gave her child a book.'

The ditransitive predicate *ataeru* 'give' allows the nominative case marking of the source subject to be replaced by *kara* even in the presence of the dative argument. When the subject receives the oblique *kara*, no nominative argument shows up in the clause, but still, the sentence is acceptable. This is obviously due to the fact that the dative case of the indirect object in (57) is not valued by T. Empirical evidence in support of this view can be adduced from (58).

(58) a. Hon-ga   kodomo-ni   atae-rare-ta.
          book-Nom   child-Nom   give-Pass-Past

          'The book was given to the child.'

      b. Kodomo-ga   hon-o   atae-rare-ta.
          child-Nom   book-Acc   give-Pass-Past

          'The child was given the book.'

The examples in (58) show that the dative object of the verb *ataeru* can be promoted to a passive subject via (direct) passivization, in the same way as the accusative object whose case feature is valued by v.[22] This fact suggests that the case feature of the dative argument

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[20] Needless to say, no PRO$_{arb}$ interpretation is available if the verb appears in the past form.

[21] The occurrence of PRO is restricted to a subject position, so that the nominative argument cannot be replaced by PRO even though T values its case feature.

[22] In this case, since the case feature of the dative argument is not valued by T, this argument cannot be turned into PRO$_{arb}$, as shown in (i).

(i) *[Hahaoya-ga PRO$_{arb}$ hon-o   atae-ru] koto-wa ii   koto da.
     mother-Nom   book-Acc give-Pres fact-Top good thing Cop

     'It is a good thing [for mothers to give books to PRO$_{arb}$].'

selected by the verb *ageru* is not valued by T. Thus, when the nominative case on the subject is replaced by *kara*, the T-head without a case feature can be merged. In this case, the nominative-case constraint does not apply to (57).

In a nutshell, the nominative-case constraint emerges from the property of tense. In unmarked cases, T bears [+Nom], and the clause needs at least one nominative argument, which carries a case feature that can delete [+Nom]. The derivation is legitimate when [+Nom] is successfully deleted in agreement with the case feature of a nominative argument. On the other hand, if nominative case on an argument is replaced by a semantic marker, T can appear without [+Nom]. In such a case, the nominative-case constraint is not implemented, as T does not contain [+Nom], and the sentence can be legitimate even without a nominative argument. In the dative-subject construction, T contains [+Dat] to be deleted in agreement with the case feature of the dative subject. Since this kind of T must carry [+Nom] as well, the nominative-case constraint cannot be rendered inapplicable, even if nominative case on a non-subject argument is replaced by an oblique marker.

5.   Conclusion

In this paper, on the basis of the aspectual construction where a negator precedes the aspectual verb *iru*, it has been shown that nominative and dative subjects undergo raising to Spec-TP, while obliquely-marked subjects remain in the base position without subject raising (provided no nominative arguments are included in the clause). In Japanese, subject raising to Spec-TP is motivated when tense has an uninterpretable case feature [+Nom] to value the case feature on a nominative argument. Japanese makes two kinds of T available—one with an uninterpretable case feature, and the other without. When tense does not carry any case features, the EPP requirement is suspended, because the T that does not require a specifier can be merged to the clause. This analysis provides a ready account for the fact that even obliquely-marked subjects undergo raising to Spec-TP, in cases where T carries a case feature to value the case feature of a nominative argument. The overall conclusion is that in Japanese, when T has the case feature [+Nom], it carries [+EPP] as well, which suggests that the EPP is tied to case rather than agreement (in Japanese).

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ON THE UNAVAILABILITY OF NP-ELLIPSIS
WITH JAPANESE RELATIVE CLAUSES *

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1. Introduction

Well attested since Jackendoff (1971), English permits so-called 'N'-ellipsis', reformulated as 'NP-ellipsis' under the DP hypothesis (Abney 1987). Accordingly, not only (1a) but also (1b) is grammatical.

(1) a. Jiro criticized Taro's attitude, but Yoshio criticized Hanako's attitude.

   b. Jiro criticized Taro's attitude, but Yoshio criticized Hanako's.

However, an NP cannot always be elided in DP. For example, (2b) is ungrammatical, in contrast to (2a):

(2) a. Jiroo criticized the attitude, but Yoshio criticized the attitude.

   b. *Jiroo criticized the attitude, but Yoshio criticized the.

Lobeck (1990) as well as Saito and Murasugi (1990) (henceforth S&M) argue that the contrast between (1b) and (2b) follows from which positions *Hanako's* and *the* occupy within the DP. The structure of the word sequence *Hanako's attitude* in (1a) is as in (3):

(3) [_DP_ Hanako's [_NP_ attitude]]

Here, *Hanako's* occupies DP SPEC. This structure contrasts with that of the DP *the attitude*, where *the* is located in D, not in DP SPEC, as shown in (4):

(4) [_DP_ [_D'_ the [_NP_ attitude]]]

The fact that (2b), in contrast to (1b), is ungrammatical, leads to the generalization that only when DP SPEC is filled, can NP be elided.

S&M show that this "DP SPEC" requirement on NP-ellipsis is also operative in Japanese; consider that in (5), parallel to (1b), the NP *taido* 'attitude' can be elided:[1]

(5)　　　Jiroo-wa　[DP Taroo-no　[NP taido]]-o　　　hihanshita ga,　Yoshio-wa
　　　　　　-TOP　　　　　-GEN　attitude-ACC　criticized　though　　　-TOP
　　　[DP Hanako-no　([NP taido])]-o　　　hihanshita.
　　　　　　-GEN　　attitude-ACC　criticized

　　　'Jiro criticized Taro's attitude, but Yoshio criticized Hanako's.'

According to S&M, the NP *taido* can be deleted because *Hanako-no* occupies DP SPEC, parallel to (1a).

This DP SPEC requirement leads to the prediction that NP-ellipsis should not be permitted if DP SPEC is not filled. This expectation is fulfilled. Given the assumption that relative clauses are adjoined to NP, thus not in DP SPEC, Saito, Lin and Murasugi (2008) (henceforth SL&M) propose that Japanese relative clauses cannot trigger NP-ellipsis, as exemplified in (6):

(6)　　　[[Taroo-ga　　kinoo　　atta] hito]-wa　　yasashii ga,　**[[Hanako-ga**
　　　　　　-NOM　yesterday saw　person-TOP　kind　　though　　　**-NOM**
　　　kinoo　　atta] *(hito)]-wa　　kowai.
　　　yesterday saw　　person-TOP　scary

　　　'The person Taro saw yesterday is kind, but the person Hanako saw yesterday is
　　　scary.'　　　　　　　　　　　　　　　　　　　　　　　　　(SL&M 2008: 263)

In this example, the NP *hito* 'person' cannot be elided because the relative clause is not in DP SPEC. In essence, for S&M and SL&M, the contrast between (5) and (6) shows that only arguments can trigger NP-ellipsis: There is an argument/adjunct asymmetry with respect to the availability of NP-ellipsis.

However, following Abe (2006) and Kadowaki (2005), Takahashi (2011) claims that Japanese relative clauses do allow NP-ellipsis. For instance, in (7a) *syujyutsu* 'operation' can be absent in the second conjunct, as shown in (7b):[2]

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[1]　Abbreviations used in this paper are as follows:
ACC = accusative, CL = classifier, DIST = distributive affix, GEN = genitive, NOM = nominative, PASS = passive, RC = relative clause, TOP = topic.

[2]　Mihara's (1994: 212) example, given in (i), which involves the abstract noun *syujyutsu* 'operation', shows that Kamio's (1983) condition that the pronominal *no* can only replace concrete nouns is too restrictive:

(7)   a. [[kinoo   okonawareta] syujyutsu]-wa   kantan datta ga,   [[kyoo
          yesterday was done   operation-TOP simple was   though   today
      yoteisareteiru] syujyutsu]-wa   kanari muzukashii.
      is planned   operation-TOP very   difficult

      '(lit.) The operation that was done yesterday was simple, but the operation that is
      planned today is very difficult.'

   b. [[kinoo   okonawareta] syujyutsu]-wa   kantan datta ga,   [[kyoo
          yesterday was done   operation-TOP simple was   though   today
      yoteisareteiru]-no]-wa   kanari muzukashii.
      is planned-NO-TOP   very   difficult

Likewise, *kankei* 'relation' can be missing in the second conjunct, as shown in (8b):[3]

(i) [kinoo-no   syujyutsu]-wa   kantan datta ga,   [kyoo-no]-wa   muzukashisoo da.
     yesterday-GEN operation-TOP   simple was   though   today-one-TOP difficult-seem is

     '(lit.) Yesterday's operation was simple, but today's one seems difficult.'

See Section 6 for relevant discussion on Kamio's (1983) condition on the pronominal *no*.

[3]   Takahashi's (2011: 139) original example with *kankei* 'relation' is given in (i):

(i) [[[aisatsu-suru]-dake]-no   kankei]-wa   yoi   ga,   [[[okane-o
        greeting-do-only-GEN   relation-TOP good though   money-ACC
     kashikari-suru]-dake]-no]-wa   yokunai.
     borrowing・lending-do-only-NO-TOP not good

     '(lit.) The relation in which they only greet is good, but the relation in which they only borrow
     and lend money is not good.'

In (i), the relative clause is accompanied by *dake* 'only.' In order to avoid any potential intervening
factors with *dake*, this paper deals with examples without the element under question. Notice that if
dake is omitted in (i), as shown in (ii), the meaning of the second conjunct changes; it means that
borrowing and lending money is not good.

(ii) [[aisatsu-suru] kankei]-wa   yoi   ga,   [[okane-o   kashikari-suru]-no]-wa
         greeting-do   relation-TOP good though   money-ACC lending・borrowing-do-NO-TOP
      yokunai.
      not good

      'The relation that they greet is good, but to lead and borrow money is not good.'

(8)　　a.　[[amerika-ga　　　nihon-to　　kizuita] kankei]-wa　　ryookoo da ga,
　　　　　　America-NOM Japan-with built　　relation-TOP good　　　is though
　　　　　　[[*pro* tyuugoku-to　　kizukoo-to shiteiru] kankei]-wa　　saki-ga
　　　　　　　　China-with　　　trying to build　　　relation-TOP future-NOM
　　　　　futoomei da.
　　　　　unclear　　is

　　　　　'The relation that the United States built with Japan has been good, but the
　　　　　relation that she is trying to build with China is unclear about its future.'

　　　b.　?[[amerika-ga　　　nihon-to　　kizuita] kankei]-wa　　ryookoo da ga,
　　　　　　America-NOM Japan-with built　　relation-TOP good　　　is though
　　　　　　[[*pro* tyuugoku-to　　kizukoo-to-shiteiru]-no]-wa　　saki-ga
　　　　　　　　China-with　　　trying to build-NO-TOP　　　future-NOM
　　　　　futoomei　　da.
　　　　　not obvious　is

On the surface, these examples appear to show that Japanese relative clauses can trigger NP-ellipsis, contrary to SL&M's claim. Accordingly, the grammatical contrast between (6) on the one hand, and (7b) and (8b) on the other, clearly calls for further research examining the nature of relative clauses in Japanese. This paper, as a consequence, investigates whether Japanese relative clauses allow NP-ellipsis. In addition, there appears to be one difference between the former example and the latter examples. Only in (7b) and (8b), the relative clauses are accompanied by *no*. These two issues are clearly interrelated, and this paper addresses the status of the *no* attached to a relative clause in studying the availability of NP-ellipsis with a relative clause.

The paper is organized as follows: following this introduction, Section 2 clarifies the two questions to be raised in this paper; (1) whether Japanese permits NP-ellipsis triggered by relative clauses, and (2) whether the *no* attached to a relative clause, as in (7b) and (8b), is the Genitive Case marker or the pronominal *no*. Section 3 summarizes SL&M's (2008) and Takahashi's (2011) mechanisms of NP-ellipsis, resulting in different answers to these two questions. SL&M deny the existence of the NP-ellipsis in question and *no* is the pronominal *no*. Takahashi, on the other hand, argues for such an NP-ellipsis, and *no* is the Genitive Case marker. In Section 4 to Section 6, we turn to provide three arguments for SL&M's stance that Japanese relative clauses cannot trigger NP-ellipsis and show that what appears to be an instance of NP-ellipsis, in fact, involves the pronominal *no*. Section 4 shows that split and non-linguistic antecedents are acceptable in cases where NP-ellipsis with a relative clause appears to have taken place. This section also shows that sloppy interpretation is unavailable in some cases where a relative clause appears to have triggered NP-ellipsis in Japanese, while its Chinese counterpart does allow sloppy interpretation in the same context. The fact that Chinese, but not Japanese, relative clauses easily yield sloppy interpretation is naturally accommodated under the hypothesis made by SL&M, and further supported by Miyamoto (2010), that Chinese relative clauses, but not their Japanese counterparts, make use of

Kaynean (1994) relative clause formation. Section 5 discusses the nominal-internal distributive interpretation of numeral quantifiers (NQs) with the distributive affix *zutsu* (Miyamoto 2009). Miyamoto argues that NQs with *zutsu* form a relative clause under the nominal-internal distributive reading. Miyamoto's proposal then enables us to use the availability of nominal-internal distributive interpretation as a test to see whether an NQ+*zutsu* behaves as a relative clause. We show that there is a case where NP-ellipsis by the relative clause formed by an NQ with *zutsu* would incorrectly create a configuration that should permit the reading in question. This over-generation is shown not to arise if NP-ellipsis is not available with Japanese relative clauses. Section 6 discusses Kamio's (1983) claim that abstract nouns cannot be replaced by the pronominal *no*. It will be concluded that in examples such as (7b) and (8b), which appear to involve NP-ellipsis, the possibility of the pronominal *no* is not fully excluded. Thereby, we maintain SL&M's proposal on NP-ellipsis based on Kamio's condition. Finally, Section 7 contains concluding remarks.

2.   Where to Start: Murasugi (1991)

As highlighted in Section 1, we believe that the examination of the status of the *no* attached to a relative clause, as boldfaced in (9), provides an indication of whether a relative clause can trigger NP-ellipsis:

(9)   [[kinoo   okonawareta] syujyutsu]-wa   kantan datta ga,   [[kyoo
           yesterday was done   operation-TOP simple was   though   today
         yoteisareteiru]**-no**]-wa   kanari muzukashii.
         is planned-NO-TOP   very   difficult

> 'The operation that was done yesterday was simple, but the operation that is planned today is very difficult.'

Here, four possibilities illustrated in (10a-c), are considered for the structure of the subject, [$_{RC}$ *kyoo yoteisareteiru*]-*no*, of the second conjunct:

(10)   a.   [[$_{CP}$[$_{TP}$… Relative Clause …]-no] *e*]   (no = C)

        b.   [[… Relative Clause …] no]   (no = Pronominal Relative Head)

        c.   [[… Relative Clause …]-no *e*]   (no = Genitive Case Marker)

            (i)   The gap *e* is created by NP-ellipsis.

            (ii) The gap *e* is the base-generated empty pronoun *pro*.

Among these four possibilities, Murasugi (1991) excludes the possibilities given in (10a) and (10cii).

Notice first that long-distance dependency is not possible in Japanese adjunct relative

clauses. In (11), *riyuu* 'reason' cannot refer to the reason why Taro swam.

(11) [NP [RC Hanako-ga   [[Taroo-ga   oyoida]-to] omotteiru] riyuu]
                    -NOM   -NOM swam-that   think   reason

   'the reason Hanako thinks that Taro swam'

This suggests that relative clauses cannot make use of Op-movement, making the intended long-distance interpretation available. Based, in part on this fact, Saito (1985) and later Murasugi (1991) argue that Japanese relative clauses are TP in category. Under the TP hypothesis of relative clauses, the fact that the interpretation under question is unavailable in (11) is naturally expected because there is no CP SPEC available for the Op to be raised to. Since Japanese relative clauses lack CP, there is also no C position the complementizer *no* can occupy. Thus, (10a) is not an available option.

   There is also a reason to cast doubt on (10cii) (Kadowaki 2005; Kitagawa and Ross 1982). It has been observed that the relative clause accompanied by *no* yields derogatory connotation (Kuroda 1976-1977). Notice, for example, that the second conjunct of (12) connotes that the person whom Hanako saw yesterday is not someone who deserves respect, and therefore, a conflict results between the derogatory connotation arising from the presence of *no* and the honorific form of the verb.

(12) #[[Taroo-ga   kinoo   atta] sensei]-wa   suugaku-o   oshieteirassyaru ga,
              -NOM yesterday saw teacher-TOP math-ACC   teach   though
      [[Hanako-ga   kinoo   atta]-**no**]-wa   rika-o   oshieteirassyaru.
              -NOM   yesterday saw-NO-TOP   science-ACC   teach

   'The person Taro saw yesterday teaches math, but ~~the person~~ Hanako saw yesterday teaches science.'

Importantly, the covert pronoun *pro* does not exhibit this derogatory connotation, as shown in (13):

(13)   Tanaka-sensei-ga   suugaku-o   oshieteirassyaru.
                    -NOM math-ACC   teach
      pro rika-mo   oshieteirassyaru.
           science-also teach

   'Prof. Tanaka teaches math. He also teaches science.'

The presence of the derogatory connotation in (12) thus leads to the exclusion of (10cii) as well.

   Murasugi's (1991) contribution to our argument is essential, that NP-ellipsis is not available with Japanese relative clauses, and allows us to assume that (10a) and (10cii) are not options available with Japanese relative clauses, leaving us with (10b) and (10ci).

SL&M's proposal leads to (10b) since NP-ellipsis is not available with adjuncts in general, thus with relative clauses. Alternatively, Takahashi (2011) argues for (10ci).

3.   Can Relative Clauses Trigger NP-ellipsis?

Having explored the foundations of this paper, we are now ready to illustrate SL&M's and Takahashi's, two competing proposals, and provide the theoretical basis for NP-ellipsis. This section focuses on cases where NP-ellipsis appears to be triggered by a relative clause.

3.1.   Saito, Lin and Murasugi (2008)

Based on the comparative study of Chinese and Japanese relative clauses, Simpson (2002) and SL&M claim that Chinese relative clauses are of Kaynean (1994) type. The essence of their proposal is illustrated by the example in (14).[2]

(14)   [[Wo zuotian   kanjian] de   nanhai] bi   **[[ni   zuotian   kanjian] de**
         I   yesterday see   DE boy   than you yesterday see   DE
        (nanhai)] geng youqian.
         boy   more rich

        'The boy I saw yesterday is richer than the boy you saw yesterday.'

                                                                                    (SL&M: 263)

Under the Simpson–SL&M proposal, the boldfaced DP has the structure given in (15).

(15)
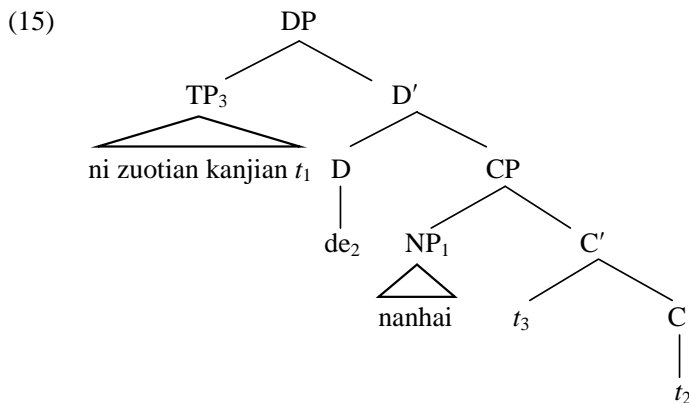
In (15), first, the relative head NP *nanhai* 'boy' is raised out of the relative clause TP to CP SPEC, as shown in (16a). Second, *de*, which is generated in C, is raised to D, which makes the SPEC's of DP and CP "equidistant" from the CP complement position (Lin, Murasugi, and Saito 2001).[3] The head-movement in point is illustrated in (16b). Finally, the relative clause TP is raised to DP SPEC, as shown in (16c).

(16)   a. $[_{DP} [_{CP}$**$[_{NP}$ nanhai$]_1[_{C'}[_{TP}$** ni zuotian kanjian **t_1**$]$ de$]]]$

b. $[_{DP}\ [_{D'}\ \textbf{de}_2\ [_{CP}[_{NP}\text{nanhai}]_1[_{C'}\ [_{TP}\text{ni zuotian kanjian}\ t_1]\ \textbf{\textit{t}}_2]]]]$

c. $[_{DP}\textbf{[}_{\textbf{TP}}\ \textbf{ni zuotian kanjian}\ \textbf{\textit{t}}_1\textbf{]}_{\textbf{3}}\ [_{D'}\text{de}_2\ [_{CP}\ [_{NP}\text{nanhai}]_1[_{C'}\ \textbf{\textit{t}}_3\ t_2]]]]$

Notice that Chinese relative clauses can trigger NP-ellipsis (see also Aoun and Li 2003; Huang, Li, and Li 2009). For example, the boldfaced NP *nanhai* 'boy' can be elided in (14). Under this Kaynean approach to Chinese relative clauses, the NP-ellipsis in question does not pose any problem for the argument/adjunct asymmetry introduced in Section 1, since TP is in fact a complement of C in (15).

SL&M argue that Japanese relative clauses, on the other hand, are base-generated in an NP-adjoined position, as illustrated in (17):[4]

(17)
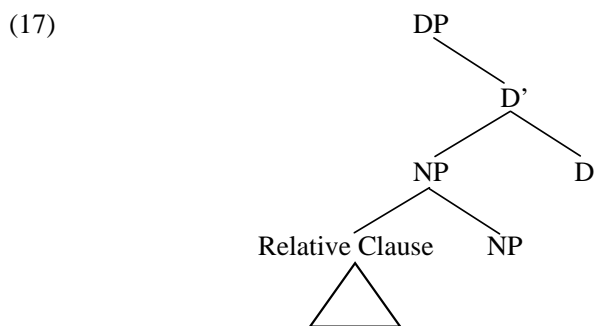
Accordingly, an NP-adjoined relative clause cannot move to DP SPEC due to the prohibition against A'-to-A movement (Chomsky 1973; May 1979; Fukui 1993, among others). Thus, Japanese relative clauses cannot satisfy the DP SPEC requirement. As a result, NP-ellipsis is not available with relative clauses in Japanese, as shown in (6), repeated here as (18):

(18) [[Taroo-ga   kinoo   atta] hito]-wa   yasashii ga,   **[[Hanako-ga**
           -NOM yesterday saw person-TOP kind   though   -NOM
      kinoo   atta] *(hito)]-wa   kowai.
      yesterday saw   person-TOP scary

   'The person Taro saw yesterday is kind, but the person Hanako saw yesterday is
   scary.'   (SL&M 2008: 263)

If SL&M's proposal is accurate, the remaining task is to account for the grammaticality of examples such as (7b), repeated here as (19), which appear to support the hypothesis that relative clauses do license NP-ellipsis in Japanese:

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4 See also Murasugi (2000a, b).

(19) [[kinoo   okonawareta] syujyutsu]-wa kantan datta ga,   [[kyoo
       yesterday was done   operation-TOP simple was though today
yoteisareteiru]**-no**]-wa   kanari muzukashii.
is planned-NO-TOP   very   difficult

  '(lit.) The operation that was done yesterday was simple, but ~~the operation~~ that is planned today is very difficult.'

Between the two remaining possibilities; (10b) and (10ci), highlighted in Section 2, we are led to choose the former under SL&M; no NP-ellipsis is possible with Japanese relative clauses, and thus, the *no* attached to a relative clause must be the pronominal *no*.

Notice that the pronominal *no* requires the NP-modifier, as shown in the contrast between (20a, b):[5]

(20) a. Taroo-ga   [NP [AP takai]   no]-o   katta.
              -NOM   expensive one-ACC bought

        'Taro bought an expensive one.'

      b. *Taroo-ga   [NP no]-o   katta.
              -NOM   one-ACC bought

        '(lit.) Taro bought an one.'

If Japanese relative clauses are adjoined to NP, it comes as no surprise that they can also license the pronominal *no*. Thus, the licensing of the pronominal *no* is also naturally accommodated under SL&M's proposal.

3.2. Takahashi (2011)

Takahashi (2011) argues that Japanese relative clauses do, however, license NP-ellipsis; examples of which are repeated here as (21a, b):

(21) a. [[kinoo   okonawareta] syujyutsu]-wa kantan datta ga,   [[kyoo
             yesterday was done   operation-TOP simple was though today
        yoteisareteiru]-no]-wa   kanari muzukashii.
        is planned-NO-TOP   very   difficult

        '(lit.) The operation that was done yesterday was simple, but ~~the operation~~ that is planned today is very difficult.'

---

[5] See Murasugi (1991) for relevant discussion.

b. ?[[amerika-ga   nihon-to   kizuita] kankei]-wa   ryookoo da ga,
  America-NOM Japan-with built   relation-TOP good   is though
[[*pro* tyuugoku-to   kizukoo-to-shiteiru]-no]-wa   saki-ga
   China-with   trying to build-NO-TOP   future-NOM
futoomei   da.
not obvious is

'The relation that the United States built with Japan has been good, but ~~the relation~~ that she is trying to build with China is unclear about its future.'

As indicated with the brackets, *syujyutsu* 'operation' and *kankei* 'relation' can be absent. Here, in order to exclude the possibility in (10b), Takahashi, following SL&M, uses the abstract nouns in his examples, assuming Kamio's (1983) condition that abstract nouns cannot be replaced by the pronominal *no*.[6] Accordingly, for Takahashi, (21a, b), having the abstract nouns as the target of the ellipsis operation, necessarily involve NP-ellipsis.

Takahashi accounts for the availability of NP-ellipsis with Japanese relative clauses, based on three assumptions:

(22)   a.   A head with a Case-feature is a phase head.

      b.   Only complements of phase heads can undergo ellipsis.

      c.   Phase heads require edges when phase head complements undergo ellipsis.

                                       (Takahashi 2011: 158)

How Takahashi's proposal works is illustrated in (23):

(23)   KP = phase

       Specifiers/Adjuncts   KP

                NP   K [CASE]
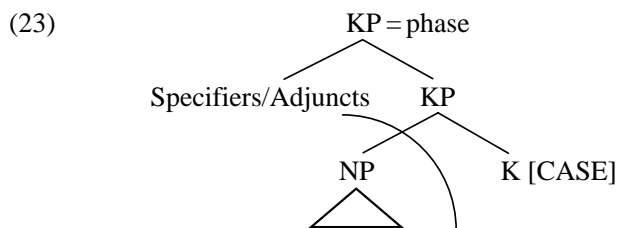
First, Takahashi assumes that Kase Phrase (KP) is the highest nominal projection headed by a Case marker with a Case feature, [CASE], which needs to be valued. Second, some element must be adjoined to KP when NP-ellipsis is intended. If these two conditions are met, the NP complement can be elided. For instance, in (24a), the word sequence *Hanako-no taido-o* is assumed to have the structure given in (24b):

---

6   But see Section 6.

(24) a. Jiroo-wa [Taroo-no [taido]]-o   hihanshita ga,   Yoshio-wa
       -TOP   -GEN attitude-ACC criticized   though   -TOP
     [Hanako-no   [$_{NP}$ ~~taido~~]]-o   hihanshita.
         -GEN   attitude-ACC   criticized

     'Jiro criticized Taro's attitude, but Yoshio criticized Hanako's.'

   b.
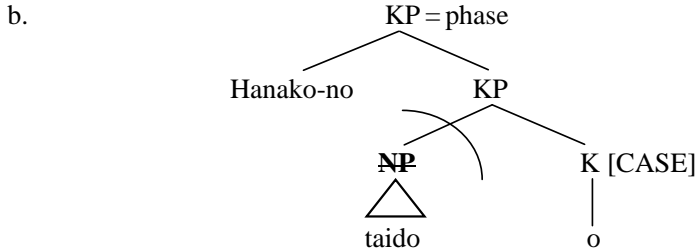
In (24b), the ACC Case marker projects KP with [CASE], and *Hanako-no* is adjoined to KP. As a result, the NP *taido* can be elided.[7]

    Importantly, Takahashi proposes that not only arguments but also adjuncts can act as a KP-adjoined element that licenses NP-ellipsis, and therefore, relative clauses should also license NP-ellipsis. According to Takahashi, this expectation is fulfilled, as already shown in (7b) and (8b). However, as the ungrammaticality of (25) shows, the prediction is not quite so straightforward:

(25) *[[Taroo-ga   kinoo   atta] hito]-wa   yasashii ga,
         -NOM yesterday saw person-TOP kind   though
    [[Hanako-ga   kinoo   atta] ~~hito~~]-wa   kowai.
         -NOM yesterday saw person-TOP scary

    'The person Taro saw yesterday is kind, but ~~the person~~ Hanako saw yesterday is scary.'

Notice the lack of an obvious difference between (24b) and (26) below:

(26)

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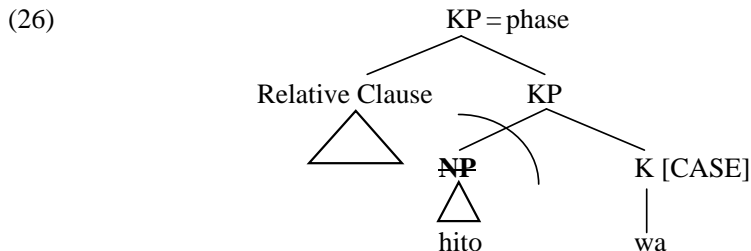
7   Takahashi (2011) also provides an alternative account for the availability of NP-ellipsis under the assumption that Genitive Case is structural. Although this alternative may have important implications for the framework he assumes, this revision is not crucial for the purpose of this paper.

Observing the ungrammaticality of (25), Takahashi proposes that relative clauses (when they are not followed by *no*) cannot license NP-ellipsis (Takahashi 2011: 188). In short, for Takahashi, (25) is ungrammatical not because Japanese relative clauses cannot trigger NP-ellipsis, but because the Genitive Case marker *no* is not attached to the relative clause. As expected, (25) drastically improves if *no* is attached to the relative clause, as shown in (27):

(27) [[Taroo-ga   kinoo   atta] hito]-wa   yasashii ga,
           -NOM yesterday saw person-TOP kind   though
      [[Hanako-ga   kinoo   atta]**-no**]-wa   kowai.
            -NOM yesterday saw-NO-TOP scary

    'The person Taro saw yesterday is kind, but ~~the person~~ Hanako saw yesterday is
    scary.'

Accordingly, Takahashi suggests a curious restriction on NP-ellipsis: KP-adjoined elements must bear Genitive Case 'only' when they license NP-ellipsis. A question naturally arises as to why Genitive Case is required when the NP is elided, and it is prohibited when the NP remains overt, as shown in (28).

(28) *[[Taroo-ga   kinoo   atta] hito]-wa   yasashii ga,
            -NOM yesterday saw person-TOP kind   though
      [[Hanako-ga   kinoo   atta]**-no** hito]-wa   kowai.
            -NOM yesterday saw-NO person-TOP scary

    'The person Taro saw yesterday is kind, but the person Hanako saw yesterday is
    scary.'

    Another curious condition Takahashi proposes is that when two or more elements which can be adjoined to KP, are present, the lower one can be adjoined to NP. For instance, in (29a), *A-san-no* 'Mr. A's' must be located within NP, as shown in (29b), so that it can be deleted with the rest of the material in NP.

(29) a. [Hanako-no A-san-no hihan]-wa   ii   ga, [Taroo-no ~~A-san-no~~
               -GEN Mr. A-GEN criticism-TOP good though   -GEN Mr. A-GEN
         ~~hihan~~]-wa   yoku-na-i.
         criticism-TOP   not good

    'Hanako's criticisms of Mr. A is good, but Taro's ~~criticisms of Mr. A~~ is not.'

                                     (Takahashi 2011: 161)

b.

```
              KP = phase
             /        \
     Hanako-no          KP
                      /    \
                   NP       K [CASE]
                  /   \        |
          Mr. A-no     NP      wa
                        △
                      hihan
```
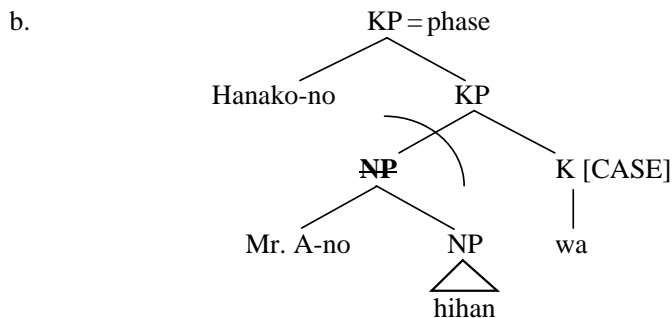
Under Takahashi's proposal, we are therefore left with another question of why such a condition holds.

3.3. Summary

SL&M propose that only arguments can trigger NP-ellipsis while Takahashi argues that not only arguments but also adjuncts license NP-ellipsis. Accordingly, the *no* attached to the relative clause receives different analyses; it must be the pronominal *no* under SL&M's proposal whereas it is the Genitive Case marker under Takahashi's proposal. In the next three sections, we present three arguments supporting SL&M's proposal that NP-ellipsis cannot be executed with a relative clause as its trigger.

4. Antecedents

In this section, we focus on how the antecedent is determined in cases where NP-ellipsis appears to have taken place. Specifically, we examine whether split and non-linguistic antecedents are acceptable and whether sloppy interpretation is available in the cases under question.

4.1. Split and Non-Linguistic Antecedents

The first argument in favor of SL&M's proposal comes from the availability of split and non-linguistic antecedents.[8] Notice that VP-ellipsis in English, for example, does not allow split antecedents, as shown in (30):

(30)   Taro can swim fast, and Hanako can run fast. *Jiro can [VP *e*], too.

---

[8]   The two tests that are used in this section are owed to Kadowaki (2005). Kadowaki's purpose was to show that Japanese NP-ellipsis in general makes use of the schematic structure given in (10cii), repeated here as (i):

(i)   [[RC …]-no *pro*]   (no = Genitive Case marker)

We, however, do not share his conclusion, and instead, assume with Murasugi (1991) that (10cii) is not tenable in Japanese NP-ellipsis. (see also Section 2)

The elided VP cannot mean that Jiro can both swim and run fast. By the same token, NP-ellipsis also does not allow split antecedents, as shown in (31):

(31)   Taro's book of physics was very expensive, and Hanako's book of chemistry was also very expensive. *Jiro's [_NP_ *e*] were both rather cheap, too.

The elided NP cannot be interpreted as Jiro's book of physics and his book of chemistry. These examples show that the unavailability of split antecedents is an indication that ellipsis takes place.

Now, if what appears to be Japanese NP-ellipsis with a relative clause is a genuine instance of NP-ellipsis, we predict that split antecedents are not acceptable. This prediction, however, is not borne out, as shown in (32):

(32)   [(sensei-ga   taihen oisogashii-node,) [[raisyuu-no   Tanaka-sensei-no
          Prof. -NOM   very   busy-because   next week-GEN   -Prof.-GEN
        kooen]-wa   ichi-ji-kan-o   yoteishiteiru]]. [sono ato-no
        lecture-TOP one-hour-period-ACC   has scheduled   that after-GEN
        kyoodoo kenkyuu-nikansuru   uchiawase]-mo   ichi-ji-kan-o   yoteishiteiru.
        joint   research- concerning meeting-also   one-hour-period-ACC   has scheduled

        ippoo,   [[Satoo-sensei-ga   ohikiuke-ni natta]**-no**]-wa
        on the other hand   -Prof.-NOM   accepted   -NO-TOP
        ni-ji-kan-zutsu-ga   yoteisareteiru.
        two-hour-period-DIST-NOM is scheduled

        '(lit.) Because Prof. Tanaka has been very busy, his lecture next week is scheduled to be (just) one hour long. The meeting concerning their joint research after that is also scheduled to be one hour long. On the other hand, ~~the lecture and the meeting concerning their joint research~~ that Prof. Sato has accepted to be responsible for are both scheduled to be two hour long.'

Importantly, the sentence concerning Prof. Sato contains the distributive affix *zutsu*, which requires a plural element to distribute over; accordingly, as given in the English translation, this sentence means that Prof. Sato is planning to give a two-hour lecture and a two-hour meeting regarding the joint research project. This example therefore shows that what appears to be a case with NP-ellipsis with a relative clause permits split antecedents. It is not clear how this fact can be accommodated under Takahashi's NP-ellipsis-based proposal. Notice that the parallelism requirement for ellipsis cannot be met in (32), and the entities under question must be identified contextually.

There are even cases where no linguistic antecedent is present, and the sentences remain grammatical, as exemplified in (33):

(33) (Context)
It was the day for a meeting to decide a topic for the joint research project. After the meeting, one student asked his friends:

[[Kita-san-ga   teianshita]-**no**]-wa   doo omotta. muzukashi-sugiru-yo-na.
     -Mr.-NOM proposed-NO-TOP   how thought difficult-too

'What did you think about ~~the topic~~ that Mr. Kita proposed? It's too difficult, isn't it?'

In (33), what Mr. Kita proposed is a possible topic for the joint research project. No obvious linguistic antecedent is present here, and the sentence is still fully acceptable. This example thus constitutes further support for the view that the interpretation of what appears to be NP-ellipsis triggered by a relative clause is context-dependent, and the antecedent does not have to be linguistically present.

In short, the fact that the availability of split and non-linguistic antecedents in examples with what appears to be NP-ellipsis triggered by a relative clause shows that independent of whether a genuine NP-ellipsis is available with Japanese relative clauses, the option of the pronominal *no*, that is, (10b) in Section 2, must be available.

4.2. Strict/sloppy Interpretation

The claim that the antecedent is determined contextually is also supported by the fact that there are cases where sloppy interpretation is difficult to obtain with the cases under question.

Notice first that typical NP-ellipsis examples are ambiguous between strict and sloppy interpretation, although one interpretation is favored over the other depending on context. For example, (34) is ambiguous between the two readings under question.

(34) [Taroo-no   [[jibun-no   otooto]-no   hihan]]-wa   ii   ga,
          -GEN   self-GEN   younger brother-GEN criticism-TOP good though
      [Jiroo-no   *e*]-wa   yoku-na-i.
          -GEN   -TOP   not good

'Taro's criticisms of his own younger brother is good, but Jiro's is not.'

In (34), the second conjunct can describe the situation in which Jiro also criticized Taro's younger brother; this is an instance of strict interpretation, but can also mean that Jiro also criticized his own younger brother, and represents sloppy interpretation.

The ambiguity in (34) is reminiscent of the strict/sloppy ambiguity that we observe in VP-deletion. For example, (35b), which follows (35a), is ambiguous between the same two types of interpretation:

(35)　　a.　Hanako criticized her idea.

　　　　b.　Kazuko did [VP *e*], too.

(35b) can mean that Kazuko also criticized Hanako's idea (strict reading). Alternatively, it can also refer to the situation that Kazuko also criticized her own idea (sloppy reading). Thus, the parallelism between (34) and (35b) constitutes evidence for the hypothesis that NP-ellipsis is involved in (34).

　　Provided that the presence of the sloppy interpretation indicates that ellipsis has taken place, we predict that if Japanese relative clauses can trigger NP-ellipsis, sloppy interpretation be present, parallel to (35b). With this prediction in mind, we are now ready to examine the availability of sloppy reading in cases of what appears to be NP-ellipsis triggered by a relative clause.

4.2.1. Japanese Relative Clauses

(36) is a case in point:[9]

---

[9]　(i) represents the case where a phrase containing *jibun* 'self' precedes a relative clause:

(i)　Taroo-wa [[[jibun-no　ani]-no　　　　　[[LI-ni　saitaku-sareta] ronbun]]-ga　ichiban　da]-to
　　　-TOP　　self-GEN　elder brother-GEN　　-by　was accepted　paper-NOM　best　　is-that
　　omotteiru.
　　think

　　'Taro thinks that his own elder brother's paper that was accepted by LI is the best.'

The reflexive necessarily refers to Taro here. Of our interest is which example in (ii) can follow (i) describing the situation in which Jiro also thinks that his own elder brother's paper in L(inguistic) I(nquiry) is the best. (iia, b) clearly allow this sloppy interpretation. (iic) is a case in point.

(ii)　a.　Jiroo-mo [[[jibun-no　ani]-no　　　　　[[LI-ni　saitaku-sareta] ronbun]]-ga
　　　　　　-also　　self-GEN　elder brother-GEN　　-by　was accepted　paper-NOM
　　　　ichiban da]-to　omotteiru.
　　　　best　　is-that　think

　　　　'Jiro also thinks that his own elder brother's paper that was accepted by LI is the best.'

　　b.　Jiroo-mo [[[jibun-no　ani]-no　　　　　[[LI-ni　saitaku-sareta]-no]]-ga
　　　　　　-also　　self-GEN　elder brother-GEN　　-by　was accepted-NO-NOM
　　　　ichiban da]-to　omotteiru.
　　　　best　　is-that　think

　　c.　Jiroo-mo [[[LI-ni saitaku-sareta]-no]-ga　　ichiban da]-to omotteiru.
　　　　　　-also　　　-by was accepted-NO-NOM　best　　is-that think

The interpretation that the native speakers of Japanese reported is that Jiro also thinks that someone's paper in LI is the best. The most salient interpretation is the strict interpretation. However, in the context in which Jiro believes his own elder brother the best linguist, (iic) could be about Jiro's own

elder brother's paper in LI. In other words, (iic) can be about the paper in LI written by someone salient in the given context. Also, (iiia, b) refer to Jiro's own elder brother's paper in JEAL whereas (iiic) is about the paper in JEAL written by someone under discussion.

(iii) a.　Jiroo-wa　[[[jibun-no　　ani]-no　　　　　　[[JEAL-ni　saitaku-sareta]　ronbun]]-ga
　　　　　　　-TOP　self-GEN　elder brother-GEN　　　　-by　was accepted　paper-NOM
　　　　　ichiban da]-to　omotteiru.
　　　　　best　　is-that　think

　　　　　'Jiro thinks that his own elder brother's paper that was accepted by JEAL is the best.'

　　b.　Jiroo-wa　[[[jibun-no　　ani]-no　　　　　　[[JEAL-ni　saitaku-sareta]-no]]-ga
　　　　　　　-TOP　self-GEN　elder brother-GEN　　　-by　was accepted-NO-NOM
　　　　　ichiban da]-to　omotteiru.
　　　　　best　　is-that　think

　　c.　Jiroo-wa　[[[JEAL-ni　saitaku-sareta]-no]-ga　　ichiban da]-to omotteiru.
　　　　　　　-TOP　　　　-by　was accepted-NO-NOM　best　　is-that　think

Suppose that (iva, b) were the structure of (iic) and (iiic). Then, under the hypothesis that Japanese relative clauses can trigger NP-ellipsis, we are forced to assume that these two examples must involve "deletion" of discontinuous elements:

(iv) a.　Jiroo-mo　[[~~jibun-no　　ani-no~~　　　　　　[[LI-ni　saitaku-sareta]-no ~~ronbun~~]]-ga
　　　　　　　-also　self-GEN　elder brother-GEN　　　-by　was accepted-NO　paper-NOM
　　　　　ichiban da]-to　omotteiru.
　　　　　best　　is-that　think

　　b.　Jiroo-wa　[[~~jibun-no　　ani-no~~　　　　　[[JEAL-ni　saitaku-sareta]-no ~~ronbun~~]]-ga
　　　　　　　-TOP　self-GEN　elder brother-GEN　　　　-by　was accepted-NO　paper-NOM
　　　　　ichiban da]-to　omotteiru.
　　　　　best　　is-that　think

Given the reasonable assumption that discontinuous elements cannot be the target of an ellipsis operation, (iva, b) cannot be the structure of (iic) and (iiic). Rather, we have to assume that the reflexive is not present in (iic) and (iiic), as shown in (va, b):

(v) a.　Jiroo-mo　[[[LI-ni saitaku-sareta]-no]-ga　　ichiban da]-to　omotteiru.
　　　　　　　-also　　　-by was accepted-NO-NOM　best　　is-that　think

　　b.　Jiroo-wa　[[[JEAL-ni saitaku-sareta]-no]-ga　　ichiban da]-to　omotteiru.
　　　　　　　-TOP　　　　-by was accepted-NO-NOM　best　　is-that　think

Accordingly, the NP *ronbun* may be deleted. If (va,b) are correct structures for (iic) and (iiic), it is not surprising that the paper in LI or JEAL could be written by someone salient in the context, consistent with the judgments of the subjects.

Under the SL&M's proposal, on the other hand, we assume that (iic) and (iiic) are instances of the pronominal *-no*. Consequently, the author of the paper in LI or JEAL must also be given contextually. Thus, The word sequence with *jibun* 'self' preceding a relative clause does not provide any evidence for either of the proposals.

(36)　　Taroo-wa　[[[LI-ni　saitaku-sareta]　[[jibun-no　ani]-no　　　　ronbun]]-ga
　　　　-TOP　　　-by was accepted　　self-GEN　elder brother-GEN　paper-NOM
　　　ichiban da]-to　omotteiru.
　　　best　　is-that　think

　　　'Taro thinks that his own elder brother's paper that was accepted by LI is the best.'

As a continuation to (36), (37a-c) and (38a-c) are all natural:

(37)　　a.　Jiroo-mo　[[[LI-ni　saitaku-sareta]　[[jibun-no　ani]-no　　　　ronbun]]-ga
　　　　　　　-also　　　-in was accepted　　self -GEN　elder brother-GEN　paper-NOM
　　　　ichiban da]-to　omotteiru.
　　　　best　　is-that　think

　　　　　'Jiro also thinks that his own elder brother's paper that was accepted by LI is the
　　　　　best.'

　　　b.　Jiroo-mo　[[[LI-ni　saitaku-sareta]　[[jibun-no　ani]-no]]-ga
　　　　　　　-also　　　-by was accepted　　self -GEN　elder brother-NO-NOM
　　　　ichiban da]-to　omotteiru.
　　　　best　　is-that　think

　　　c.　Jiroo-mo　[[[LI-ni　saitaku-sareta]-no]-ga　　ichiban da]-to　omotteiru.
　　　　　　　-also　　　-by was accepted-NO-NOM　best　　is-that　think

(38)　　a.　Jiroo-wa　[[[JEAL-ni　saitaku-sareta]　[[jibun-no　ani]-no
　　　　　　　-TOP　　　-by was accepted　　self-GEN　　elder brother-GEN
　　　　ronbun]]-ga　　ichiban da]-to　omotteiru.
　　　　paper-NOM　　best　　is-that　think

　　　　　'Jiro thinks that his own elder brother's paper that was accepted by JEAL is the
　　　　　best.'

　　　b.　Jiroo-wa　[[[JEAL-ni　saitaku-sareta]　[[jibun-no　ani]-no]]-ga
　　　　　　　-TOP　　　-by was accepted　　self-GEN　elder brother-NO-NOM
　　　　ichiban da]-to　omotteiru.
　　　　best　　is-that　think

　　　c.　Jiroo-wa　[[[JEAL-ni　saitaku-sareta]-no]-ga　　ichiban da]-to　omotteiru.
　　　　　　　-TOP　　　　-by was accepted-NO-NOM　best　　is-that　think

However, there is a difference between (37a, b) and (38a, b) on the one hand, and (37c) and (38c) on the other. The former only allow sloppy interpretation due to the presence of the reflexive *jibun*; Jiro refers to his own elder brother's paper, accepted by LI or JEAL. In contrast, according to the informants, the latter refer to someone's paper in LI or JEAL. The most likely interpretation as a continuation of (36) is that Jiro is also thinking about Taro's

elder brother's paper. Of significance is the fact that it is very difficult to understand these sentences as Jiro referring to his own elder brother's paper. That is, (37c) and (38c) do not allow sloppy interpretation as easily as the typical NP-ellipsis example in (34) does.

The fact that the sloppy interpretation is difficult to obtain in (37c) and (38c) is surprising under Takahashi's NP-ellipsis-based proposal. For example, Takahashi would assign the structure in (39) to the embedded subject of (38c):

(39)
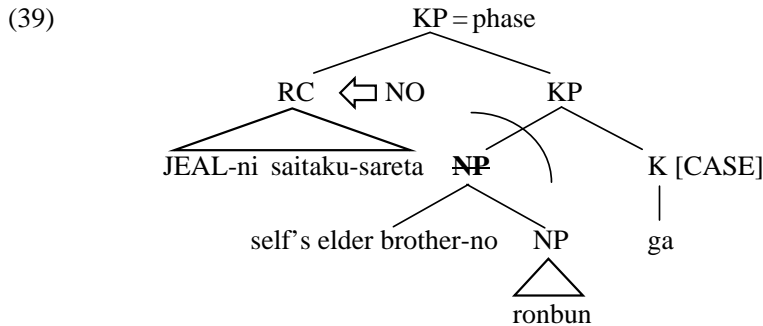
As highlighted in Section 3.2, Takahashi assumes that when NP-ellipsis is intended, KP-specifiers/adjuncts can be inside NP, being a target of the ellipsis operation. Thus, in (39), it is of no surprise that *jibun-no ani-no* 'self-GEN elder brother-GEN' can also be elided. Consequently, the unavailability of the sloppy reading in (37c) and (38c) constitutes evidence against his approach.

In contrast, under SL&M's proposal, (37c) and (38c) are instances of the pronominal *no*. Thus, the embedded subject of (37c), repeated here as (40a), for example, should have the structure given in (40b):

(40) a. Jiroo-mo [[[**LI-ni saitaku-sareta]-no**]-ga   ichiban da]-to   omotteiru.
          -also   -by was accepted-NO-NOM   best   is-that   think

   'Jiro also thinks that the one that was accepted by LI is the best.'

      b.
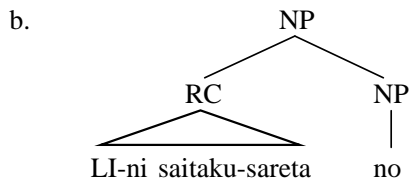
      c. the one that was accepted by LI

Given that (40b) is the Japanese counterpart of (40c), it comes as no surprise that the author of the paper must be identified from the context. In the above examples, (36) introduces Taro's elder brother's paper into the context, and accordingly, the most salient interpretation of the examples in (37c) and (38c) would be about Taro's elder brother's paper(s). At the

same time, if the right context is conceived of, the pseudo sloppy interpretation, which a few of our informants allowed, may also be anticipated.

It is worth noting at this point that the clear-cut sloppy interpretation is not available in (37c) and (38c) suggests that Japanese relative clauses do not make use of Kaynean relative-clause formation (see Section 3.1). In the following section, we would like to develop our interpretations by comparing the behavior of Japanese relative clauses with their Chinese counterparts. Of importance here is the proposal made by SL&M and supported by Miyamoto (2010) that Chinese relative clauses do trigger NP-ellipsis, making use of Kaynean head raising. If this is accurate, we predict that the Chinese counterparts of (37c) and (38c) permit the sloppy interpretation, in contrast to these Japanese examples.

4.2.2. Chinese Relative Clauses

Cases in point are given in (42a, b) and (43a, b), which follow (41): (42a) is the Chinese counterpart of (37a) whereas (42b) is the Chinese counterpart of (38a):[10]

(41)　Zhangsan renwei [[[bei　　LI jieshou de] ziji-de　　　gege-de　　　　　lunwun]
　　　　　　　　think　　　PASS LI accept　DE self-GEN elder brother-DE paper
　　　shi　zui-hao-de].
　　　be　best

　　　'Zhangsan thinks that his elder brother's paper which is accepted by LI is the best.'

(42)　a.　Lisi ye　renwei [[[bei　　LI jieshou de] ziji-de　　gege-de
　　　　　　too think　　　PASS LI accept　DE self-GEN elder brother-DE
　　　　lunwun] shi　zui-hao-de].
　　　　paper　　be　best

　　　　'Lisi also thinks that his elder brother's paper which is accepted by LI is the best.'

　　　b.　Lisi renwei [[[bei　　JEAL jieshou de] ziji-de　　　gege-de
　　　　　　think　　　PASS JEAL accept　DE self-GEN elder brother-DE
　　　　lunwun] shi　zui-hao-de].
　　　　paper　　be　best

　　　　'Lisi thinks that his elder brother's paper which is accepted by JEAL is the best.'

Here, all the examples contain the reflexive *ziji* 'self' without NP-ellipsis, accordingly, sloppy interpretation is forced in these examples.

Of importance is the fact that sloppy interpretation is also available in (43a, b), the Chinese counterparts of (37c) and (38c):

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[10]　I thank J. Lin for Chinese data and their grammatical judgments.

(43)　　a. ?Lisi ye renwei [[bei　　LI jieshou de] shi zui-hao-de].
　　　　　　　too think　　PASS LI accept　DE be best

　　　　'Lisi also thinks that ~~his own elder brother's paper~~ which is accepted by LI is the best.'

　　　b. ?Lisi renwei [[bei　　JEAL jieshou de] shi zui-hao-de].
　　　　　　　think　　PASS JEAL accept　DE be best

　　　　'Lisi thinks that ~~his own elder brother's paper~~ which is accepted by JEAL is the best.'

We take the contrast between Japanese and Chinese relative clauses with respect to the availability of sloppy interpretation to be further support for SL&M's hypothesis that there is a structural difference in relative clauses between these two languages. For our purpose, this cross-linguistic contrast with respect to the availability of sloppy interpretation provides additional support for the hypothesis that Japanese relative clauses do not trigger NP-ellipsis.

4.3.　Summary

We have provided evidence that split and non-linguistic antecedents are allowed in cases with what appears to involve NP-ellipsis with Japanese relative clauses. We have also shown that Japanese relative clauses do not readily allow sloppy interpretation in some cases where NP-ellipsis appears to have taken place. By way of contrast, Chinese relative clauses do permit the interpretation under question in exactly the same context. We therefore conclude that Japanese relative clause do not license NP-ellipsis while their Chinese counterparts can do so. This contrast is straightforwardly accounted for under Simpson/SL&M's proposal.

5.　　Nominal-Internal Distributive Interpretation

We turn to another argument to support the hypothesis that Japanese relative clauses do not license NP-ellipsis. This time, the argument comes from the availability of nominal-internal distributive interpretation, discussed in Miyamoto (2009).

5.1.　Relative Clause-based Analysis of Nominal-Internal Distributive Interpretation

This section begins with an explanation of what nominal-internal distributive interpretation is, along with Miyamoto's (2009) analysis. As with cases with NQs, NQs with *zutsu* can appear in three different positions, as shown in (44):

(44)　　a.　Taroo-ga　　　ni-satsu-zutsu-no　　hon-o　　　　katta (-koto)
　　　　　　　　-NOM　two-CL-DIST-GEN　book-ACC　bought (-fact)

　　　　　'Taro and Hanako bought two books each.'

b. Taroo-ga   hon ni-satsu-zutsu-o   katta (-koto)
   -NOM book two-CL-DIST-ACC bought (-fact)

c. Taroo-ga   hon-o   ni-satsu-zutsu katta (-koto)
   -NOM book-ACC two-CL-DIST bought (-fact)

These examples permit various interpretations including (45a) and (45b). Of significance is the fact that (45c) is available only in (44a). Miyamoto names the interpretation in (41c) 'the nominal-internal distributive interpretation.'

(45)   a.   Taro bought two books each three weeks ago and last week.

       b.   Taro bought two books each at the bookstore in New York and the bookstore in Boston.

       c.   Taro bought the books in twos.

Given the assumption that the distributive affix always requires an element to distribute over in syntax, the nominal-internal distributive interpretation, too, necessitates such an element. Miyamoto claims that, under the interpretation in (45c), the distribution over the covert locative *pro* takes place within the object NP. Given the assumption that locative *pro* is an argument of Tense (with an eventive verb), the presence of locative *pro* requires the presence of TP. This amounts to saying that *ni-satsu-zutsu* 'two-CL-DIST' is a relative clause. Accordingly, the structure of the object NP is as shown in (46):

(46)

```
                          NP
                     ____/  \____
                    TP          NP
                  _/  \_         |
              pro₁     T'       hon₁
                     _/  \_
                   VP      T
                 _/  \_
         Locative pro   V'
              ⇧       _/  \_
            DistP       V
          _/    \_      |
  Distributive Op  Dist'  covert copula
                  _/  \_
                QP      Dist
                |        |
             ni-satsu  zutsu
```
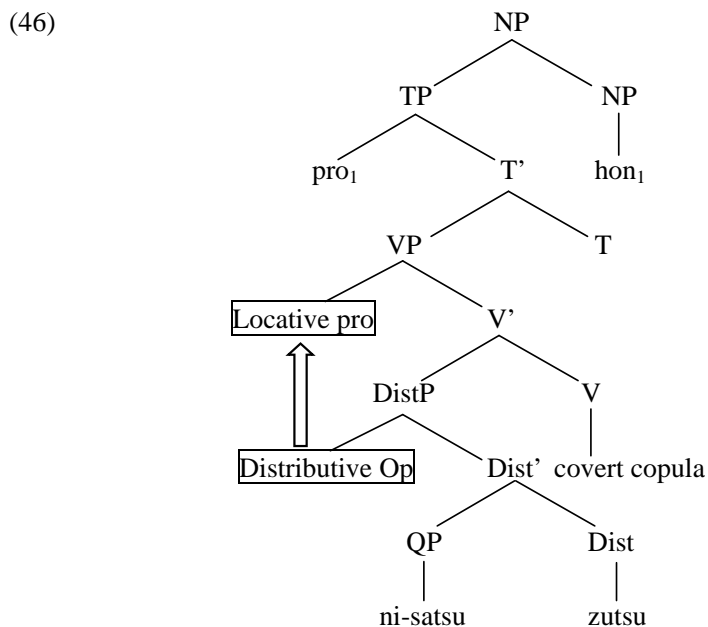
Within the relative clause TP, the distributive operator is raised and adjoined to the locative *pro*, which enables the distribution of sets of two books over the locations to be possible.

Miyamoto argues that this relative clause realizes the nominal-internal distributive interpretation in the same way that distributive interpretation is possible in (47) in spite of the fact that there is no overt NP over which distribution of sets of two books can take place.

(47) hon-ga   ni-satsu-zutsu da.
       book-NOM two-CL-DIST   is

       'The books are in twos.'

5.2. Over-Generation of Nominal-Internal Distributive Interpretation

Considering that the presence of nominal-internal distributive reading indicates that the NQ-*zutsu* forms a relative clause, we examine (48):

(48) zenzen ure-nai-node,   sono-mise-wa, (san-bon-zutsu-no   enpitsu-de-wa   naku,)
      at all   sell-not-because that -store-TOP three-CL-DIST-NO pencil-for-TOP   not
      go-hon-zutsu-no   enpitsu-no   henkyaku-o   kimeta.
      five-CL-DIST-NO   pencil-GEN   return-ACC   decided

      'That store decided to return the pencils in fives(, not the pencils in threes) because they did not sell well.'

In (48), the intended nominal-internal distributive interpretation is clearly available. This means that *san-bon-zutsu-no* and *go-hon-zutsu-no* form a relative clause in this example.

Now, compare (48) with (49) below:

(49) zenzen ure-nai-node,   sono-mise-wa, (san-bon-zutsu-no   enpitsu-de-wa   naku,)
      at all   sell-not-because that -store-TOP three-CL-DIST-NO pencil-for-TOP   not
      go-hon-zutsu-no   henkyaku-o   kimeta.
      five-CL-DIST-NO   return-ACC   decided

      '(intended) That store decided to return the pencils in fives(, not the pencils in threes) because they did not sell well.'

Of significance is the fact that (49) does not allow the intended nominal-internal distributive interpretation. The interpretation salient in this example is that the store decided to return five pencils a time. The question to be raised here is why the intended nominal-internal distributive interpretation is prohibited in this example. This question is particularly important since under the NP-ellipsis-based account, i.e., Takahashi's proposal, we could interpret (49) as having the NP *enpitsu* deleted in (50):

(50) zenzen ure-nai-node,   sono-mise-wa, (san-bon-zutsu-no   enpitsu-de-wa   naku,)
      at all   sell-not-because that -store-TOP three-CL-DIST-NO pencil-for-TOP   not
      [go-hon-zutsu-no   ~~enpitsu~~] henkyaku-o   kimeta.
       five-CL-DIST-NO pencil   return-ACC   decided

The following determines how such an interpretation might be possible.

What needs clarifying in (50) is the status of the *no* attached to *go-hon-zutsu*. Given Takahashi's condition on NP-ellipsis that KP adjuncts must bear Genitive Case when they survive ellipsis, *go-hon-zutsu*, being a relative clause, must receive Genitive Case. Thus, under his proposal, *no* must be an instance of the Genitive Case marker. This is in accordance with Watanabe's (2010) suggestion that the appearance of *no* is regulated by the morphological properties. As acknowledged in SL&M's note 1, cited by Watanabe, *No*-Insertion Rule, shown in (51), is morphological in nature: (-tense) means no overt realization of tense. Accordingly, this results in the contrast between (52a) and (52b):

(51) $[_{NP} \ldots XP(\text{-tense}) N^{\alpha}]$ ➡ $[_{NP} \ldots XP(\text{-tense}) Mod N^{\alpha}]$, where Mod = no

(52)   a. Taroo-ga   syujinkoo-no   monogatari
                -NOM protagonist-NO story

        'a story in which Taro is the protogonist'

        b. Taroo-ga   syujinkoo dearu(*-no) monogatari
                -NOM protagonist is   -NO story

                                                    (SL&M: 250)

The same contrast obtains with NQ+*zutsu*, as shown in (53a, b):

(53)   a. go-hon-zutsu-no   enpitsu
            five-CL-DIST-NO pencil

            'the pencils in fives'

        b. go-hon-zutsu dearu(*-no) enpitsu
            five-CL-DIST are   -NO pencil

We might then assume that *go-hon-zutsu* is subject to (51) and the Genitive Case marker, *no*, is attached to this relative clause.

Furthermore, provided that the overt/covert distinction plays a crucial role in (51), if the NP *enpitsu* is elided, there seems no reason to supply *no* to this deleted NP. This is parallel to the fact that (54b), but not (54c), can follow (54a):[11]

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[11] Based on the contrast between (ia) and (ib), Watanabe (2010) suggests that when two linking elements exist, one of them must be deleted.

(i)   a. go-nin-no   mendoo-o   mi-nakerebanaranai.
           five-CL-NO care-ACC   see-must

           'I have to take care of five (students)'

(54) a. Taroo-wa Hanako-no sankoosyo-o   karita.
                  -TOP   -NO reference book-ACC borrowed

          'Taro borrowed Hanako's reference book.'

      b. Taroo-wa (kanojyo-no) nooto-mo   karita.
                  -TOP her   -NO notebook-also borrowed

          'Taro borrowed her notebook.'

      c. *Taroo-wa-no   nooto-mo   karita.
                  -TOP-NO   notebook-also borrowed

Accordingly, under the NP-ellipsis-based account, (48) should be changed to (49) with the relative head elided, as shown in (50). Since *go-hon-zutsu-no* constitutes a relative clause, we now incorrectly predict that the nominal-internal distributive interpretation be available with the word order sequence given in (49) as well as in (48). Accordingly, the fact that the intended distributive reading is absent in (49) provides another argument against Takahashi's NP-ellipsis-based account.[12]

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    b. *go-nin-no-no   mendoo-o   mi-nakerebanaranai.
        five-CL-NO-NO   care-ACC   see-must

[12] Notice that the intended nominal-internal distributive interpretation is available in (i):

(i) zenzen ure-nai-node,   sono-mise-wa, (san-bon-zutsu-no-de-wa   naku,)
     at all   sell-not-because that-store-TOP three-CL-DIST-one-for-TOP not
     go-hon-zutsu-no-no   henkyaku-o   kimeta.
     five-CL-DIST-one-GEN return-ACC   decided

     'That store decided to return the ones in fives(, not the ones in threes) because they did not sell well.'

It is not clear from Takahashi's discussion whether he allows the pronoun *no* to appear in this particular example. Conversely, under SL&M, a relative clause, being adjoined to NP, should be able to license pronoun *no*, as noted in Section 3.1: accordingly, *go-hon-zutsu* can form a relative clause in (i) with the structure in (ii) below, and this example permits the nominal-internal distributive interpretation.

(ii) [$_{NP}$ [$_{NP}$ [$_{RC}$ go-hon-zutsu]-no]-no henkyaku]
              five-CL-DIST-NO-NO return

The *no* that attaches to the relative clauses is an instance of pronominal *no*. Here the *NO*-reduction rule (Kamio 1983) deletes the Genitive *no*, attached to the relative clause, as illustrated in (iii):

(iii) [$_{NP}$ [$_{RC}$ go-hon-zutsu]~~-no~~ no]

Then, the Genitive Case marker *no* is attached to this NP, due to the *NO*-Insertion Rule in (51). In (i), in contrast to (49), therefore, *go-hon-zutsu* can behave as a relative clause; accordingly, the intended interpretation is correctly expected.

Under SL&M, by way of comparison, since NP-ellipsis is not possible with relative clauses, thus with *go-hon-zutsu*, (49) cannot be understood to involve the elision of the NP *enpitsu*. In addition, the floating quantifier option is also excluded in this particular context, given the fact that numeral floating quantifiers in general cannot appear inside the nominal projection. For instance, (55b) is ungrammatical, in contrast to (55a):

(55)   a.   Taroo-wa   sankoosyo-o   san-satsu katta.
                -TOP reference book-ACC   three-CL   bought

   'Taro borrowed Hanako's reference book.'

   b. *Taroo-wa   sankoosyo-no   (san-satsu(-no))   henkyaku-o   shita.
                -TOP reference book-NO   three-CL (-NO)   return-ACC   did

   'Taro returned three reference books.'

Consequently, among the three positions for an NQ with *zutsu* in (44), (49) must be understood as (56) under SL&M:

(56)   zenzen ure-nai-node,   sono-mise-wa, (san-bon-zutsu-no   enpitsu-de-wa   naku,)
          at all   sell-not-because that -store-TOP three-CL-DIST-NO pencil-for-TOP not
          [*pro* go-hon-zutsu]-no   henkyaku-o   kimeta.
                five-CL-DIST-NO   return-ACC   decided

   '(intended) That store decided to return the pencils in fives(, not the pencils in threes) because they did not sell well.'

(56) enables a variety of interpretations, but not the nominal-internal distributive interpretation. One possible interpretation is of the distribution of sets of five pencils over times. Crucially, SL&M's proposal correctly predicts the absence of the nominal-internal distributive interpretation in (49).

5.3.   Summary

This section has shown that if relative clauses could trigger NP-ellipsis, the nominal-internal distributive interpretation would be over-generated in sentences such as (49). Under SL&M, what appears to be a case with NP-ellipsis is a case with the schematic structure given in (57):

(57)   [$_{DistP}$ Distributive Op [$_{Dist'}$ [$_{QP}$ *pro* NQ]-zutsu]]-Case Marker

Under Miyamoto (2009), this structure correctly predicts the absence of the nominal-internal distributive interpretation.

The fact that the positions available for NQs-*zutsu* are equated to those of NQs implies that what appears to involve NP-ellipsis triggered by a NQ is also an instance of the schematic structure given in (58a) in examples like (58b):

(58) a. [QP [Q' *pro* NQ]]-Case Marker

b. [go-nin-no   mendoo]-o   mi-nakerebanaranai.
       five-CL-GEN   care-ACC   see-must

'I have to take care of five.'

<div align="right">(Watanabe 2010: 65)</div>

However, the detailed examination of such cases is beyond the scope of this paper, and leaves issues relating to the possibility of QP-triggered NP-ellipsis for future research.[13]

6.   Kamio's (1983) Condition on Pronominal *NO*

The arguments presented in the previous two sections lead to the conclusion that relative clauses cannot trigger NP-ellipsis and the *no* attached to the relative clause in Takahashi's examples must be analyzed as the pronominal *no*. However, and importantly, Takahashi uses abstract nouns for the target of NP-ellipsis, assuming Kamio's (1983) condition that states that an abstract noun cannot be replaced by the pronominal *no*. According to Takahashi, therefore, his examples must have involved NP-ellipsis. The purpose of the current section is to reexamine the properties of nouns Takahashi assumes are abstract nouns, and suggests that nothing prevents the pronominal *no* from appearing in Takahashi-type examples.

Kamio (1983) proposes that the pronominal *no* can stand for concrete nouns, but not for abstract nouns. Kamio gives the following examples to illustrate this generalization:

(59)   a. [RC katai sinnen-o   motta] hito
               firm   conviction-ACC had   person

'the person with a firm conviction'

b. *[RC katai no-o   motta] hito
              firm   one-ACC   have   person

'(intended) the one with a firm conviction'

In (59b), the abstract noun *sinnen* 'conviction' is replaced by the pronominal *no*, and this NP/DP is ungrammatical.

Based on Kamio's (1983) restriction on the pronominal *no*, S&M provide examples with an abstract noun for the target of ellipsis. They thus ensure that their examples are genuine instances of NP-ellipsis. One instance in (30), repeated here as (60), is where the abstract noun *hihan* 'criticism' is used.

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[13] See Ochi (2012), S&M, SL&M, Takahashi (2011), and Watanabe (2010) for discussion on the availability of NP-ellipsis to be triggered by numeral quantifiers.

(60)　　[Taroo-no　[jibun-no　shinyuu]-no　　　　hihan]-wa　　ii　　　　ga,
　　　　　　　-GEN　self-GEN　close friend -GEN　criticism -TOP　is good　　though
　　　　[Jiroo-no　　*e*]-wa　yoku-na-i.
　　　　　　　-GEN　　　　-TOP　is not good

　　　　'Taro's criticisms of his own close friend is good, but Jiro's is not.'

Given Kamio's condition, *no* of *Jiroo-no* must be understood as the Genitive Case marker, not the pronominal *no*; NP-ellipsis must have taken place in (60).

　　In contrast, since relative clauses cannot trigger NP-ellipsis, the pronominal *no* is the only option available in (61b), derived from (61a):

(61)　　a.　[[Hanako-ga　　sensei-ni　miseta]　taido]-wa　　ii　　　　ga,
　　　　　　　　　　　-NOM　teacher-to　showed　attitude-TOP　good　though
　　　　　　　[[Taroo-ga　　(sensei-ni)　miseta]　taido]-wa　　　yoku　nai.
　　　　　　　　　　　-NOM　(teacher-to)　showed　attitude-TOP　good　not

　　　　　　'The attitude with which Hanako showed to her teacher is good, but the attitude
　　　　　　with which Taro showed to his teacher is not good.'

　　　　b.　*[[Hanako-ga　　sensei-ni　miseta]　taido]-wa　　ii　　　　ga,
　　　　　　　　　　　-NOM　teacher-to　attend　　attitude-TOP　good　though
　　　　　　　[[Taroo-ga　　(sensei-ni)　miseta]-no]-wa　　yoku　nai.
　　　　　　　　　　　-NOM　(teacher-to)　attend-NO-TOP　　good　not

However, the abstract noun *taido* 'attitude' cannot be replaced by the pronominal *no* in this example, due to Kamio's condition. As a result, (61b) is ungrammatical.

　　Now, the question is why (7b) and (8b), repeated here as (62b) and (63b), are grammatical in spite of the fact that the abstract nouns *syujyutsu* 'operation' and *kankei* 'relation' are used.

(62)　　a.　[[kinoo　　　okonawareta]　syujyutsu]-wa　kantan　datta　ga,　　　[[kyoo
　　　　　　　yesterday　was done　　　operation-TOP　simple　was　　though　　today
　　　　　　yoteisareteiru]　syujyutsu]-wa　　kanari　muzukashii.
　　　　　　is planned　　　operation-TOP　very　　difficult

　　　　　　'(lit.) The operation that was done yesterday was simple, but the operation
　　　　　　that is planned today is very difficult.'

　　　　b.　[[kinoo　　　okonawareta]　syujyutsu]-wa　kantan　datta　ga,　　　[[kyoo
　　　　　　　yesterday　was done　　　operation-TOP　simple　was　　though　　today
　　　　　　yoteisareteiru]-no]-wa　　kanari　muzukashii.
　　　　　　is planned-NO-TOP　　　　very　　difficult

(63) a. [[amerika-ga   nihon-to   kizuita] kankei]-wa   ryookoo da ga,
            America-NOM Japan-with built   relation-TOP good   is   though
         [[*pro* tyuugoku-to   kizukoo-to   shiteiru]   kankei]-wa   saki-ga
              China-with   relation-with trying to build relation-TOP future-NOM
         futoomei da.
         unclear   is

         'The relation that the United States built with Japan has been good, but the
           relation that she is trying to build with China is unclear about its future.'

      b. ?[[amerika-ga   nihon-to   kizuita] kankei]-wa   ryookoo da ga,
            America-NOM Japan-with built   relation-TOP good   is   though
         [[*pro* tyuugoku-to   kizukoo-to-shiteiru]-no]-wa   saki-ga
              China   -with trying to build-NO-TOP   future-NOM
          futoomei   da.
          not obvious is

In this regard, Quirk, Greenbaum, Leech, and Svartvik's (1985: 299) view that " But some
[abstract non-count nouns] can be reclassified as count nouns where they refer to an instance
of a given abstract phenomenon." appears most relevant; consider, for example, Franklin D.
Roosevelt's 1941 Sate of the Union Address, proposing 'four freedoms.' Similarly, (64) can
follow (62b) or (63b):

(64)   [sono futa-tsu-no   syujyutsu/kankei]-wa   seishitsu-ga   mattaku
         this   two-CL-GEN   operation/relation-TOP characteristics-NOM quite
       kotonaru-kara   da.
       different-because is

       'This is because these two operations/relations are quite different in nature.'

(64) shows that *syujyutsu* and *kankei* are counted, and thus, it is quite reasonable that these
nouns represent instances. (63b), for instance, refers to two particular instances of relation
between nations, and these two instances are compared (Kinsui 1994). Roosevelt's address
and (64), therefore, confirm that when an abstract noun refers to a particular instance of the
property under question, the noun no longer behaves as a typical abstract noun. In short,
examples such as (62b) and (63b) may not serve as typical examples involving an abstract
noun. If so, it is perhaps unsurprising that the pronominal *no* can appear in these examples; if
true, these examples do not constitute counter-evidence to SL&M's proposal

    Notice that in (61b), *taido* 'attitude' does not refer to particular 'instances' associated
with this particular concept; accordingly, in contrast to (64), (65) is unacceptable, following
(61b):

(65) *[sono futa-tsu-no   taido]-wa   seishitsu-ga   mattaku
    this   two-CL-GEN attitude-TOP characteristics-NOM quite
    kotonaru-kara   da.
    different-because is

    '(lit.) This is because these two attitudes are quite different in nature.'

We therefore consider *taido* in (61b) as a genuine instance of abstract nouns. As a result, given Kamio's condition, the pronominal *no* is not allowed in this example, as shown above.

Importantly, the contrast between (61b) on the one hand, and (62b) and (63b) on the other poses a problem for Takahashi's NP-ellipsis account. For Takahashi, since all the examples contain 'abstract' nouns, there is no obvious reason why the intended NP-ellipsis cannot take place in (61b); the ellipsis under question should be uniformly permitted in all three examples, contrary to fact. Accordingly, the ungrammaticality of (61b) constitutes our third argument supporting SL&M's proposal based on Kamio's condition on concrete/abstract distinction of nouns. Within the hypothesis that the *no* attached to a relative clause is the pronominal *no*, there is a means to understand Takahashi's examples as well as examples containing a genuine abstract noun, although the question of how to account for the notion of 'instances' remains open for future research (see, for example, Givon 1993; Guillemin-Flescher 1999).

7.   Concluding Remarks

This paper provides three arguments in support of SL&M's proposal on NP-ellipsis in Japanese: (i) the availability of split and non-linguistic antecedents, and the difficulty of obtaining the sloppy interpretation in some cases; (ii) the over-generation of the nominal-internal distributive interpretation in a certain context; and (iii) the relevance of the concrete/abstract distinction on the pronominal *no*. First, in addition to the availability of split and non-linguistic antecedents, Japanese relative clauses, in contrast to their Chinese counterparts, do not easily permit sloppy readings that should be available if NP-ellipsis is involved. This fact is naturally accounted for, given SL&M's proposal under which Chinese, but not Japanese, relative clauses are of the Kaynean type. Second, in a particular context, the nominal-internal distributive interpretation, which requires the NQ+*zutsu* to form a relative clause, is not available without an overt relative head. Under Takahashi's proposal, this fact is very difficult, if not impossible, to explain since the NQ+*zutsu*, being a relative clause, can trigger NP-ellipsis and the relative head can be elided. Third, in Takahashi's examples that he claims involve an abstract noun as the target of NP-ellipsis, the noun under question is not a typical instance of abstract nouns. This paper, accordingly, suggests that Takahashi does not succeed in excluding the possibility that the *no* involved in his examples is the pronominal *no*. In addition, in cases where a 'pure' abstract noun is used, the relative clause, in fact, cannot be accompanied by *no*, as predicted under Kamio's condition. SL&M's proposal, again, correctly captures this contrast between pure abstract nouns and abstract nouns in disguise.

One issue, left for future research, is on the contrasts between Tokyo dialect and dialects spoken in western Japan. In some of Kyushu dialects, the Genitive Case marker *no* is realized as *n(o)*, whereas the pronominal *no* appears as *to*. Given the conclusion that *-no* attached to the relative clause is the pronominal *no*, we expect that relative clauses should be accompanied with *to*, but not *n(o)*. This prediction seems to be borne out, as shown in the contrast between (66), Tokyo dialect, and (67), Nagasaki dialect:

(66) a. Jiroo-wa [[[JEAL-ni keisai-sareta] [[jibun-no   otooto]-no
             -TOP   -in was published   self-GEN   young brother-GEN
         ronbun]]-ga   ichiban da]-to   omotteiru.
         paper-NOM   best   is-that think

         'Jiro thinks that his own younger brother's paper that was published in JEAL is the best.'

      b. Jiroo-wa [[[JEAL-ni keisai-sareta] [[jibun-no   otooto]-no]]-ga
             -TOP   -in was published   self -GEN   young brother-NO-NOM
         ichiban da]-to   omotteiru.
         best   is-that think

      c. Jiroo-wa [[[JEAL-ni keisai-sareta]-no]-ga   ichiban da]-to   omotteiru.
             -TOP   -in was published-NO-NOM best   is-that think

(67) a. Jiroo-wa [[[JEAL-ni keisai-sareta] [[jibun-no   otooto]-n
             -TOP   -in was published self -GEN   young brother-GEN
         ronbun]]-ga   ichiban ya]-to   omottoru.
         paper-NOM   best   is-that think

         'Jiro thinks that his own younger brother's paper that was published in JEAL is the best.'

      b. Jiroo-wa [[[JEAL-ni keisai-sareta]   [[jibun-no   otooto]-n**-to**]]-ga
             -TOP   -in was published   self-GEN   young brother-NO-one-NOM
         ichiban ya]-to   omottoru.
         best   is-that think

      c. Jiroo-wa [[[JEAL-ni keisai-sareta]**-to**]-ga   ichiban ya]-to   omottoru.
             -TOP   -by was published-one-NOM best   is-that think

(67c) certainly suggests that the direction we pursued in this paper is promising. However, we admit that there are some dialectal or idiolectal differences among native speakers of these dialects. Therefore, any decisive conclusion must wait for further study.

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STEPS IN THE EMERGENCE OF FULL SYNTACTIC STRUCTURE IN CHILD GRAMMAR *

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1.   Introduction

Between the ages of 11 and 19 months, the first utterances (or holophrases) make their appearance in child language. It has generally been believed that children's knowledge of syntactic structure is not well developed during the initial period of language acquisition. Japanese-speaking children, just like children speaking other languages, start with the holophrase stage, followed by the two-word stage and the multi-word stage. But children do not necessarily start just with nouns and verbs. They also produce the uppermost elements that link the speaker and the addressee, or discourse markers/sentence-final particles, at a very early stage of language acquisition as well. This paper explores two topics pertaining to children's early syntactic structure, Root Infinitives and the acquisition of discourse markers.

In this paper, we report the finding that Japanese- (and Chinese-) speaking children produce sentence-final particles earlier than tense-marked verbs, but argue that this is consistent with the Truncation Hypothesis proposed by Rizzi (1993/1994) for children's early

syntactic structure. We show that a Japanese-speaking child at around 1;05 through 1;08 produce Root Infinitive (Analogues) such as the Verb+*ta* form with speech act heads such as *ne*, and later, at around 1;10, the complementizer *no*, which is the head of a Finite Phrase for propositions, productively. The empirical fact that it is only after 1;11 when the full conjugation of the verbs and Nominative Case marker start to appear suggests that children do not simply construct the phrase structure in a bottom-up way. Rather, very young children's syntactic structures are truncated, and the sentence-final particles or discourse markers bootstrap the acquisition of their full syntactic structure.

2.   Grammatical Tense Deficits in Children

2.1.   Root Infinitives

Young children have troubles with tense-marking. It has been found that in languages with relatively "rich" morphology such as Dutch, German and French, children may optionally use the infinitival forms of inflection (e.g., affix) on the verbs, rather than finite ones, in the root clause.

(1)   a.   Mama   radio aan doen (Dutch) (2;00)
            mummy   radio on   to-do

            'Mummy switch on radio.' (Wijnen, Kempen and Gillis 2001)

      b.   Thorsten   Caesar   haben (German) (2;01)
            Thorsten   Caesar   to-have

            'Thorsten has [the doll] Caesar.' (Poeppel and Wexler 1993)

      c.   Voir   l'auto   papa (French) (2;02)
            to-see the car   daddy   (Intended meaning: On-going activity) (Pierce 1992)

In languages which are relatively "poor" in inflectional morphology like English, on the other hand, the bare verb forms appear in finite (root) contexts. In adult English, infinitive forms are generally the bare stems, and English-speaking children produce the bare stems within the age range of 20-36 months as shown in (2).

(2)   a.   Papa have it (English) (1;06)

      b.   Cromer wear glasses (English) (2;00)

The non-finite verb forms employed by children in finite (root) contexts are termed Root Infinitives (RIs), and their properties have been extensively examined in child language research.

It has been pointed out that RIs/Root Infinitive Analogues (=RIAs) are associated with some morpho-syntactic and semantic properties.

(3)　　Properties common among Root Infinitives/Root Infinitive Analogues

    a.　At the RI stage, no T-related/C-related items are found.

    b.　RIs are produced to describe events in real time, that is, as an on-going activity in the past, present or future that the child is involved in.

    c.　RIs occur in modal contexts (Modal Reference Effects).

    d.　RIs are restricted to event-denoting predicates (Eventivity Constraint).

    e.　Head Merger is not available during the RI(A) stage.

As shown in (3a), at the stage where non-finite verbs are used in finite (root) contexts, C-related elements such as *wh*-phrases and complementizers (Haegeman 1995), and T-related elements such as *be*-copula and auxiliaries are not found. In addition, two peculiar types of contextual interpretations have been identified. One type refers to the so-called extensional contexts, whereby RI(A)'s are produced to describe events in real time, that is, on-going activities in the past, present or future that the child is involved in. For example, the non-finite forms in child French like (1c) are produced to describe an on-going activity. The other type of interpretation refers to the so-called intentional contexts, whereby RI(A)s are produced to express children's intention, desire or volition in various "irrealis" modal contexts. This is termed the Modal Reference Effects (MREs) (Hoekstra and Hyams 1998). In addition, RIs, in general, are largely restricted to the eventive predicates (Hoekstra and Hyams 1998), and the head merger between V and T is not available during the stage of RI(A)s (Phillips 1995, 1996; Murasugi and Fuji 2008b).

    Deen (2002) argues that Swahili also has an RIA, whose form is a bare verb just like English. He argues that Swahili-speaking children omit prefixes in a pattern quite consistent with Schütze and Wexler's (1996) Agreement and Tense Omission Model (ATOM). According to ATOM, subjects need to check both tense and agreement features for adults, but for kids, only one is possible. Either T or Agr is left out, and hence, the case errors (e.g., *Him want it*) and the RIs are both observed at around 2 to 3 years old. Crucially, tense and agreement have distinct properties and play distinct roles in licensing the subject and inflection. Table 1 summarizes the possible combinations of the features of INFL. When agreement is fully specified in English, nominative Case must be assigned. When agreement is underspecified, nominative Case cannot be assigned, and hence, a default case, accusative Case, may arise. When tense is underspecified, the verb appears as a bare verb. When tense and agreement are both underspecified, subject is marked with genitive Case with a bare verb.

Table 1: Summary of possible features of INFL and the Case on Subject

INFL features	Subject	English Examples
+Tense, +agreement	NOM-Case marking	he cries
+Tense, - agreement	ACC-Case marking	him cry, him cried
-Tense, +agreement	NOM-Case marking	he cry
-Tense, - agreement	GEN-Case marking	his cry

(Schütze and Wexler 1996)

Accordingly, young children speaking Swahili omit functional elements such as tense and subject agreement, as shown in (4).

(4)   Swahili RIAs: Bare Verbs (Deen 2002)
    a. Child: mimi Ø   -na   -ruk -a (2;10)
        Adult: mimi ni   -na   -ruk -a (present tense)
                     SA1s -pres -jump -IND

        'I jump down.'

    b. Child: ni   -Ø   -kw   -ambi -a (1;10)
        Adult: ni   -na   -kw   -ambi -a
                SA1s -pres -OA2s -tell -IND

        'I am telling you.'

    c. Child: Ø   -Ø   -tak -a   tuwadh -a (2;06)
        Adult: ni   -na   -tak -a   tuwadh -a
                SA1s -pres -want -IND   bathe   -IND

        'I want to bathe.'

(4a) is a clause which lacks subject agreement; (4b) is a clause which lacks tense. (4c) shows that the child uses the bare stem of the verb which lacks both subject agreement and tense.

Deen (2002) typologically classifies child languages into three types: languages that allow "true" RIs such as German and French, languages that have no RI phenomenon such as Italian and Japanese, and languages like Swahili whose very early non-finite verb forms appear as bare verbs. Deen's typology has been supported, in part, by the tendency of subject NPs being phonetically null at the RI(A) stage in the non-pro-drop languages in general, and the empirical findings that Italian-speaking children (e.g., Martina (1;08-2;07), Diana (1;10-2;06), Guglielmo (2;02-2;07)) (Guasti 1993/1994) and Japanese-speaking children (e.g., Toshi (2;03), Ken (2;08-2;10), Masanori (2;04)) (Sano 1995) produce inflected forms in the

adult way at an early stage of language acquisition. It has been considered that children acquiring pro-drop languages do not go through the RI(A) stage.

Table 2: Typology of Root Infinitives (Deen 2002)

True RI Languages	Non-RI Languages	Bare Verb Languages
German	Italian	English
Swedish	Japanese	Quechua
French	Spanish	Sesotho
Icelandic	Catalan	Inuktitut
Dutch		Siswati
Russian		Swahili

In the next section, we argue that there <u>is</u> an RI stage in Japanese, and the languages categorized as Non-RI languages above are, in fact, the languages which have surrogate verb forms as the Root Infinitive Analogues.

2.2. Surrogate Verbs in Child Japanese: Verb+*ta* Form

Japanese is an agglutinating argument-drop language where bare stems cannot stand alone without, for example, tense or aspect morphemes, as shown in (5). Japanese is, like Italian and Spanish, a [-stem] language whose verbs cannot surface as bare forms.

(5)   a.   *tabe- (to eat)

       b.   *suwar- (to sit)

Unlike Italian and Spanish, however, Japanese does not have rich verbal inflection that indicates number and gender. Japanese verbs inflect for tense, negation, aspect and mood. The following are some inflections for the verb "to eat," which has the root *tabe-*.

(6)   a.   tabe-ru (eat) present/dictionary form

       b.   tabe-ta (ate) past

       c.   tabe-(a)nai (not eat) negation

       d.   tabe-(i)te iru (is eating) progressive[1]

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[1]   The abbreviated V-*teru*/-*teta* forms are used as colloquial expressions in Adult Japanese.

(i)   Tabe-te-ru/-ta
       eat-Asp-Pres/-Past

       '(I) have/had eaten.' / '(I) am/was eating.'

     e.   tabe-te (eat) imperative

The verb stem *tabe-* (to eat) is followed by the present-/past-tense morphemes as in (6a-b), and it is followed by the aspectual morpheme *-te-i* to indicate either an ongoing process or a result state of the event as in (6d). For request or imperative, the *-te* form is employed as in (6e).

The conjugations in Japanese are acquired at an early stage, at around the beginning of age two. The numbers of each verbal forms in Sumihare (Noji 1973–1977) are shown in Figure 1.

Figure 1: Frequency of verbal forms in Sumihare's corpus
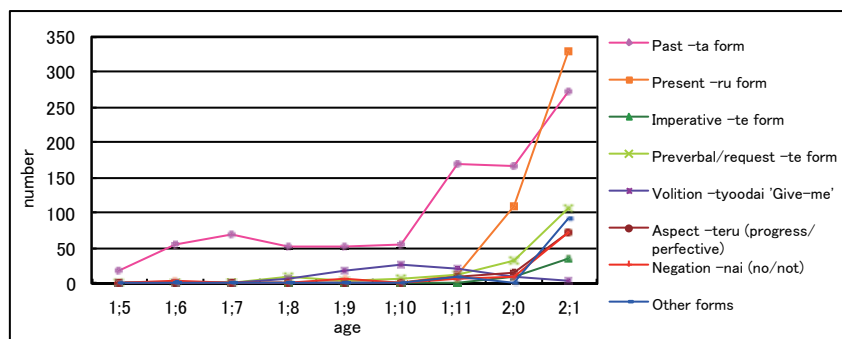
Murasugi, Fuji and Hashimoto (2007), Murasugi and Fuji (2008a, b) and Murasugi, Nakatani and Fuji (2010), based on the corpus analysis of Sumihare (CHILDES) and the longitudinal study with Yuta, a Japanese-speaking child, argue that there is a stage of RIAs in Japanese acquisition. According to them, some of the typical properties of RIs given in (3) are also observed in Japanese in early non-finite verbal forms: (i) T-related (e.g., Nominative Case and copula) and C-related items are not observed with the early non-finite verbs, and tense is underspecified, (ii) the past-tense morpheme is not found with adjectives (i.e., only present-tensed adjectives are produced), (iii) Verb-*ta* forms (past-tensed verb forms) are produced to describe an on-going activity, (iv) Verb-*ta* forms (past-tensed verb forms) are used in matrix clauses for the irrealis or volition meaning (Modal Reference Effects (=MRE)), (v) Verb-*ta* forms are restricted to event-denoting predicates, and (vi) no merger of heads inside the verbal projection are observed at the RIA stages Phillips (1995) proposes.

Sumihare, for example, at around 1;06 through 1;11, used the Verb-*ta* form in a different way from adults, semantically denoting the meaning of volition (desire) or request.

(7)   a.   Atti   Atti   Atti   i-*ta* (1;06) (irrealis/volition) (Adult form: ik-u/ik-e)
         there there there go-TA

        'I want to go there. / Go there.'

b. Tii   si-*ta* (1;07) (irrealis/volition) (Adult form: si-ta-i)

    onomatopoeia (pee)   do-TA

    'I want to pee.'

c. Baba   pai-*ta* (1;08) (request) (Adult form: pai-si-te)

    mud   onomatopoeia (throw away)-TA

    'Throw (the mud) away.'

Noji (the observer) describes that *i-ta* in (7a)[2] means *ik-u* (go-Pres), and states, "Sumihare uttered *i-ta* as he could not say *ik-u*" (Noji 1973–1977 I: 195). Noji also writes important comments for (7b), which convinces us of the Modal Reference Effects at the early stage of Japanese acquisition: Sumihare used *tii-si-ta* in a volition context when he wanted to pee. As for (7c), Sumihare produced *pai-ta*, attaching *-ta* on the onomatopoeia *pai* (to throw away), in order to ask his mother to remove mud from a potato.

The percentage of V-*ta* forms decreases with age, as is clear from Figure 2. At 1;06-1;07, he used the V-*ta* form almost 100% of the time. RIAs are not "<u>optional</u> infinitives" in Japanese-type languages.

Figure 2: The overall proportion of verbal forms in Sumihare's corpus at each stage.
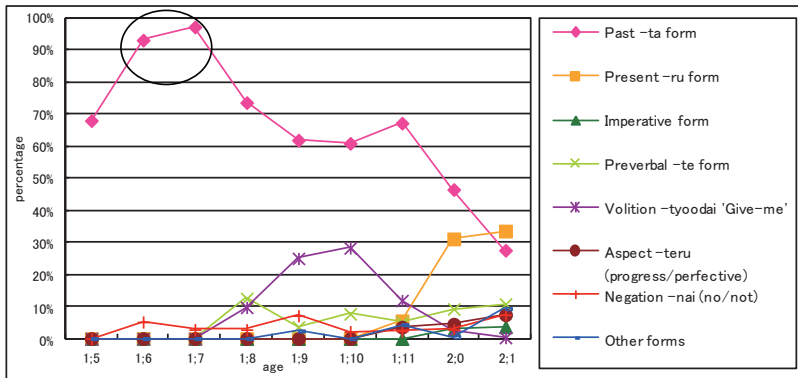
Parallel data are found in a longitudinal study with another Japanese-speaking child, Yuta, as in (8) (Nakatani and Murasugi 2009).

(8)   a.   Ai-*ta*   Ai-*ta* (1;07.1) (irrealis/volition) (Adult form: ake-te)

        open-TA   openPast

        'I want to open this cabinet./ Open this cabinet.'

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[2] The context for (7a) is the following: Sumihare's father (Noji, the observer) went out for a walk with Sumihare on his back. Noji tried to go back home, but Sumihare pointed to a different direction and produced "atti (there)" twice. Sumihare got frustrated and said, "atti i-ta (there go-Past)=(Literal meaning: I went, Intended meaning: I wanna go there)" angrily again.

    b. Hait-*ta*   Hait-*ta* (1;07.16) (volition) (Adult form: ire-tai)
        enter-TA   enter-TA

       'I want to put this notebook into this bag.'

    c. Oti-*ta*   Otyoto(=Osoto) Oti-*ta* (1;07.13) (progressive)
        drop-TA   outside   drop-TA(Adult form: otosi-teiru)

       'I am putting this doll out outside.'

    d. Oti-*ta*   Oti-*ta*   Oti-*ta* (1;07.5) (result) (Adult form: oti-teiru)
        fall-TA fall-TA fall-TA

       'A container of the video tape is lying there.'

The empirical evidence that V-*ta* forms, but not the other verbal forms such as present-tensed forms, are consistently used by the very young children under two to denote intentional meaning exemplified in (8a) and (8b) and extensional meaning exemplified in (8c) and (8d), suggests that the verbal conjugation, i.e., the merger of V and inflection, is not yet available then. This is the stage where a default morphological form in the target language is used as the first verbal form by a child.

    Then, why is it the case that V-*ta* form is chosen as the RIA in Japanese by different children out of several inflected forms, despite the fact that each child receives different input? Here arises a bridge between child language and syntactic theory. Murasugi (2009) proposes that V-*ta* is the default infinitive form in both child and adult Japanese.

    Cinque (2004) and Kawai (2006), for adult Syntax, propose that there are non-finite "surrogate" verbs that look like finite verbs, and the surrogate forms are derived by an operation to make the verbal stems well-formed morphological words in the adult grammar of Salentino/Serbo-Croatian and Japanese, respectively. Furthermore, there is evidence that the past-tense form, V-*ta,* which children pick as an RIA is most unmarked among the possible forms in Japanese.[3]

    Two conjuncts unspecified for tense, for example, are conjoined with -*ta* forms as in (9a-b), and -*ta* forms can be used for future as in (10a-b) and with irrealis meaning as well, as exemplified in (10c).

(9)   a. Tabe-**ta** ri   non-**da** ri si-yoo/su-ru/si-ta
          eat-TA   drink-TA let's do/do-Pres/do-Past

       'We eat/ate, and we drink/drank.'

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[3] Non-finite verb forms are found in the embedded clauses in Adult Japanese. The past verbal inflection -*ta* lacks tense interpretation (but it is rather aspectual) in such relative clauses as "*yude-ta tamago*" (boil-past egg, meaning boiled egg (property reading)) in Adult Japanese.

b. It-**ta** ri ki-**ta** ri de taihen   da/dat-ta
    go-TA   come-TA for troublesome is /was

    'It is/was troublesome to go back and forth.'

(10) a. Asu-wa   nani-o   suru-no-dat-**ta**-ka-na?
          tomorrow-Top what-Acc do-Nom-Cop-TA-C-Speech Act

          'What am I going to do tomorrow?'

      b. Sooda! Asu-wa   paatii-dat-**ta**!
          so-Cop Tomorrow-Top   party-Cop-TA

          'Aha! Tomorrow is a party!'

      c. Mosimo   watasi-ga   ie-o   tate-ru/-**ta**   nara   tiisana
          if   I-Nom   house-Acc   build-pres/TA   then   small
          ie-o   tate-ru/-ta   (deshoo)
          house-Acc   build-pres/-TA (would)

          'If I built a house, I would build a tiny one.'

Furthermore, just like infinitives in Italian (Rizzi 1993/1994), Japanese V-*ta* forms can be used as non-finite surrogate forms to express strong imperatives as shown in (11).

(11) a. Partire immediatamente!
          go   immediately   (Rizzi 1993/1994)

      b. Sassato   Kaet-**ta**!   Kaet-**ta**!
          immediately   go back-TA   go back-TA

          'Go back immediately.'

Thus, the *ta*-form seems function as a non-finite form as well as a past-tense form in adult Japanese. Children, without being taught by caretakers, even at one year old, choose the non-finite V-*ta* form as the surrogate form, attaching a "default" morpheme *ta* to the verb stem, before they fully acquire the conjugation system of the verbs.

Suppose that the unmarked surrogate form in Japanese is the non-finite V-*ta* form in adult Japanese. The agglutinative language-speaking children, even at the age of one, know the morphological property that verbal stems **cannot** stand **without** tense/aspect morphemes in their target language. And when Tense Phrase is not projected, the unmarked verbal suffix(es) is (are) chosen for the surrogate form(s), i.e., the RIA(s).

2. 3. Typology in Root Infinitives Revisited

There are in fact a lot of important cross-linguistic studies reporting that very young children produce verbs which appear to be finite, but are, in fact, non-finite. For example, as

shown in (12), Kim and Phillips (1998) find that Korean-speaking children, at the beginning of age two, attach a mood marker *-e* and the form is used in the full range of environments almost 100 percent just like Japanese *-ta*. According to Kim and Phillips (1998), in adult Korean, *-e* functions as a default mood marker. And their subject uses the Verb+*e* form in all contexts, even in contexts where the V-*e* form is not allowed in the adult Korean.[4]

(12)   Korean RIAs: Stem + Mood particle *-e(/a)* form (Kim and Phillips 1998)

    a. mek-e   emma (2 yrs) (adult form: *mek-ca* (eat-Propositive))

        eat-Decl   mommy

        'Let's eat, Mommy.'

    b. ayki   pwo-a (2 yrs) (adult form: *pwo-l-kkeya* (look-Presumptive))

        baby   look-Decl

        'Baby (I) will look at it.'

In (12a) instead of the propositive morpheme, and in (12b) instead of the presumptive morpheme, *a(e)* is used. Just like Japanese, T-related (e.g., Nominative Case) and C-related items are <u>not</u> observed with the early non-finite verbs, and tense is underspecified. Table 3 summarizes the child languages that have what we call "the surrogate verbs".

Table 3: Child languages that have Surrogate Infinitives

	±bare stem	Forms	Source
Italian	−	Imperative form	Salustri and Hyams (2003, 2006)
Kuwaiti Arabic	−	Masculine imperative form	Aljenaie (2000)
Spanish	−	3rd person singular form	Grinstead (1994), Pratt and Grinstead (2007)
Catalan	−	3rd person singular form	Grinstead (1994), Torrens (1995)
Romanian	−	Verb+Past participle form	Nicoleta (2006)
Greek	−	Bare perfective form	Varlokosta, Vainikka and Rohrbacher (1998), Hyams (2005)
Turkish	−	Verb+-*di* (Past tense marker)	Aksu-Koç and Ketrez (2003)
K'iche' Maya	−	Stem+*ch/ik* (sentence terminator)	Pye (2001)
Korean	−	Stem+Mood particle *e(/a)* form	Kim and Phillips (1998)

For example, Arabic is a synthetic language with rich bound morphology. As shown in (13),

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[4] See Murasugi and Fuji (2008a) for the details.

Aljenaie (2000) finds that Kuwaiti Arabic-speaking children at around the age of two typically produce verbs which lack present and past tense, and mark the stem with another inflection.

(13)　Kuwaiti Arabic ([-bare stem]) RIAs: Masculine imperative form
　　　Eh　xalis (1;11-2;05) (adult form: *xalis-at* (finish-3f))
　　　yes,　finished

　　　'Yes, it is finished.' (Aljenaie 2000)

Children never leave a verb uninflected as it does not constitute a well-formed word in Kuwaiti Arabic, but alternatively, children choose a default masculine imperative form as the surrogate verb form. Many children, who speak the languages whose verb stems cannot stand alone, produce surrogate verbs at around late one or very early two years old. These children consistently use the default "apparently conjugated" infinitive form during the RIA period.

　　　Note here that RIAs with the so-called "surrogate infinitives" are found at around age one, much earlier than RIs are found in European languages, and the non-finite form is not optionally used either. The non-finite form is initially (at around 1;06-1;07) used 100% of the time in a full range of environments, and there is no correlation between null subjects and non-finite verb forms in Japanese and Korean, for example, unlike the case of European RIs.

　　　The sharp contrast indicates that the so-called "Root Infinitive (Analogue) stage" is actually twofold: tense-truncated stage and tense-unspecified stage. The RI(A)s found before two are the default verb forms in the target language, and they are used either when Tense Phrase is not projected as the Truncation Hypothesis (Rizzi 1993/1994) predicts or when there is no functional categories as Radford (1990, 1991) and Galasso (2011) propose.[5] In fact, Galasso (2011) finds that the stage where D is missing (as in *Jim book* (=Jim's book)) comes before the Root Infinitive stage where T is optionally morphologically realized and non-nominative subjects appear in the subject position (as in *Her eat it* (She eats it.)).

　　　RIAs found at a later stage after two correspond to the so-called Optional Infinitives. Optional Infinitives, the infinitives optionally used in the matrix clauses, are produced when features in Tense and Agreement are underspecified as ATOM (Schütze and Wexler 1996) predicts. In fact, just like English-speaking children, children speaking Japanese[6], for example, also optionally mark the subject of the sentence "erroneously" with genitive or dative after the verbal conjugations are acquired after two or so, and this is the stage observed

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[5]　Rizzi (1993/1994) presents "the truncation model", under which very young children may "stop early" as they are building up the phrase structure. Adults build their trees all the way to CP as a root, but children might not.

[6]　See Radford (1990, 1999) and Galasso (2011) for the detailed analysis of non-nominative subjects in Child English. And see Murasugi and Watanabe (2009), Sawada, Murasugi and Fuji (2010) and Sawada and Murasugi (2011) for the analysis of non-nominative subjects in child Japanese. See also Mahajan (2004) for the syntax of non-nominative subjects.

in a lot of languages.[7]

2.4. Imperatives (Bare Verbs) in Child Chinese

The discussion so far indicates that if a language L has verbs whose stem cannot stand alone, children speaking L would produce the "surrogate infinitival" forms (e.g., as in Japanese) or infinitival form (e.g., as in Italian). Then, what about an isolating pro-drop, or more precisely, isolating argument-drop language, Chinese? Adult Chinese is an isolating language which does not have the so-called "infinitives". Do Chinese-speaking children go through the RIA stage? If so, which form do Chinese-speaking children use as their RIA?

Given the argument so far, we would predict that Chinese-speaking children would use the bare forms as the RIAs. In what follows, we will present a piece of evidence to indicate that the prediction might be accurate.

RI(A) phenomenon is very much related to the imperative. In fact, the bare stem of the verb in English, the Japanese V-*ta*, and infinitives in European languages are generally used as imperatives as well. And there are a lot of cross-linguistic studies reporting that the first non-finite verbal form children produce is imperative.

Salustri and Hyams (2003) observe that the proportion of imperatives is significantly higher than that of RIs. According to Salustri and Hyams (2003, 2006), Italian-speaking children begin using imperatives before the age of 2, and the verbs have appropriate morphology.

(14)   dammi! (1;10)
         give-to me$_{cl}$

         'give it to me.' (Salustri and Hyams 2003)

There are cases where two forms are observed even in a single language as RIs. For instance, Bar-Shalom and Snyder (2001) report that children speaking Russian produce two forms of RIs: infinitives and imperatives. Dutch has been considered a typical RI language, but still, there are some mysterious descriptions. As shown in (15), Wijnen, Kempen and Gillis (2001) report that verbal forms resembling imperatives are found, in addition to the infinitive forms, at the early two-word stage. If this is the case, then Dutch-speaking children

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[7] The absence of agreement is connected with the parameter of argument-drop (Saito (2007), Takahashi (in press)). Japanese is a language that allows argument ellipsis, and argument ellipsis in Japanese is proposed to arise from the absence of overt agreement. Mamoru Saito (p.c.) suggested a possibility that when the agreement system is not fully acquired at around two, the English-speaking children may allow argument ellipsis as well, just like Japanese. His suggestion may naturally explain the well-known empirical fact that robust null subjects are observed at the stage of "Root Infinitives" when the features of Tense and Agreement are not fully specified, and the subject NPs are marked with either nominative, genitive or dative optionally at around two in a lot of languages including English.

produce the imperative forms as well as the infinitive forms as their first verbs.

(15) "…Starting with the early two-word stage, forms resembling imperatives were
      discarded from the analyses, as it is unclear whether they are finite or non-finite."
      (Wijnen, Kempen and Gillis 2001)

The findings independently obtained from Russian, Italian and Dutch given above may not be coincidental. The very early non-finite verbs do not necessarily appear in a single form per language. Furthermore, the imperative forms, it seems, are chosen as the RIAs in more than a few languages.

Lillo-Martin and Quadros (2009) also argue that imperative forms are RIAs in American Sign Language (ASL) and Brazilian Sign Language (LSB). These languages have both agreeing verbs which move from one location to another associated with their arguments, and plain verbs which do not require modification to indicate the subject or the object. Lillo-Martin and Quadros (2009) argue that children produce notably more imperatives with agreeing verbs than with plain verbs, and further, that the ratio of imperatives is quite high. Grinstead (1998), Bel (2001) and Montrul (2004) find that imperatives are quite frequent in the early stage and decrease over time in Spanish and Catalan. In child Hungarian and Slovenian, the imperative forms are reported to start out very high and decrease with age, too (Londe 2004, Rus 2004).

As for Chinese, Chien (2009), based on the corpus analysis of two children (1;9-3;1, 1;11-3;0) and two adults from Tsing-Hua Mandarin Child Language Corpus, argues that children speaking Mandarin use imperative forms as RIAs. The imperative RIA is exemplified in (16):

(16) a. (ni) qu chi mian-bao (2;05)
          (you) go eat bread

          'You go to eat the bread.'
          (Context: The child (=speaker) asks the adult to eat the bread.)

      b. (ni) yong na ge he   cha (2;06)
          (you) use   that CL drink tea

          'You use the one to drink tea.'
          (Context: The child (=speaker) asks the adult to use that cup to drink tea.)

      c. Ni   bao   ta (2;05)
          you   hold   it

          'You hold it.'
          (Context: The child (=speaker) asks the adult to hold a toy.)

    d. Ni   qian   ge-ge (2;05)
        You pull along   brother

    'You pull along my brother.'
    (Context: The child (=speaker) asks the adult to pull along his/her brother.)

Chien's (2009) finding has striking parallels with Salustri and Hyams' (2003, 2006) proposal that Italian RIAs are imperatives. The evidence is elicited based on the criterion given in (17):

(17)   a. In null subject languages imperatives will occur significantly more often in child language than in adult language.

        b. In child language imperatives will occur significantly more often in the null subject languages than in the RI languages.

                                    (Salustri and Hyams 2003, 2006)

    Chien (2009) finds that the frequency of imperatives in child Mandarin is higher than the frequency of imperatives in the adult speech, and argues that the results obtained in her study are consistent with those of Salustri and Hyams' (2003, 2006). According to Salustri and Hyams (2003, 2006), Italian-speaking adults use only about 5.6% imperative forms; while Italian-speaking children use about 16.4% to 31.1% imperative forms (and use only 0% to 2.8% infinitive forms). In contrast, in German, a typical RI language, adults use 35.6% imperatives, and children use about 10% imperative. Chien's (2009) data is basically parallel with Salustri and Hyams' (2003). For example, according to Chien's (2009) counting, Mandarin-speaking adults use only about 10% imperative; while a Mandarin-speaking child, at 2;5, use about 47% imperatives. A closer examination of Chien's (2009) findings indicates that the contrast between child and adult imperatives is much more salient in Chinese than the Italian case. For a Mandarin-speaking child at 1;11, her study shows that 60% of the utterances is in imperative form. Thus, just like Salustri and Hyams (2003, 2006), Chien's (2009) finding suggests that there is a RIA stage in Chinese, and the form is imperative in Mandarin Chinese.

    Now, given Chien's (2009) finding, we predict that the very young children producing imperatives as their RIAs would produce the strings that lack or are underspecified with tense. And there is a piece of evidence to suggest that this might be correct.

    Lin (2008) argues that there is a finite and non-finite contrast in adult Mandarin. According to Lin (2006, 2008), epistemic and obligation modals take a finite TP complement and can only appear in finite contexts. By contrast, future and other types of root modals take a non-finite TP complement and can occur in finite and non-finite clauses.[8] He argues that epistemic modals always scope over *le* since *le* can be licensed within their finite TP

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[8] As a result, Lin (2006) proposes that modals that take finite TP must precede modals that take a non-finite TP, and Lin thereby sets up the following hierarchy of modals in Mandarin Chinese.

(i)   Necessity > Possibility/Obligation > Future > Ability/Permission/Volition

complements. Conversely, root modals always scope under *le* because *le* cannot be licensed within their non-finite TP complements. If *le* is to appear, it must be generated in the matrix Asp and takes the modal verb as its complement. See (18) (Lin 2006).

(18) a. Zhangsan$_i$ T$_F$ [$_{AspP}$ [$_{VP}$ keneng [$_{TP}$ t$_i$ T$_F$ [$_{AspP}$ [$_{VP}$ qu Taipei] le]]] Ø]
          Zhangsan   likely   go Taipei Prf Stc

      'It is likely that Zhangsan has gone to Taipei.'

      b. Zhangsan$_i$ T$_F$ [$_{AspP}$ [$_{VP}$ nenggou [$_{TP}$ PRO T$_{NF}$ [$_{AspP}$ [$_{VP}$ qu Taipei] Ø]]] le]
          Zhangsan   able   go Taipei Stc Prf

      'Zhangsan has (become) able to go to Taipei.'

What crucially matters for the argument here is the fact that the sentence-final particles *le* (and the progressive aspect marker *zai,* according to Lin (2008)) in adult Mandarin distinguishes finite sentences from non-finite ones. Given the adult grammar, the perfect sentence particle *le* (and *zai*) is predicted to be (at least optionally) absent/underspecified at the stage of RIAs in child Mandarin.

Liu (2009), interestingly enough, observes that Mandarin-speaking children drop the perfective sentence particle *le* at a very early stage of language acquisition. HY (1;09), for example, dropped *le* in the obligatory context as shown in (19). In (19), the child dropped *le* even when repeating what his mother has said to him.

(19) Mom: Xie huir, lei   le
              rest a-bit tired LE

          'Let's rest a bit; you are tired.'

      HY (1;09): Xie huir, lei Ø

A similar example in (20) in found in the production of BB (1;10).

(20) BB (1;10) : Nainai   qu   nar Ø
                   grandma   go   where

              'Where does Gramma go?'
              (Intended meaning: 'Where did Gramma go?')

      Mom: Ta nainai   qu Hangzhou le.
            his gramma go   LE

          'His Gramma went to Hangzhou.'

As shown in (21), the achievement verb *po* (to be torn, worn out) should be marked with the perfective marker *le* in adult Mandarin, but a child, LC (1;09), dropped it.

(21)　　LC (1;09) :　po Ø
　　　　　　　　　　wear-out

　　　　　　　　　　'It's worn out.'

　　Needless to say, we need to confirm that the Mandarin-speaking children using imperatives as RIAs <u>also</u> drop *le* at the same time. We also need to examine carefully whether or not the typical RI(A) properties listed in (3) are observed in Mandarin Chinese. However, the fact that Mandarin-speaking children dominantly use imperatives (as RIAs) and drop the perfective marker *le* at the age of one suggests that there is an intermediate stage where the sentence is underspecified with or lack tense even in the acquisition of a typical argument-drop language, Mandarin Chinese.

　　To sum up the argument so far, we have addressed two questions: (i) "what" question, i.e., the descriptive adequacy of the claim that the pro-drop language-speaking children do not go through the RI(A) stage, and (ii) "how" question, i.e., why it is the case that there are cross-linguistic variations in the form or RIAs. We argued that children acquiring Japanese, Korean and Chinese, typical pro-drop or argument-drop languages, do go through the RI(A) stage. Non-finite verbs in finite (root) contexts are common in the very young child production cross-linguistically, and the early verbal forms in child languages reflect the core morphological properties of the adult grammar.

　　In particular, we argued that V-*ta*, or the past-tense/strong imperative form, V-*e*, or verb followed by the default mood, and the imperative form (or the bare form), are the RIAs in Japanese, Korean and Chinese, respectively. Child language reveals that Japanese and Korean are grouped together as the "surrogate"-RI(A)-type language just like Turkish and Kuwaiti-Arabic. Child Chinese, on the other hand, indicates that the RIA in Chinese is the imperative form just like Italian and ASL. Interestingly enough, the imperative form in Chinese is the bare form just like English and Swahili at the same time. Chinese-speaking children, thus, naturally pick up the imperative form, or the bare form of verbs as their first verb, i.e., an RIA.

3.　The Truncation Model

　　Then, what are Root Infinitives and Root Infinitive Analogues? What does it exactly mean that T in child grammar is not marked for tense or agreement? The findings discussed so far show the RIAs in Japanese, for example, are the verbs very young children produce when Tense element is missing. Japanese-speaking children under two, consistently, not optionally, produce just a single verb form, i.e., V-*ta* form. Just like other languages, no auxiliary-relative items or C-related items appear then. No nominative Case markers are produced either. The adverbials related to time such as *kinoo* (yesterday) are not used with the RIAs. These empirical facts lead us to conjecture that this is the stage where TP is missing. There are languages that do not project Tense such as Dravidian languages (Amritavalli and Jayaseelan 2005). According to Amritavalli and Jayaseelan (2005), the tense morphology that

appears on verbs in some clauses is more appropriately labeled aspect.

At around two, in contrast, children speaking Japanese start producing several conjugated verb forms as well as "erroneous" genitive/dative subjects just like English-speaking children do. At this stage, non-nominative subjects optionally appear in the subject position (e.g., *Her eat it* (She eats it.) in English). Just like English-speaking children, children speaking Japanese, for example, optionally mark the subject of the sentence "erroneously" with genitive or dative. Interestingly enough, this stage is observed in a lot of languages.

The sharp contrast found between the two phases of "Root Infinitives" shown above indicates that the so-called "Root Infinitive (Analogue) stage" actually has two stages. A natural hypothesis for the first stage would be to suppose that the sentences in which the (default) verb is not tensed might be those where TP is missing in the child structure as Truncation Hypothesis (Rizzi 1993/1994), for example, predicts. And the RIAs found at a later stage after two would correspond to the so-called Optional Infinitives. Optional Infinitives, or the infinitives optionally used in the matrix clauses, are produced when T is there, but Tense and Agreement features are underspecified as ATOM (Schütze and Wexler 1996) predicts.

The former stage of RIA can be explained neatly by the Truncation Hypothesis. The Truncation Hypothesis (Rizzi 1993/1994) states that children's structures can be as complex as adult structures, but child grammar allows the option of optionally truncating structures. To be more concrete, adults build their phrase structure all the way to CP because CP is the root of all clauses, while children might build just a VP or an IP (TP) and stop. According to Rizzi (1993/1994), the axiom that "CP is the root of all clauses" is part of adult grammar. Children, however, lack the specific knowledge that every well-formed clause is CP in adult grammar (until the initial stage of Root Infinitive stage in our term ends). Until children "acquire" the axiom, they hypothesize that phrase structures can only go partway up to CP.

This hypothesis clearly explains why the children's non-finite verbs do not move to I (T): There is no place for them to move to. This would also explain why auxiliary-related items never occur with Root Infinitives, if we assume that auxiliary-related items start in I (T). Under the Truncation Hypothesis, we also expect that there are no elements above IP (TP) that are produced by the children at the Root Infinitive stage. If Root Infinitives are missing IP (TP), then they should be missing CP as well, and the hypothesis naturally explains why C-related items are not observed at the stage in question.

The Truncation Hypothesis can also account for the licensing of null subjects in child grammar. Root Infinitives are likely to occur with null subjects because the infinitive is a non-finite form, which lacks Tense, and hence it can license null subjects of the type PRO.

Furthermore, we conjecture that the Truncation Hypothesis can also elegantly explain the reason why English-speaking children go through an early stage of acquisition during which

subjects are base-generated within VP and may optionally stay in their original position located internal to the predicate (Déprez and Pierce 1993).

It is very well known that English-speaking children, at around the age of two, produce negative sentences in which negative element occurs to the left of the subject as shown below.

(22)　a.　No mommy doing. David turn. (2;00)

　　　b.　No lamb have it. No lamb have it. (2;00)

　　　c.　No lamb have a chair either (2;00)

　　　d.　No dog stay in the room . Don't dog stay in the room. (2;01)

　　　e.　No Leila have a turn. (2;01)

　　　f.　Never Mommy touch it. (2;01)

　　　g.　Not man up here on him head. (2;02)

　　　h.　No my play my puppet. Play my toys. (2;02)

Déprez and Pierce (1993) argue that the pre-sentential negative element (e.g., *no*, *never*, *not*) is an instance of sentential negation. According to Déprez and Pierce (1993), there is a parameter of nominative Case assignment, and young children start producing such examples as (22) based on the assumption that nominative Case may be assigned under government by Infl (rather than the assumption that nominative Case is assigned in the Spec-head relation with Infl). Thus, children produce the sentence-initial negative element as sentential negation as shown in (22). According to Déprez and Pierce's (1993) analysis, the structure children hypothesize for (22a) is (23):

(23)　[$_{IP}$ ＿＿ [$_{NegP}$ no (negative element) [$_{VP}$ mommy doing]]]

Then, why is it the case that subject remains in the VP-internal position in child grammar? In the adult grammar, the arguments of the verb appear within the Verb Phrase but they may be forced to leave that position by different principles of grammar. If the principles are part of Universal Grammar (UG), then, we expect that the principles should be applied once the sentence in question (meeting the theta theory) is produced. However, children produce subjects VP-internally without raising it to the Spec of IP (TP).

Given the UG, a possible explanation for the acquisition stage of VP-internal subject in child grammar would be that there is no position for the subject, which is VP-internally base-generated, to move to. Children start producing subject in the VP-internal position because there is no IP (TP).[9] This is because the phrase structure children hypothesize is

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[9]　For a different analysis, see Sugisaki (2013).

truncated then. Thus, during the stage where the phrase structure is truncated, children produce such sentences as (22).

This proposal is further supported by the fact that the verbs that children produce exemplified in (22) are bare forms, or Root Infinitives. The fact that children producing subjects VP-internally without raising it to the Spec of IP (TP) also produce RIs would support the hypothesis that there is no I (T) projection at the stage.

However, a detailed analysis of child Japanese indicates that the case might not be so simple. As we noted above, if Root Infinitives (Analogues) are missing IP (TP), then they should be missing the syntactic heads above IP (TP) as well. Japanese-speaking children, however, do produce sentence-final particles at the RIA stage. The sentence-final particle, which resides in the position up above the CP layer in the adult grammar is apparently added on the "truncated" structure. Observe, for instance, (24).

(24) Buuwa tui-ta   **ne**   **ne** (Sumihare, 1;09)
       candle light-ta Sentence-final particle Sentence-final particle

       Intended meaning: Please light the candle.
       Literal meaning: The candle lit, didn't it?

(24) is quite interesting because the Japanese-speaking child Sumihare produces (i) the intransitive form *tuite* instead of the transitive form *tukete*, (ii) the V-*ta* form (RIA) instead of imperative form V-*te*, and crucially, (iii) the sentence-final particle *ne* followed by *tuita*, the RIA. Then, does such empirical evidence as (24) indicate that the RIA phenomenon cannot be explained by the Truncation Hypothesis? In the following section, based on the analysis that sentence-final particles are Speech Act heads, we argue that the early appearance of sentence-final particles does not constitute a counter example to the Truncation Hypothesis.

4.   The Co-occurrence of Sentence-final Particles with RIAs

Sentence-final particles are in fact produced often at a very early stage of Japanese acquisition. Okubo (1967), based on her longitudinal study with a Japanese-speaking child, finds that sentence-final particles such as *ne* are acquired much earlier than Case particles such as *ga*. Murasugi and Fuji (2008b) report that the Modal Reference Effects of RIAs are often observed with the sentence-final particle *na* as shown in (25).

(25) a. Pan   **naa** (1;05)
           bread   Sentence-final particle

           'I want a piece of bread.'

b. Sii **si-ta** **naa** (1;07)　(adult : **volition** *si-tai*)
　 pee　do-TA　Sentence-final particle

'(I) want to pee.'

c. Rii　　　**na**　　**na** (1;07)
　 go down　Sentence-final particle

'I want to go down.'
Context: Sumihare is on his father's shoulder. (Murasugi and Fuji 2008b)

The volition or modal in the early stage are expressed by the *-ta* form with the sentence-final particle *-na*.

There are languages that have particles (derived from a verb whose full lexical meaning has been lost) which are used to establish discourse relations between the speaker and the hearer (Haegeman and Hill 2011). According to Haegeman and Hill (2011), in West Flemish, a dialect of Dutch, for example, there are sentence-initial and sentence-final discourse markers, which encode the speaker's attitude with respect to the (content of the) speech act and/or with respect to the addressee. The discourse markers are optional in that an utterance remains grammatical even if they are removed, but their deletion results in a change in interpretation. There are some "rules" that sentence-final discourse markers in West Flemish obey.

First, sentence-final discourse markers in West Flemish co-occur only in a specified order. When sentence-final discourse marker *né* and *wè* co-occur, *né* must be to the right of *wè* shown in (26a) and (26b).

(26) a. Men artikel is gedoan <u>wè</u> <u>né</u>.

　　 b. *Men　artikel　is gedoan <u>né</u> <u>wè</u>.
　　　 My　paper　is done

　　　 'My paper is finished.' (Haegeman 2010)

When sentence-final discourse markers *zè* co-occurs with *né* or *wè*, *né* follows *zè* as shown in (27a,b) but *wè* precedes *zè* as in (28a,b).

(27) a. Men artikel is gedoan <u>zè</u> <u>né</u>.

　　 b. *Men artikel is gedoan <u>né</u> <u>zè</u>.

(28) a. Men artikel is gedoan <u>wè</u> <u>zè</u>.

　　 b. *Men artikel is gedoan <u>zè</u> <u>wè</u>. (Haegeman 2010)

Second, West Flemish has just two positions for discourse markers. Though *né* can

co-occur with *zè* as in (27a) and with *wè* as in (26a), and though *wè* can also co-occur with *zè* as in (28a), the three discourse markers cannot co-occur, regardless of the order, as we can see in (29).

(29) a. * Men artikel is gedoan w<u>è</u> z<u>è</u> n<u>é</u>.

   b. Men artikel is gedoan w<u>è</u> z<u>è</u>. N<u>é</u>! (Haegeman 2010)

(29b) is acceptable because *né* is clearly set off from the preceding segment.

Sentence-final discourse markers in West Flemish are not clause typers, and they co-occur with clauses that are independently typed. Though some of them are insensitive to clause type, others are sensitive to the type of the sentence. For example, *zè* (and its variant *ghè*) co-occurs mainly with declaratives and with some imperatives. With regard to interrogatives, only rhetorical questions can co-occur with *zè/ghè*.

The properties found in West Flemish are shared by Japanese sentence-final particles. Japanese has sentence-initial and sentence-final discourse markers, such as *ne*, which encode the speaker's attitude with respect to the (content of the) speech act and/or with respect to the addressee. The discourse markers are optional in that an utterance remains grammatical even if they are removed, but their deletion results in a change in interpretation.

There are also "rules" that sentence-final discourse markers in Japanese obey just as in West Flemish. The sentence-final particles such as *ne*, *na*, and *yo*, among others, are pragmatic markers used to profile the speaker-hearer relationship in Japanese. The particles are involved in the licensing of vocatives. The initial vocative has an "appeal" or attention seeking function, aiming at establishing a discourse relation; the final vocative consolidates the already established relation of the speaker with an "addressee". Examples are shown below:

(30) a. **Nee Nee** Otoosan, torampu siyoo **yo** (Koko, 8;03)
            NE   NE   Daddy   card   do-Vocative Sentence-final particle

      'Hey, Daddy, let's play cards.'

   b. Kono kootya-wa oisii **ne** (Koko, 8;03)
         this tea -Top yummy-is NE

      'This tea is tasty, isn't it?'

Just like West Flemish, the sentence-final particles display rigid ordering restrictions as shown in (31).

(31) a. Kobe-no   pan-wa   oisii <u>yo ne/yo na</u>.
         Kobe-Gen   bread-Top tasty

      'Kobe's bread is tasty.'

    b. * Kobe-no   pan-wa   oisii <u>ne yo/na yo</u>.

The sequences, *yone* and *yona*, are grammatical, but *neyo* or *nayo* are ungrammatical as shown in (31b). When sentence-final discourse markers *yo* and *ne* co-occur, *ne* must be to the right of *yo*.

Second, just like West Flemish, Japanese basically only has two positions for discourse markers. Though *yo* can co-occur with *ne* (32a) and with *na* (32b), the three discourse markers cannot co-occur, regardless of the order as we can see in (33):

(32) a. Taro-wa   mikan -o   taberu   <u>yo ne</u>.
         Taro-Top orange-Acc eat

    b. Taro-wa   mikan -o   taberu   <u>yo na</u>.
         Taro-Top orange-Acc eat

 (33) * Taro-wa   mikan -o   taberu   <u>yo ne na</u>.
          Taro-Top orange-Acc eat

      'Taro eats oranges.'

(33) is only acceptable when *na* is clearly set off from the preceding segment.[10] Just like sentence-final discourse markers in West Flemish, Japanese sentence-final particles are basically not clause-typers either, and they co-occur with clauses that are independently typed. For example, *yo* co-occurs mainly with declaratives and imperatives.

Now, the important question to be addressed here is whether the discourse markers are part of the CP system or not. In fact, it has been pointed out that the property of the right periphery of Japanese parallels with that of left periphery in head-initial languages such as Italian in many respects (Saito 2009), and the discourse markers such as *ne*, *na*, and *yo*, all seem to reside outside the CP system.

According to Saito (2009), *to* is the complementizer that heads a Report Phrase, which expresses paraphrases or reports of direct discourse in the sense of Plann (1982); *ka* is a head of Force Phrase (ForceP), for questions. And *no* is the complementizer that heads a Finite Phrase, for propositions. The structure is schematized below.

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[10] Three sentence-final particles are allowed only when *wa* comes first.

(i)   Anata asita   gakko-ni iku <u>wa yo ne</u>.
      You   tomorrow school-Dat go   WA YO NE

      'You are going to school tomorrow, aren't you?'

(34)　a.　[CP [CP… [CP… Finite (*no*)] Force (ka)] Report (to)]

　　　b.　[CP… [CP… [CP… [CP… Finite (no)] (Topic*)] Force (ka)] Report (to)]

　　　c.　[CP… [CP… [CP thematic topic [C'[CP [TP ...] Finite (no)] Topic]] Force (ka)] Report (to)]

And the discourse markers *ne*, *na*, and *yo* follow *ka*, which is the sentence-typer.

(35)　a.　[Force[Fin[TP Taroo-wa unagi-o taberu]　no　] ka]　**ne**
　　　　　　　　　　　　　　　-Top eel-Acc eat　　　Finite Force Sentence-final particle

　　　　　'I wonder whether or not Taro eats eels.'

　　　b.　[Force[Fin[TP Taroo-wa unagi-o taberu] no] ka] **na**

　　　c.　[Force[Fin[TP Taroo-wa unagi-o taberu] no] ka] **yo**

ForceP is a sentence typer, and if the sentence is interrogative, *ka* appears in the head of ForceP. As (35a-c) indicate, sentence-final particles follow *ka,* and this shows that the discourse markers are above ForceP at least. And children acquire such discourse markers as *ne* and *na* earlier than *no* or *ka*. Okada and Grinstead (2003), in fact, show that *ne* appears at 1;11, while *no* and *te* appear later in 2;02, and *ka* appears even later at 2;04, based on the corpus analysis of Aki (CHILDES).

　　　Sumihare at 1;06, for example, produces *na* quite clearly when he tries to speak to the addressee, and the observer (Noji) states that it is around then that the social and communicative skills of the child becomes noticeable. *Ne* is also a discourse marker observed at a very early stage of Japanese acquisition. Sumihare, for example, distinguishes *ne* from *na* just like adults do: He employs *na* when he talks to himself, while he employs *ne* when he talks to the addressee who holds him, as the contrast between (36b) and (36c) indicates:

(36)　a.　…**ne** (1;07)
　　　　　　Sentence-final particle

　　　　　'isn't it?' (Sumihare pronounces *ne* clearly.)

　　　b.　Tyun　　mien　　　　**naa** (talking to himself) (1;09)
　　　　　the plane is-not-visible sentence-final particle

　　　　　'(I) cannot see the plane.'

　　　c.　Tyun　　mien　　　　**ne** (talking to father, the addressee who holds him)(1;09)
　　　　　the plane is-not-visible sentence-final particle

　　　　　'(I) cannot see the plane.'

　　　In fact, it has been noted by many researchers that some of the discourse markers are

acquired at a very early stage of language acquisition. Shirai, Shirai and Furuta (1999), for instance, based on the corpus analysis of four Japanese monolingual children's longitudinal data (Aki 1;05-3;00, Ryo 1;03-3;00, Ari 1;06-3;00 and Kok 1;09-3;00 from CHILDES), observe that every child began to use sentence-final particles when their MLU (Mean Length of Utterances) was below 1.2 as shown in Table 4.

Table 4: Sentence-final particles each child began to produce (Shirai, Shirai and Furuta 1999)

Name	Age	MLU	SFPs
AKI	2;00	1.1	*ne, no*
RYO	1;10	1.1	*Ne*
ARI	1;06	1.2	*ne, yo, te, na*
KOK	1;09	1.1	*ne, no, yo, te, na*

Figure 3 shows when the four children came to use sentence-final particles and when they productively came to use them. The onset is marked by the root of an arrow, and the productive use is marked by the head.

Figure 3: The onset of sentence-final particles (Shirai, Shirai and Furuta 1999)
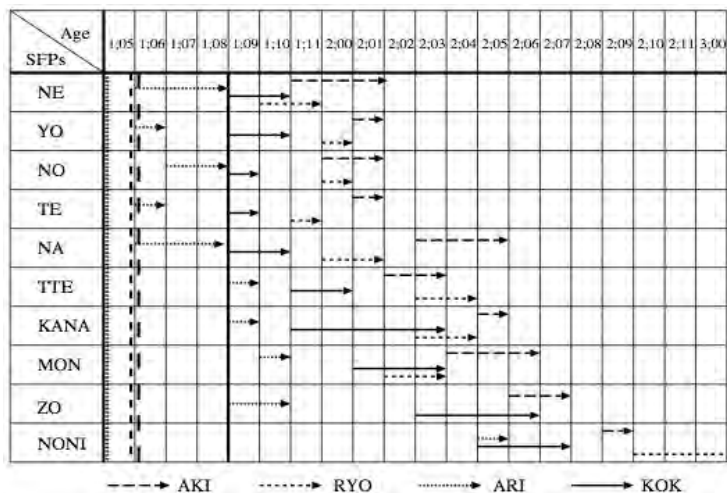
Here, most crucially, as shown in (37), the discourse markers are observed at the RIA Stage, before the full conjugation of the verbs appears in the production. The examples in (37) indicate that the discourse markers follow nominal elements, RIAs, and mimetic/ onomatopoeic expressions. Note here that *na* is used in the adult way as a separate item as shown in (37f) as well (just like *ne* in (36a)).

(37) a. Onbu   **na** (1;08)
          Hold-me-on-your back Sentence-final particle

          'Please hold me on your back.'

      b. Atti   i-ta   **na** (1;07) (volition) (talking to his mother, the addressee)
          over there   go-TA   Sentence-final particle

          '(I) want to go over there'

      c. Pan   **naa**   (1;05)
          bread   Sentence-final particle

          'I want a piece of bread.'

      d. Sii   **si-ta**   **naa** (1;07) (adult : **volition** *si-tai*)
          pee   do-TA   Sentence-final particle

          '(I) want to pee.'

      e. Rii   **na**   **na** (1;07)
          go down   Sentence-final particle

          'I want to go down.'
          Context: Sumihare is on his father's shoulder. (Murasugi and Fuji 2008b)

      f. ….**na** (talking to his daddy) (Sumiahre, 1;05)

Now, the question is why it is the case that such sentence-final particles as *ne* and *na* follow any syntactic constituent so productively. Crucially, it is intriguing that the sentence-final particles are produced as separate items, i.e., *ne* and *na* follow null phrases (as (36a) and (37f)) in child Japanese.

Here, note that the difference between the discourse markers in adult West Flemish and adult Japanese resides in the fact that the former has them at the sentence-initial or final position only[11], but the latter allows the discourse markers to be attached basically on any syntactic constituent.

(38) Neko(-ga)   **ne**, yane-kara **ne**, otita **ne**
      Cat (-Nom)   roof-from   fell

      'The cat fell from the roof.'

Japanese discourse markers can follow NPs, PPs, and VPs, and so on, as far as the structure constitutes a well-formed syntactic constituent. Then, the co-occurence of RIA with a sentence-final particle in child grammar would indicate that a discourse marker or a Speech

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[11] Thanks to Lillian Haegeman (p.c.) for the information.

Act element can be preceded by the truncated element or a child's syntactic constituent, even if there is no T head, and even if there is no phonetically realized sentence.

If Speech Act elements are acquired earlier than TP and CP, then, as we noted before, we expect that the sentence-final particles are acquired earlier than complementizers. In fact, this predication is borne out. Although it is well-known that *no*, the head of FiniteP in the CP layer*,* is acquired at a very early stage of language acquisition, it appears in child production later than such discourse markers as *na* and *ne*.

(39)   a. Nenne   ta   **noo** (Sumihare, 1;10)
             sleep   Past   NO

             '(I) am sleeping with my daddy.'

    b. Katai   **no** (Sumihare, 1;10)
             is-hard NO

             '(This candy) is (very) hard.'

    c. Katai yo   zya **no** (talking to his mother, the addressee) (1;10)
             hard   is   NO

             '(It) is very hard and difficult to take.'

    d. Teen   **no** (talking to his mother, the addressee) (1;10)
             mimetic   NO

             (Context: sitting on the Kotatsu)

    e. Tantan-wa? Tantan-wa, **no**, **no** (talking to his mother, the addressee) (1;10)
             Tantan-top   tantan-top   NO NO

             (Context: Putting a pencil on the floor near the window)

The observer Noji states that he does not understand the intended meaning of (39d) and (39e). However, the data at least show that *no* indicates the end point of the sentence. And they appear only after 1;10, much later than the stage where the discourse markers are produced. Furthermore, Sumihare produces such discourse markers as *ne* and *na* earlier than the head of ForceP *ka*, too. Exactly like what Okada and Grinstead (2003) find based on the corpus analysis of Aki (CHILDES), Sumihare starts producing *ka* at 2;03, much later than *ne* and *na*, and even after *no*.

Interestingly enough, sequences of two discourse markers (or sentence-final particles) such as *yo ne* start to appear a bit before *no* does in the production. Observe examples in (40).

(40) a. Atui   yo   ne (Sumihare, 1:09)
          hot   YO NE

          'It is hot, isn't it?'

      b. Hairan   yo   ne (Sumiare, 1;09)
          dosn't fit   YO NE

          '(The feet) do not fit (in the socks).'

      c. Oimo   oiti   yo   ne. (Sunmiare, 1;10)
          potato delicious   YO NE

          'The potatoes (are) delicious, aren't they?'

      d. Toofu   kita   yo   ne. (Sumihare, 1;11)
          Tofu   came   YO NE

          'A man selling Tofu came over, didn't he?'

At around the time children find out the nature of sentence-final particles, i.e., that more than one sentence-final particle can be attached to a phrase, the head of FinP and the verbal conjugations start to appear.

    Given these descriptive findings, let us come back to our original question. Does the early appearance of the sentence-final particles constitute a counter example to the Truncation Hypothesis because the sentence-final particles are the uppermost element above CP? A detailed analysis of child Japanese indicates that it is not the case.

    Japanese-speaking children do produce sentence-final particles at the RIA stage and the sentence-final particles look as if they are added on the "truncated" structures, or phases, as shown in (24), repeated below:

(41)(=(24)) Buuwa tui-ta   **ne**   **ne** (Sumihare, 1;09)
             candle light-ta Sentence-final particle Sentence-final particle

             Intended meaning: Please light the candle.
             Literal meaning: The candle lit, didn't it?

However, given that sentence-final particles follow any syntactic constituent in adult Japanese, and given the fact that child discourse markers not only follow various constituents but also appear as separate items as shown in (36a) and (37f), the child structure of the sentence-final particles following such a truncated phrase as an RIA would be something like (42).

(42)   [XP_____   ] *ne/na*
       X= Syntactic Constituent

XP is a well-formed syntactic constituent, and can be phonetically realized null in such an argument-drop language as Japanese. Children produce truncated sentences or a phonetically null form, followed by a discourse particle that links the speaker and the addressee. Tense Phrase is projected only at around the stage where two particles come to appear in a sequence as in (40) and several conjugation forms of verbs come to be used.

The analysis given above presupposes that the discourse markers or the elements above the CP layer are directly attached on the child RIAs. It should be mentioned here, however, that adult RIAs or tense-less phrases with strong speech act is somehow difficult to be selected by the discourse markers. In Japanese, the verb-*ta* form is RIA for both child grammar and adult grammar. Even in the adult grammar, V-*ta* forms, such as "*Kaetta! Kaetta!* (Go back! Go back!)" given in (11), for example, cannot be directly followed by such discourse markers as *ne* and *na*.

(43)　a.　Sassato　　　Kaet-**ta**!　　Kaet-**ta**!
　　　　　immediately go back-TA　go back-TA

　　　　　'Go back immediately.'

　　　b. * Sassato　　　　Kaet-**ta**　　**ne/na**!　　　　　　　Kaet-**ta** **ne/na**!
　　　　　immediately　　go back-TA　Sentence-Final Particle

　　　　　'Go back immediately.'

It is quite intriguing that children, unlike adults, use such sentence-final particles as *ne* and *na* with RIA at the age of one as shown in (25). Given our analysis so far, the co-occurrence of the child RIA and the sentence-final particles would be explained naturally by assuming that children do not fully know the syntactic properties of the sentence-final particles at the stage yet, although they know the pragmatic properties associated with them.

Before closing this section, it might be worth mentioning that a cross-linguistic data in support of the analysis presented so far can be also found. The emergence of discourse markers at a very early stage of language acquisition is commonly observed in child Chinese. According to Yang (2010), for example, Chinese-speaking children start producing discourse markers (sentence-final particles) such as *a* at around the age of one.

(44)　Qui a (1;04)
　　　ball Discourse-marker

　　　'It is the ball.'

The fact that the discourse markers are probably produced earlier than the RIA (the imperative form) and the tense/aspect marker *le* supports the analysis presented in this

paper.[12]

Children's phrase structures are truncated. However, the Truncation Hypothesis does not entail that young children do not know the semantic/pragmatic properties of the uppermost element in the phrase structure. The evidence from Japanese indicates that children in fact know the semantic/pragmatic properties of the discourse elements and use them just like adults even at the age of one. Just like a jigsaw puzzle, children would assemble the border pieces first to get a defined area to work in. Information regarding discourse relations can thus guide the child to identify the missing tense-related items between the Speech Act Phrase and the truncated structure. This leads us to suggest that "discourse bootstrapping" should be probably added to the child's toolkit.

5. Conclusion

In this paper, based on children's production of discourse markers and RIAs in Japanese and Chinese, we presented evidence for the Truncation Hypothesis proposed by Rizzi (1993/1994) for children's early syntactic structure.

We argued that Root Infinitives (RIs) and Root Infinitive Analogues (RIAs) are non-finite (infinitival) verbal forms which children at around one to two years of age use in matrix (root) clauses, where they are not possible in their adult grammar, and that there are two stages: (i) the stage where there is no T-projection, and (ii) the stage where TP is projected, but the features of Tense/Agreement are yet underspecified.

Note here that the forms of child RI(A)s *per se* are not different from adult ones. As Akmajian (1984) first drew attention to "mad magazine sentences," infinitive constructions are used in matrix contexts in adult English and adult Spanish, for example.

(45)   a.   Me go to that party?! I would never do such a thing! (English)

       b.   John go to the movies?! No way, man!

(46)   Yo ir a esa fiesta?! Jamás! (Spanish) (Etxepare and Grohmann 2005)

Mad magazine sentences or adult RI(A)s consist of two overtly expressed parts: the Root Infinitive proper, orthographically indicated by '?!' (evoking a question-like exclamation), and the Coda (a further exclamation that seems to deny the truth value of the mad magazine sentences) (Etxepare and Grohmann 2005). Child Chinese RIAs are in fact imperatives in adult Chinese; child Japanese RIAs are strong imperatives (and past declaratives) in adult Japanese; child Korean RIAs are modal phrases in adult Korean. Child RIAs are possible "well-formed" verbs in the adult grammar.

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[12] See Murasugi and Nakatani (2005, 2007) and Dejima, Nakatani and Murasugi (2009) for evidence based on their longitudinal studies that the properties of Speech Act Phrase are found even at the babbling stage in Japanese acquisition.

The very young children's use of non-finite verbs in root contexts is a universal phenomenon. Whether or not the target language is *pro*-drop or argument-drop, children universally go through the very early non-finite verb stage. Yet, there are morphological variations: RI(A)s can be infinitives, bare verbs, participles, or certain (surrogate) full forms. The morphological parameter that determines whether or not the stem can stand by itself is acquired at the very early stage of language acquisition. This finding indicates that even during the stage where the phrase structure is truncated, very young children know the morphological property of the target language. Without being directly taught by caretakers, children voluntarily express the intentional and extensional meanings by picking up their first verbal forms among the possible non-finite forms in their mother tongue. The early emergence of the morphological knowledge would constitute an important ground for the proposal of the inborn grammatical principles, parameters, and the Universal Grammar (Chomsky 1965, Huang 1982).

The only difference between child grammar and adult grammar is in that (i) the child root clause is not CP like adults', but the phrase structure may be truncated, as Rizzi (1993/1994) argues, at a very early stage of grammar acquisition until around two or so, and (ii) even after TP comes to be projected after the age of two, features in Tense/Agreement are underspecified initially, thereby genitive subjects or quirky subjects (which are not possible in the adult target grammar) are optionally used with the optional infinitives, as Schütze and Wexler (1996) suggest. With regard to the trigger for children to attain the adult axiom that "CP is the root of all clauses", we suggested in this paper that acquiring the possible selection of sentence-final particles might bootstrap the children's knowledge of the missing part in their syntactic structure.

The argument led us to a suggestion for the learnability theory. For children to acquire their mother tongue, "discourse bootstrapping" would be employed to acquire the full syntactic structure. Syntactic and semantic bootstrapping would be useful toolkits for children to acquire language in a bottom-up way, while discourse bootstrapping would be a useful toolkit for children to acquire the full syntactic structure in a top-down way.

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CONDITIONS ON JAPANESE PHRASE STRUCTURE: FROM MORPHOLOGY TO PRAGMATICS [*]

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1. Introduction

The elimination of phrase structure rules in favor of X'-theory was made possible by proposals of independent principles that yield much of the information stipulated in the formulation of those rules. It is currently assumed in the Minimalist research that phrase structure is constructed by the minimal operation Merge, which takes two syntactic objects and forms their union. (See Chomsky 1995a, 2012.) Needless to say, Merge, taken by itself, vastly overgenerates. It is then examined how certain derivations crash and fail to generate outputs. It is also assumed that some derivations converge, but send information to the C-I or P-A interface that can only be interpreted as gibberish. The purpose of this paper is to examine four phenomena in Japanese that might fall under the latter case.

The phenomena that I take up are (i) the uniqueness condition on modals, (ii) the transitivity harmony phenomenon on complex verb formation, (iii) the hierarchy of complementizers, and (iv) the distributions of discourse particles. The following section concerns modals. Ueda (2007), among others, shows that a Japanese clause can contain at most one modal. I argue that this should be attributed to the selectional properties of the modals. Many are verbal suffixes and morphologically select V or V-*v* (m-selection). The others semantically select T (s-selection). Then, if a modal merges with a ModalP to yield a structure with two modals, a problem arises either with morphology or with s-selection. In Section 3, I discuss what Kageyama (1993) calls lexical complex verbs, instantiated in (1).

(1) Taroo-ga   ana-ni suberi-oti-ta
    Taroo-NOM hole-to slip-fall-Past

   'Taroo slipped and fell into a hole'

He demonstrates that those complex verbs must consist of two verbs that are uniform with respect to the presence/absence of an external θ-role. For example, an unergative verb can combine with a transitive verb or with another unergative verb, but not with an unaccusative verb. I first argue that a characteristic property of those complex verbs is that each of the

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[*] I would like to thank Tomoko Haraguchi for helpful discussions. Section 2 is based on discussions with her, and Section 5 is a summary of our joint paper, Saito and Haraguchi (2012). I also benefited from the comments and suggestions of many other people, including Norbert Hornstein, Richie Kayne, Hideki Kishimoto, Keiko Murasugi, Paul Portner, Ian Roberts, and Kensuke Takita.

component verbs independently participates in the selectional relations in the syntax. Then, I show that Kageyama's generalization follows from the s-selection requirements of v^*/v.

I turn to the hierarchy of complementizers in Section 4. It is shown in Saito (2012) that the three complementizers *no*, *ka* and *to* are in the hierarchical relation *no* (Finite) < *ka* (Force - question) < *to* (Report), as illustrated in (2).

(2) Taroo-wa [CP [CP [CP kare-no imooto-ga soko-ni i-ta   (no)] ka] (to)] minna-ni
     Taroo-TOP   he-GEN sister-NOM there-at be-Past *no ka to* all-DAT
     tazune-ta
     inquire-Past

    'Taroo asked everyone *if* his sister was there'

I suggest that this hierarchy reflects the semantics of those complementizers as well as the s-selection requirement of *no*. Section 5 concerns discourse particles as in (3).

(3) Hanako-wa   soko-ni i-ta   (wa) (yo) (ne)
    Hanako-TOP there-at be-Past *wa yo ne*

    'Hanako was there, wasn't she?'

These discourse particles are associated with specific speech acts; *wa* and *yo* are employed for assertion and *ne* solicits response. As discussed by Endo (2010), among others, they too exhibit a hierarchy. For example, the three particles in (3) must appear in the order indicated. I argue, along the lines of Saito and Haraguchi (2012), that *wa* occupies the lowest position as it s-selects T and that *ne* must follow *yo* for the composit speech act to be coherent.

If the discussion in this paper is on the right track, Japanese phrase structure is heavily constrained by morphology and s-selection, as well as by semantic and speech act compatibility. This is observed in a wide range of phenomena from complex verbs to discourse particles. There is no need to stipulate specific constraints or to postulate specific hierarchical structures to capture the observed generalizations.

2. The Uniqueness Condition on Modals in Japanese

In the Japanese syntax literature, 'modal' often refers to a category of the clause-final elements that express modality or force and do not carry tense. Ueda (2007) classifies them in the two groups shown in (4).

(4) a. E(pitemic)-modals: *daroo* (surmise), *desyoo* (formal surmise), *mai* (negative surmise)

   b. U(tterance)-modals: *ro/e* (imperative), *(i)nasai* (formal imperative), *na* (negative imperative), *yoo* (invitation), *(i)masyoo* (formal invitation), *yoo* (volition), *mai* (negative volition)

She assumes the hierarchy in (5), and at the same time, observes that two modals cannot co-occur in the same clause. The observation is confirmed by the examples in (6).

(5)   [U-modalP [E-modalP [TP … T] E-modal] U-modal]

(6) a.   Kimi-wa soko-e ik-u   daroo (*na)
         you-TOP there-to go-Pres. will   don't

         'Don't go there (Don't be going there)'

    b.   Taroo-wa soko-e ik-u   mai (*daroo)
         Taroo-TOP there-to go-Pres. won't   will

         'Taroo won't go there (I guess Taroo won't go there)'

I argue in this section that this uniqueness condition on modals follows from their lexical properties.[1]

   It should be noted here that English modals exhibit a similar uniqueness condition. Thus, (7a) is totally out although it is synonymous with the grammatical (7b).

(7) a. *John may can solve the problem

    b.   John may be able to solve the problem

It has long been observed that English modals can occur only in finite contexts and hence, cannot follow another modal. This suggests that they have a morphological requirement to merge with an affixal tense. I assume that a similar approach should be pursued for the parallel case in Japanese. Yet, the situation is slightly different as Japanese modals, by definition, do not carry tense.

   First, it seems plausible that all the modals in (4) take propositional complements. Propositions can take the syntactic forms of a *v*P (as in small clauses), a TP and a ModalP, for example. Then, this by itself does not exclude the multiple occurrences of modals in (6). However, each modal has additional lexical requirements. Let's examine the imperative *ro/e* first. This element is a suffix that attaches to verb stems. As shown in (8), *ro* is employed for verb stems that end in vowels and *e* for those that end in consonants.

(8) a.   Taroo-wa   sore-o tabe-ro
         Taroo-TOP it-ACC eat-Imp.

         'Taroo, eat it'

---

[1] The material in this section developed out of discussions with Tomoko Haraguchi over the last couple of years. See Haraguchi (2012) for an analysis that is different but shares the same general approach.

b. Taroo-wa   soko-ni ik-e
Taroo-TOP there-to go-Imp.

'Taroo, go there'

The suffixal nature of *ro/e* automatically limits its distribution. For example, if it takes a TP complement, then T intervenes and blocks its morphological merger with the verb, as illustrated in (9).

(9) a. *Taroo-wa   sore-o   tabe-ru-ro
    Taroo-TOP it-ACC eat-Pres.-Imp.

b.
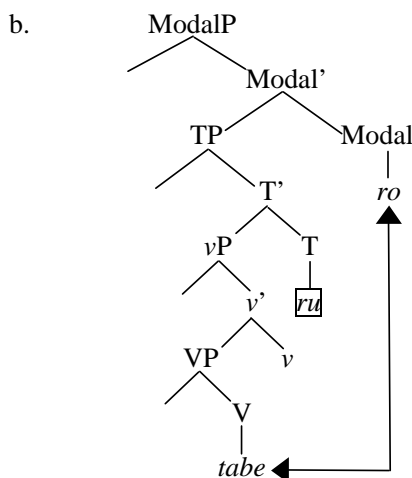
The only morphologically permissible option is for it to take a *v*P complement. In this case, the suffix can successfully merge with V (or V-*v* complex). Significantly, *ro/e* cannot take a ModalP as its complement because the intervening modal blocks the morphological merger just like T. There is an independent reason then that *ro/e* cannot follow another modal.

Most of the other utterance modals have the same suffixal property. Among them are *(i)nasai* (formal imperative), *yoo* (invitation, volition), and *(i)masyoo* (formal invitation). Examples of *(i)masyoo* are shown in (10).[2]

(10) a. Sore-o   tabe-masyoo
     it-ACC eat-let's

     'Let's eat it'

---

2 The form *masyoo* appears when the verb stem ends in a vowel, and *imasyoo* when the verb stem ends in a consonant. I assume that the morpheme is *imasyoo*, and that the initial vowel of the suffix is deleted by the following morphophonological rule when the stem ends in a vowel:

(i)   V → Ø / V + __ C

b. Soko-e ik-imasyoo
   there-to go-let's

   'Let's go there'

I conclude then that they all must take *v*P complements in order to morphologically merge with V.

The epistemic modals *daroo* (surmise) and *desyoo* (formal surmise) also exhibit a regular pattern. They always take a TP complement. The head T can be present or past, and can be a verbal tense (*ru/ta*) or an adjectival tense (*i/katta*). This is shown in (11).

(11) a.   Taroo-wa   sore-o tabe-ru /tabe-ta daroo
          Taroo-TOP it-ACC eat-Pres./eat-Past will

     'I guess Taroo eats/ate it'

   b.   Soko-no   huyu-wa   samu-i   /samu-katta daroo
         there-GEN winter-TOP cold-Pres./cold-Past   will

     'I guess the winter there is/was cold'

(12) shows that they cannot be employed as verbal or adjectival suffixes.[3]

(12) a. *Taroo-wa   sore-o tabe-daroo
          Taroo-TOP it-ACC eat-will

     'I guess Taroo eats it'

   b. *Soko-no   huyu-wa   samu-daroo
       there-GEN winter-TOP cold-will

     'I guess the winter there is cold'

Thus, *daroo* (and *desyoo*) takes a tensed proposition as a complement and s-selects T. It follows that they cannot have a ModalP as a complement.

The situation with *na* (negative imperative) is slightly more complex but is similar. It takes a TP with verbal present tense as its complement. The following examples meet this condition:

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[3] There is another modal *karoo*, which is similar in meaning to *daroo* but is a suffix that attaches to adjectival stems. Thus, (12b) becomes grammatical when *karoo* is substituted for *daroo* as in (i).

(i) Soko-no   huyu-wa   samu-karoo
    there-GEN winter-TOP cold-will

   'I guess the winter there is cold'

(13) a. Taroo-wa   sore-o tabe-ru   na
    Taroo-TOP it-ACC eat-Pres. don't

    'Taroo, don't eat it'

  b. Taroo-wa   soko-ni ik-u na
    Taroo-TOP there-to go-Pres. don't

    'Taroo, don't go there'

(14) shows that *na* is not a verbal suffix and also cannot take TPs headed by past or adjectival present.

(14) a. *Taroo-wa   sore-o   tabe-na
    Taroo-TOP it-ACC   eat-don't

    'Taroo, don't eat it'

  b. *Taroo-wa   sore-o   tabe-ta na
    Taroo-TOP it-ACC   eat-Past don't

  c. *Taroo-wa   kimuzukasi(-i) na
    Taroo-TOP difficult(-Pres.) don't

    'Taroo, don't be difficult'

It appears then that *na* selects for a specific subcategory, verbal present tense. But this requirement is plausibly s-selection rather than categorial selection (c-selection).

 It is well known that verbal present tense *ru* is more precisely characterized as indicating non-past. Thus, it occurs also in future contexts as in (15).

(15) a. Hanako-wa asita   wani-o   tabe-ru
    Hanako-NOM tomorrow alligator-ACC eat-Pres.

    'Hanako is going to eat alligator meat tomorrow'

  b. Taroo-wa   rainen soko-ni ik-u
    Taroo-TOP next.year there-to go-Pres.

    'Taroo is going there next year'

This extension to future contexts, as far as I know, is not observed with the adjectival present *i*. (16a-b) are ungrammatical.

(16) a. *Taroo-wa   asita   kimuzukasi-i
    Taroo-TOP tomorrow difficult-Pres.

    'Taroo will be difficult tomorrow'

b. *Watasi-wa asita   kanasi-i
   I-NOM   tomorrow sad-Pres.

   'I will feel sad tomorrow'

Then, it can be hypothesized that *na* s-selects future tense.

The distribution of *mai* (negative volition, negative surmise) is similar. The following examples indicate that it s-selects future tense just like *na*.

(17) a. Watasi-wa sore-o   tabe-ru   mai
       I-TOP   it-ACC eat-Pres. won't

     'I will not eat it'

  b. Watasi-wa soko-ni ik-u   mai
       I-TOP   there-to go-Pres. won't

     'I will not go there'

  c. *Watasi-wa sore-o   tabe-ta mai
      I-TOP   it-ACC eat-Past won't

  d. *Watasi-wa kanasi(-i) mai
      I-TOP   sad-Pres. won't

     'I will not feel sad'

But there is another pattern observed with *mai*, as in (18).

(18) Watasi-wa sore-o tabe-mai
     I-TOP   it-ACC eat-won't

   'I guess Taroo won't eat it'

In this example, *mai* is suffixed to the verbal stem *tabe*. Curiously, *mai* cannot be suffixed to a verb stem that ends in a consonant. Thus, an example parallel to (18) cannot be formed with (17b). Here, I tentatively propose that the verbal suffix is not *mai* but *(u)mai*. Then, the example with this suffix that corresponds to (17b) is homophonous with (17b) as in (19).[4]

(19) Watasi-wa soko-ni ik-umai
     I-TOP   there-to go-won't

   'I will not go there'

This concludes the discussion of all modals listed in (4). It was shown that most of them

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[4] The suffix is *umai* uniformly. When it is merged with *tabe* as in (18), the initial *u* is deleted according to the morphophonological rule suggested in Footnote 2.

are verbal suffixes and hence, must take *v*P complements so that morphology can interpret them. *Daroo* (surmise) and *desyoo* (formal surmise) s-select T and must take TP complements. A similar pattern is observed with *na* (negative imperative) and *mai* (negative volition, negative surmise), which s-select T with future tense. It follows then that no modal can take a ModalP as a complement.[5] This accounts for the uniqueness condition on modals. Ueda (2007) groups the elements in (4) under the category Modal in part because they are in complementary disctribution. But given the analysis suggested here, it is no longer clear that they form a natural class. As shown in the subsequent sections, the complementizer *no* and the discourse particle *wa* s-select T, and hence, are in complementary distribution with the elements in (4). This, however, does not show that they belong to the category Modal. This state of affairs is expected under the bare phrase structure theory where there are no "fixed positions" for categories and Merge applies freely to two syntactic objects. It is simply that the formed structure must meet the requirements of morphology and s-selection, and this forces some elements to be in complementary distribution.

3. The Transitivity Harmonony Phenomenon in Lexical Complex Verbs

This section concerns Kageyama's (1993) generalization in (20) on Japanese lexical complex verbs.

(20) The transitivity harmony principle
     In a complex verb V_1+V_2, V_1 and V_2 must be consistent with respect to the presence/absence of an external θ-role.

This generalization states that if one of the component verbs is unaccusative, the other one must also be unaccusative. Thus, it distinguishes the transitive-transitive combination in (21a) and the unaccusative-transitive combination in (21b).

(21) a. Hanako-ga   Taroo-o   osi-taosi-ta
        Hanako-NOM Taroo-ACC push-make.fall-Past

        'Hanako pushed Taroo and made him fall'

   b. *Taroo-ga   kuzira-o   ukabi-mi-ta
       Taroo-NOM whale-ACC float-see-Past

       'A whale came to the surface and Taroo saw it'

Kageyama shows that there are three kinds of complex verbs in Japanese, aside from those that are idiosyncratically formed and pattern with simple verbs, and demonstrates that (20) applies to one of them, which he calls lexical complex verbs. I first briefly go over this qualification, and then, argue that (20) is to be explained by the s-selection requirements of

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[5] Two modals can appear, although not adjacently, in a structure like V-*v*-(T)-Modal-(X)-V-*v*-(T)-Modal. But the two modals belong to different clauses in this structure.

v*/*v*.

Kageyama (1993) first distinguishes between syntactic and lexical complex verbs. In the former, V_1 and V_2 project separate VPs, and V_2 takes the VP headed by V_1 (or the corresponding *v*P) as its complement. Typical examples are shown in (22), and the structure of (22a) is as in (23).[6]

(22) a. Hanako-ga   Taroo-ni   wani-o   tabe-sase-ta
        Hanako-NOM Taroo-DAT alligator-ACC eat-make-Past

      'Hanako made Taroo eat alligator meat'

    b. Taroo-ga   wani-o   tabe-hazime-ta
       Taroo-NOM alligator-ACC eat-start-Past

      'Taroo started to eat alligator meat'

(23)
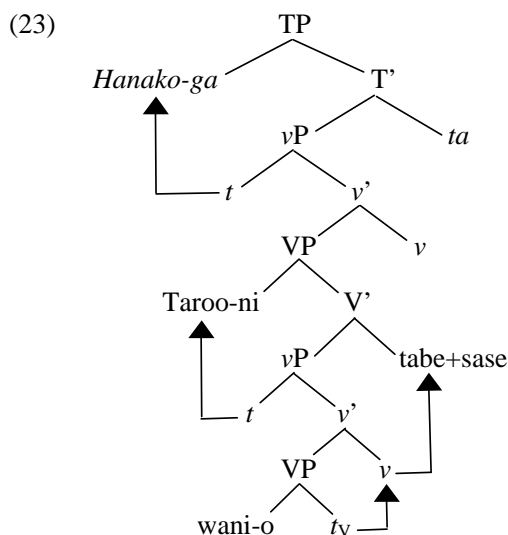
According to Kageyama, the complex verb *tabe-sase* is formed by the incorporation of *tabe* into *sase*.

One piece of evidence Kageyama provides for his analysis is that the pro-VP (or V') form *soo su* 'do so' can substitute for the VP (or V') headed by V_1. Thus, the following examples are grammatical:

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[6] (23) differs from the structure Kageyama posits in the details, but the crucial point is that *tabe* 'eat' and *sase* 'cause' both project VPs. It has been widely assumed since Kuroda (1965) that *sase* takes a clausal complement of some kind. The best known evidence is that in a causative sentence, the causer and the causee both qualify as the antecedent of the subject-oriented long-distance reflexive *zibun*. Here, I follow Murasugi and Hashimoto (2004), and assume that *sase* takes a *v*P complement.

(24) a. Hanako-ga   Taroo-ni   soo s-ase-ta
        Hanako-NOM Taroo-DAT so   do-make-Past

    'Hanako made Taroo do so'

   b. Taroo-ga   soo si-hazime-ta
       Taroo-NOM so   do-start-Past

    'Taroo started to do so'

Lexical complex verbs, on the other hand, are formed in the lexicon and project a single VP, according to Kageyama. Examples are provided in (25).

(25) a. Taroo-ga   ana-ni suberi-oti-ta
        Taroo-NOM hole-in slip-fall-Past

    'Taroo slipped and fell into a hole'

   b. Hanako-ga   me-o   naki-harasi-ta
       Hanako-NOM eye-Acc cry-make.swollen-Past

    'Hanako cried and made her eyelids swollen'

Although the complex verbs in (22) and (25) look similar on the surface, they pattern differently with *soo su* substitution. As shown in (26), *soo su* cannot substutute for V$_1$ or its projection in the case of (25).

(26) a. *Taroo-ga   (ana-ni) soo si-oti-ta
         Taroo-NOM hole-in so   do-fall-Past

   b. *Hanako-ga   (me-o)   soo si-harasi-ta
        Hanako-NOM eye-ACC so   do-make.swallen-Past

This is expected if the complex verb is formed in the lexicon and V$_1$ does not project an independent VP.

Kageyama (1993) shows that lexical complex verbs are subject to the transitivity harmony principle in (20). (27) lists some examples.

(27) a. <u>transitive-transitive</u>: *hiki-nuk* 'pull-pull.out', *nigiri-tubus* 'grasp-crash', *tataki-otos* 'knock-drop', *kiri-tor* 'cut-remove', *uke-tome* 'receive-catch'

   b. <u>unergative-unergative</u>: hasiri-yor (run-go.close.to), tobi-ori (jump-go.down), kake-nobor (run-climb), aruki-mawar (walk-go.around), mure-tob (form.a.flock-fly)

   c. <u>unaccusative-unaccusative</u>: suberi-oti (slip-fall), ukabi-agar (float-rise), umare-kawar (be.born-change), huri-sosog (fall-flow)

    d. <u>transitive-unergative</u>: moti-aruk (carry-walk), sagasi-mawar (look.for-go.around), mati-kamae (wait-hold)

    e. <u>unergative-transitive</u>: naki-haras (cry-make.swollen), nori-kae (ride-change), nomi-tubus (drink-waste), odori-akas (dance-stay.up.all.night)

Ungrammatical examples that do not conform to (20) are shown in (28)-(31).

(28) a. *Taroo-ga   kuzira-o   ukabi-mi-ta (unaccusative+transitive)
       Taroo-NOM whale-ACC float-see-Past

       'A whale came to the surface and Taroo saw it'

    b. *Kareha-ga   zimen-o   oti-kakusi-ta
       dead.leaf-NOM ground-ACC fall-hide-Past

       'Dead leaves fell and covered the ground'

(29) a. *Hanako-ga   Taroo-o   osi-taore-ta (transitive+unaccusative)
       Hanako-NOM Taroo-ACC push-fall-Past

       'Hanako pushed Taroo and Taroo fell'

    b. *Hanako-ga   wain-o   nomi-yot-ta
       Hanako-NOM wine-ACC drink-get.drunk-Past

       'Hanako drank wine and got drunk'

(30) a. *Kodomo-ga kaika-ni   asobi-oti-ta (unergative+unaccusative)
       child-NOM downstairs-to play-fall-Past

       'A child played and fell downstairs'

    b. *Hanako-ga   undoozyoo-de hasiri-koron-da
       Hanako-NOM field-in   run-tumble-Past

       'Hanako ran and tumbled in the field'

(31) a. *Taroo-ga   kaika-ni   oti-ori-ta (unaccusative+unergative)
       Taroo-NOM downstairs-to fall-go.down-Past

       'Taroo fell and went downstairs'

    b. *Kodomo-ga karyuu-ni   nagare-oyoi-da
       child-NOM downstream-to be.carried-swim-Past

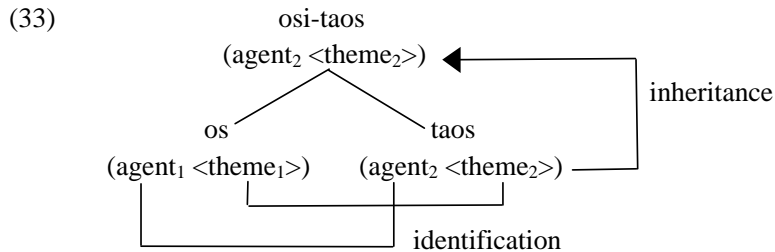   'A child was carried and swam downstream'

  The transitivity harmony phenomenon, just illustrated, poses an interesting question. (20)

clearly is not a plausible candidate for a universal, innate principle on word formation. In fact, as Kageyama notes, it is not universally observed with lexical complex verbs. For example, Chinese compound verbs do not exhibit the phenomenon. The following examples are from Huang (1982):[7]

(32) a. Ta he-zui   (jiu) le
          he drink-get.drunk wine Asp.

      'He drank (wine) and got drunk'

   b. Ta qi-lei-le   lianpi ma
          he ride-tired-Asp. two   horse

      'He rode two horses and got them tired'

At the same time, it is hard to imagine that Japanese speakers acquire (20) as a language-specific constraint through experience. Then, (20) is expected to be a consequence of a property of Japanese lexical complex verbs. But before going into this, let me briefly go over Kageyama's analysis of those complex verbs and also illustrate his third kind of complex verbs.

    Kageyama proposes that Japanese lexical complex verbs are formed through θ-role identification. His analysis of *osi-taos* 'push-make.fall' in (21a) is shown in (33).

(33)   osi-taos
                ($agent_2$ <$theme_2$>) ◄──────────┐
                      ╱   ╲   │ inheritance
                   os   taos   │
         ($agent_1$ <$theme_1$>)   ($agent_2$ <$theme_2$>) ──┘
                      └────┬────┘
                   identification

The two component verbs, *os* and *taos*, have their own θ-roles. The agent roles of the two verbs are identified, and so are their theme roles. After this θ-role identification, the complex verb inherits the argument structure of the head, *taos*. Given this mechanism, the transitivity harmony principle can be construed as a constraint on θ-role identification: if a component verb has an external θ-role, it must be identified with the external θ-role of the other verb.

    There is another kind of lexical complex verbs, according to Kageyama, that are formed through a different process. Typical examples are shown in (34).

(34) a. Hanako-ga   Taroo-o   heya-ni oi-kon-da (transitive+*kom*)
          Hanako-NOM Taroo-ACC room-in chase-KOM-Past

      'Taroo was chased by Hanako into the room'

---

[7] See Li (1993) for a detailed comparison of Chinese and Japanese complex verbs.

b. Taroo-ga   kawa-ni tobi-kon-da (unergative+*kom*)
Taroo-NOM river-to   jump-KOM-Past

'Taroo jumped into the river'

c. Osensui-ga   umi-ni   nagare-kon-da (unaccusative+*kom*)
contaminated.water-NOM ocean-to flow-KOM-Past

'Contaminated water flowed into the ocean'

These examples show that the verbal suffix *kom* can combine with any kind of verb. It appears then that complex verbs of the form V+*kom* are not subject to transitivity harmony. However, the issue does not arise in this case because *kom*, at least with its meaning in (34), is not an independent verb with its own θ-roles.[8] *Kom* can be suffixed to the verb when the sentence indicates that a person or an object moves, and it adds the meaning that the person or the object moves to the location specified in the sentence. Kageyama, then, concludes that *kom* adds to the lexical-conceptual structure of the verb it is suffixed to. The complex verbs that are formed in this way are lexical complex verbs, but I refer to them as LCS complex verbs in order to distinguish them from those that are subject to transitivity harmony.

With this background, let me now consider the source of the transitivity harmony phenomenon. As noted above, the phenomenon is expected to follow as a consequence of a property of Japanese lexical complex verbs. The relevant property does not seem to be semantic. For example, there does not seem to be anything semantically wrong if lexical complex predicates are formed in ways inconsistent with transitivity harmony. The illicit *ukabi-mi* 'surface-see' and *oti-kakus* 'fall-hide' in (28) can be straightforwardly formed as in (35) under Kageyama's analysis.

(35) a.

b.
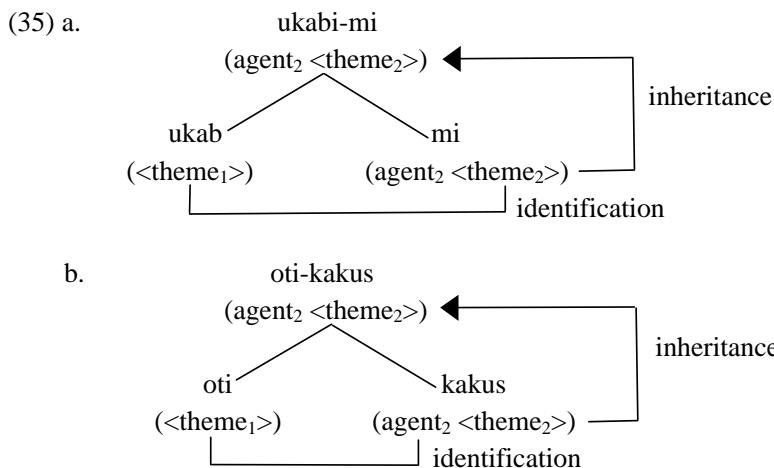
The relevant property cannot be morphological, either. Lexical complex verbs are not morphologically different from syntactic complex verbs or LCS complex verbs. Then,

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8 There is an independent verb *kom*, which means 'become crowded'.

transitivity harmony is likely to be a reflection of a syntactic property of lexical complex verbs.

Kageyama's analysis illustrated in (33) suggests a curious property of those complex verbs. Because of θ-role identification, the argument structures of V_1 and V_2 are both projected in the syntax. Let us consider again (21a), repeated below as (36).

(36) Hanako-ga   Taroo-o   osi-taosi-ta
    Hanako-NOM Taroo-ACC push-make.fall-Past

    'Hanako pushed Taroo and made him fall'

In this example, *Hanako* is the agent of *os* as well as *taos*, and *Taroo* serves as the theme for both verbs. Further, Kageyama makes an important observation that the arguments of a lexical complex verb must satisfy the selectional requirements of both V_1 and V_2. His relevant examples are shown in (37)-(38) with slight modifications.

(37) a. Tuta-ga   boo-ni   maki-tui-ta
       ivy-NOM stick-to wind-attach-Past

       'An ivy twined around the stick'

    b. Abura-ga kabe-ni simi-tui-ta
       oil-NOM   wall-to   soak-attach-Past

       'The wall was stained with oil'

(38) a. *Tuta-ga   boo-ni   simi-tui-ta
       ivy-NOM stick-to soak-attach-Past

       'The stick was stained with an ivy'

    b. *Abura-ga kabe-ni maki-tui-ta
       oil-NOM   wall-to   wind-attach-Past

       'The oil twined around the wall'

(38a) is ungrammatical because an ivy cannot soak into a stick, and (38b) because oil cannot twine around a wall. These examples demonstrate that both V_1 and V_2 enter into selectional relations with the arguments.

If V_1 and V_2 are both visible in the selectional relations with the arguments, they must also participate in the selectional relations with v^*/v, as illustrated in (39) for (36).

(39) a.   [$_{VP}$ Taroo [$_V$ [$_V$ osi]-[$_V$ taos]]]

b. [$_{v'}$ [$_{VP}$ Taroo [$_V$ [$_V$ osi]-[$_V$ taos]]] v*]
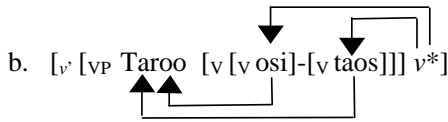
It has been widely assumed since Chomsky (1995b) that v* s-selects transitive/unergative V while v s-selects unaccusative V. The selectional requirement of v* is satisfied in (39b) as both *os* 'push' and *taos* 'make.fall' are transitive. But note that a lexical complex verb can meet the selectional requirements of v*/v when and only when the complex verb obeys the transitivity harmony principle in (20). Since each member of the complex verb enters into selectional relations with v*/v, v* requires that both members be transitive or unergative and v demands that both be unaccusative. Hence, the transitivity harmony follows from the s-selection requirements of v*/v.

In this section, I argued that a characteristic property of Japanese lexical complex verbs is that each component verb participates in selectional relations, and given this, Kageyama's (1993) transitivity harmony phenomenon follows from the s-selection requirements of v*/v.[9] In the following two sections, I discuss cases where semantic and speech act compatibility contributes to the well-formedness of sentences.

4. The Hierarchy of Japanese Complementizers

Japanese has three complementizers, *no*, *ka* and *to*, as illustrated in (40).

(40) a. Taroo-wa [$_{CP}$ Hanako-ga   soko-ni i-ru   <u>no</u>]-o   sittei-ta
         Taroo-TOP   Hanako-NOM there-in be-Pres. *no*-ACC know-Past

   'Taroo knew *that* Hanako was there'

   b. Taroo-wa [$_{CP}$ Hanako-ga   sono hon-o   mottei-ru <u>ka</u>] siritagattei-ru
         Taroo-TOP   Hanako-NOM that book-ACC have-Pres. *ka* want.to.know-Pres.

   'Taroo wants to know whether Hanako has that book'

   c. Taroo-wa [$_{CP}$ Hanako-ga   sono hon-o   mottei-ru <u>to</u>] omottei-ru
         Taroo-TOP   Hanako-NOM that book-ACC have-Pres. *to* think-Pres.

   'Taroo thinks that Hanako has that book'

These complementizers can co-occur as in (41), and when they do, they appear in the order indicated.

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[9] The next question to be addressed is why Japanese productively employs complex verbs with this property. See Saito (to appear) for some discussion on this.

(41) Taroo-wa [CP kare-no imooto-ga   soko-ni i-ta   (no) ka (to)] minna-ni tazune-ta
　　 Taroo-TOP   he-GEN sister-NOM there-at be-Past *no ka to*   all-DAT   inquire-Past

　　 'Taroo asked everyone *if* his sister was there'

Given this, I proposed the hierarchy in (42) in Saito (2012).

(42)　 [CP … [CP … [CP … Finite (*no*)] Force (*ka*)] Report (*to*)]

　　 (42) predicts that the complementizer sequences in (43a) are allowed while those in (43b) are not.

(43) a. *no-ka, ka-to, no-ka-to*

　　 b. **to-ka, ka-no, to-no, to-ka-no, ka-to-no*

　　 c. **no-to*

There is, however, one sequence, *no-to* in (43c), that is consistent with the hierarchy in (42) and yet is illicit. Thus, (44) is ungrammatical.

(44) *Taroo-wa [CP kare-no imooto-ga   soko-ni i-ru   no to] kitaisi-ta
　　　Taroo-TOP   he-GEN sister-NOM there-at be-Pres. *no to* expect-Past

　　 'Taroo expected his sister to be there'

The purpose of this section is to provide an explanation for the hierarchy in (42), and at the same time, to account for the exception in (43c).

　　 It is necessary to discuss the properties of each complementizer first in order to examine the source of their hierarchical relations. *Ka* is straightforward as it is the complementizer for questions. *No* and *to*, on the other hand, require some discussion. Let's consider *to* first.

　　 To is ambiguous between a marker of direct quotation as in (45a) and a complementizer that embeds indirect discourse as in (45b).

(45) a. Hanako-ga,　"Watasi-wa tensai da," to it-ta   /omot-ta   (koto)
　　　　 Hanako-NOM I-TOP　　　 genius be *to* say-Past/think-Past fact

　　　 '(the fact that) Hanako said/thought, "I'm a genius"'

　　 b. Hanako-ga [zibun-ga tensai da to] it-ta   /omot-ta   (koto)
　　　　 Hanako-NOM self-NOM genius be *to* say-Past/think-Past fact

　　　 '(the fact that) Hanako said/thought that she is a genius'

In the latter case, it has been widely assumed that *to* is employed for propositional complements as it appears when the matrix verb is a typical bridge verb like *iw* 'say' and

omow 'think'. However, I argued in Saito (2012) that *to* embeds a paraphrase or report of direct discourse. Plann (1982) shows that the Spanish complementizer *que* has this function. What I proposed is that *to* is specialized for this function. One piece of evidence is that the matrix verbs that s-select *to* are all verbs of saying and thinking, that is, verbs that are compatible with direct quotation. A partial list of those verbs is shown in (46).

(46)   *omo-u* 'think', *kangae-ru* 'consider', *sinzi-ru* 'believe', *i-u* 'say', sakeb-u 'scream', *syutyoosu-ru* 'claim, insist', *tazune-ru* 'inquire', *kitaisu-ru* 'expect, hope', *kakuninsu-ru* 'confirm', *kanzi-ru* 'feel'   (all in present tense)

Secondly, *to* embeds various types of sentences just like *que*. *To* follows a question in (47a), imperative sentences in (47b-c), and an expression of invitation in (47d).[10]

(47) a.   Taroo-wa   Ziroo-ni   [CP kanozyo-ga kare-no ie-ni   ku-ru   <u>ka to</u>] tazune-ta
         Taroo-TOP Ziroo-DAT   she-NOM   he-GEN house-to come-Pres. *ka to* ask-Past

         'Taroo asked Ziroo if she is coming to his house'

    b.   Hanako-wa   Taroo-ni   [CP kanozyo-no ie-ni   i-ro   <u>to</u>] meizi-ta
         Hanako-TOP Taroo-DAT   she-GEN   house-at be-Imp. *to* order-Past

         'Hanako ordered Taroo to be at her house'

    c.   Hanako-wa   Taroo-ni   [CP kanozyo-no ie-ni   ik-u-na   <u>to</u>] meizi-ta
         Hanako-TOP Taroo-DAT   she-GEN   house-to go-Pres.-don't *to* order-Past

         'Hanako ordered Taroo not to go to her house'

    d.   Hanako-wa   Taroo-o   [CP kanozyo-no ie-ni   ik-oo   <u>to</u>] sasot-ta
         Hanako-TOP Taroo-ACC   she-GEN   house-to go-let's *to* invite-Past

         'Hanako invited Taroo to go to her house'

This is unexpected if *to* is a complementizer for propositional complements. On the other hand, the examples in (47) should be grammatical if *to* embeds paraphrases of direct discourse. A direct discourse, and hence its paraphrase, can be a question, an order or an invitation, in addition to a simple statement.

Then, what is the complementizer for embedded propositions in Japanese? It is argued in Saito (2012) that *no* is employed for this purpose. (48) is a partial list of matrix verbs that take CP complements headed by *no*.

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[10] Plann (1982) demonstrates that *que* can take a question CP as a complement when the matrix verb is a verb of saying or thinking. She argues, based on this fact, that *que* can embed a paraphrase of a quotation. Rivero (1994) shows in support of Plann's analysis that *que* takes an imperative complement as well.

(48) *wasure-ru* 'forget', *kookaisu-ru* 'regret', *mi-ru* 'see', *mat-u* 'wait', *tamera-u* 'hesitate', *kyohisu-ru* 'refuse', *ukeire-ru* 'accept', *kitaisu-ru* 'expect, hope', *kakuninsu-ru* 'confirm', *kanzi-ru* 'feel' (all in present tense)

All of these verbs take complements that express events or actions. For example, what one forgets is an event or to perform an action. What one hesitates is to perform an action and what one waits for is for an event to happen. Then, they take propositional complements.

Matsumoto (2010) argues that *no* is a Finite head, a hypothesis originally proposed by Hiraiwa and Ishihara (2002). If *no* is the complementizer for propositions, it should in principle be able to embed a ModalP, as a ModalP can stand for a proposition. However, Matsumoto observes that *no* s-selects T and is incompatible with modals. This is shown in (49)-(50).

(49) a. Taroo-wa   [CP [TP ame-ga   hur-u]   <u>no</u>]-o   kitaisi-ta
       Taroo-TOP   rain -NOM fall-Pres. *no*-ACC expect-Past

   'Taroo hoped that it would rain'

   b. *Taroo-wa   [CP [ModalP ame-ga   hur-u   daroo] <u>no</u>]-o   kitaisi-ta
       Taroo-TOP   rain-NOM fall-Pres. will   *no*-ACC expect-Past

   'Taroo hoped that it would rain'

(52) a. Taroo-wa   [CP [TP ame-ga   hur-u]   <u>no</u>]-o   yosoosi-ta
       Taroo-TOP   rain-NOM fall-Pres. *no*-ACC predict-Past

   'Taroo predicted that it would rain'

   b. *Taroo-wa   [CP [ModalP ame-ga   hur-u   mai] <u>no</u>]-o   yosoosi-ta
       Taroo-TOP   rain-NOM fall-Pres. won't *no*-ACC predict-Past

   'Taroo predicted that it would not rain'

Finite, by definition, is closely related to Tense. Then, the fact that *no* s-selects T, Matsumoto (2010) argues, provides evidence that it is a Finite head.

Let us now consider the hierarchy in (42), repeated in (53), with this background.

(53)   [CP … [CP … [CP … Finite (*no*)] Force (*ka*)] Report (*to*)]

The fact that *no* occupies the lowest position in the hierarchy already follows from its s-selection requirement. As it s-selects T, it cannot take a CP complement. On the other hand, *ka* and *to* are not in selectional relation with any specific head. *Ka*, for example, merges with a syntactic object that stands for a proposition and creates a question. A proposition can be expressed as a *v*P, a TP, a ModalP or a CP. *Ka* can take a TP, a ModalP and a CP as its complement, as shown in (54).

(54) a. Taroo-wa [_{CP} [_{TP} Hanako-ga   soko-ni it-ta]   ka] minna-ni tazune-ta
        Taroo-TOP   Hanako-NOM there-to go-Past *ka* all-DAT ask-Past

        'Taroo asked everyone if Hanako went there'

    b. Taroo-wa [_{CP} [_{ModalP} Hanako-ga   soko-ni ik-u   daroo] ka] minna-ni tazune-ta
        Taroo-TOP   Hanako-NOM there-to go-Pres. will   *ka* all-DAT ask-Past

        'Taroo asked everyone if Hanako would go there'

    c. Taroo-wa [_{CP} [_{CP} Hanako-ga   soko-ni it-ta   no] ka] minna-ni tazune-ta
        Taroo-TOP   Hanako-NOM there-to go-Past *no* *ka* all-DAT ask-Past

        'Taroo asked everyone if Hanako went there'

(54c) is the most relevant for the hierarchy in (53), which allows the *no-ka* sequence. As argued above, *no* is the complementizer for embedded propositions and a CP headed by *no* stands for a proposition. Hence, *ka* can merge with a *no*-headed CP as in (54c).

The merger of *v*P and *ka* should be possible on semantic grounds but is excluded by morphology. A verb stem is a dependent morpheme and requires a suffix such as tense. As *ka* cannot serve as an appropriate suffix for a verb stem, it cannot take a *v*P complement. Also, *ka* cannot combine with ModalPs and CPs that do not stand for propositions. Thus, the following examples are totally ungrammatical:

(55) a. *Taroo-wa [_{CP} [_{ModalP} Hanako-ga   soko-ni ik-e]   ka] minna-ni tazune-ta
        Taroo-TOP   Hanako-NOM there-to go-Imp. *ka* all-DAT ask-Past

    b. *Taroo-wa [_{CP} [_{CP} Hanako-ga   soko-ni it-ta   to] ka] minna-ni tazune-ta
        Taroo-TOP   Hanako-NOM there-to go-Past *to* *ka* all-DAT ask-Past

The embedded ModalP in (55a) expresses an order, and that in (55b) a paraphrase of direct discourse. These are examples of semantic incompatibility as *ka* requires a complement that stands for a proposition. (55b), in particular, illustrates why the complementizer sequence *to-ka* is impossible.

It was shown so far why *no-ka* is possible wheras *ka-no* and *to-ka* are not. It is necessary to review the property of *to* in order to examine the other combinations. It was argued above that *to* embeds a paraphrase of direct discourse. This complementizer, like *ka*, does not s-select any specific head, and can combine with various types of clauses as long as its semantic requirement is satisfied. It was already shown in (40c) and (47) that *ka* can take a TP, a CP and a ModalP as its complement. Most relevant in the present context is (47a), repeated below as (56).

(56) Taroo-wa   Ziroo-ni   [CP [CP kanozyo-ga kare-no ie-ni   ku-ru   ka] to] tazune-ta
     Taroo-TOP Ziroo-DAT   she-NOM   he-GEN house-to come-Pres. *ka to* ask-Past

    'Taroo asked Ziroo if she is coming to his house'

As the paraphrased direct discourse can be a question, *to* can take a question CP as its complement. A direct discourse, or an utterance, can express a statement, an assertion, a question, an order, and the like. It is then not surprising that *to* can embed various types of clauses. Outstanding in this context is the ungrammaticality of (44), repeated below as (57).

(57) *Taroo-wa   [CP kare-no imooto-ga   soko-ni i-ru   <u>no to</u>] kitaisi-ta
     Taroo-TOP   he-GEN sister-NOM there-at be-Pres. *no to* expect-Past

    'Taroo expected his sister to be there'

This example indicates that *to* cannot take a *no*-headed CP as its complement. Recall here that *no*-headed CPs stand for propositions, and express events, states, actions and the like. Then, they cannot be construed as paraphrases of direct discourse. The *no-to* sequence is illicit also because of semantic incompatibility.

In this section, I argued that the hierarchical relation among the complementizers, *no*, *ka* and *to*, follows from the s-selection requirement of *no* and the semantics of these complementizers. *No*, which is the complementizer for embedded propositions, s-selects T. Hence, it occupies the lowest position in the hierarchy. *Ka* merges with clauses that stand for propositions and creates questions. Hence, the *no-ka* sequence is possible. *To* embeds paraphrases of direct discourse. Since the paraphrased direct discourse can be a question, the *ka-to* sequence is also possible. This covers all the possible combinations, *no-ka*, *ka-to*, and *no-ka-to*. On the other hand, the *ka-no* and *to-no* sequences are both in conflict with the s-selection requirement of *no*. The *to-ka* sequence is ruled out because a *to*-headed CP does not stand for a proposition. Thus, the hierarchy in (53) is precisely what is expected. The only exception to the hierarchy is that the *no-to* sequence is illicit. This fact too receives an account because a *no*-headed CP cannot express a paraphrase of direct discourse. In the following section, I turn to the distributions of sentence-final discourse particles, another phenomenon for which a hierarchy is proposed.

5. Discourse Particles and Speech Act Compatibility

Japanese is rich in sentence-final particles. Endo (2010) discusses four of them in some detail; *wa*, *yo*, *ne* and *na*. Roughly speaking, the first two are employed for assertion, and the latter two for solicitation of response. As Endo observes, their distributions are quite interesting because some of them can co-occur but only in a fixed order. For example, (58) contains three particles, and they must appear in the order indicated.

(58) Hanako-wa   soko-ni i-ta   (wa) (yo) (ne)
      Hanako-TOP there-at be-Past *wa   yo   ne*

      'Hanako was there'

In this section, I investigate the source of this hierarchy.[11]

First, as Haraguchi (2012) shows, these particles are genuine discourse elements whose distributions are confined to matrix contexts. Thus, they cannot occur even within *to*-headed CPs, which embed various types of clauses as observed above.

(59) a.   Hanako-wa [$_{CP}$ Taroo-wa   kanozyo-no ie-ni   i-ru   (*wa) to] omot-ta
          Hanako-TOP   Taroo-TOP she-GEN   house-at be-Pres. *wa to* think-Past

          'Hanako thought that Taroo is at her house'

   b.   Hanako-wa [$_{CP}$ Taroo-ga   kanozyo-o tasukete kure-ru   (*yo) to] kitaisi-ta
        Hanako-TOP   Taroo-TOP she-ACC   help (for her)-Pres. *yo to* expect-Past

        'Hanako expected Taroo to help her'

Nevertheless, *wa*, in particular, has an s-selection requirement. It takes a TP complement as shown in (60).[12]

(61) a.   Watasi-wa soko-ni ik-u   wa / it-ta   wa
          I-TOP   there-to go-Pres. *wa* go-Past *wa*

          'I will go there / I went there'

   b.   Taroo-wa   yasasi-i   wa / yasasi-katta wa
        Taroo-TOP kind-Pres. *wa*   kind-Past   *wa*

        'Taroo is kind / Taroo was kind'

Wa follows verbal tenses (*ru/ta*) in (61a) and adjectival tenses (*i/katta*) in (61b).

On the other hand, *wa* cannot merge with a CP or a ModalP. (62a) shows that *wa* is incompatible with a CP complement, and (62b-c) that it cannot take a ModalP as its complement.

(62) a.   Taroo-wa   soko-ni ik-u   no (*wa)
          Taroo-TOP there-to go-Pres. *no   wa*

          'Taroo will go there'

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[11] The content of this section is based on joint research with Tomoko Haraguchi and is reported in more detail in Saito and Haraguchi (2012).

[12] *Wa* is typically employed in women's speech.

b. Taroo-wa soko-ni ik-e   (*wa)
   Taroo-TOP there-to go-Imp. *wa*

   'Taroo, go there'

c. Hanako-wa ku-ru   desyoo (*wa)
   Hanako-TOP come-Pres. will   *wa*

   'Hanako will come'

Then, *wa* s-selects T. This predicts that *wa* must occupy the lowest position in a sequence of discourse particles. It indeed cannot follow any discourse particle, as shown in (63).

(63) a. Hanako-wa soko-ni i-ta   yo (*wa)
        Hanako-TOP there-at be-Past *yo* *wa*

        'Hanako was there'

   b. Hanako-wa soko-ni i-ta   ne (*wa)
      Hanako-TOP there-at be-Past *ne* *wa*

      'Hanako was there, wasn't she?'

Although *yo* is also employed for assertion, it exhibits a different distribution. It allows various clause types as its complement, and as Tenny (2006) notes, it can be translated roughly as 'I'm telling you …' It takes TP complements in (64) and ModalP complements in (65).

(64) a. Taroo-wa soko-ni i-ru   yo / i-ta   yo
        Taroo-TOP there-at be-Pres. *yo* be-Past *yo*

        'Taroo is there / was there'

   b. Taroo-wa yasasi-i   yo / yasasi-katta yo
      Taroo-TOP kind-Pres. *yo* kind-Past   *yo*

      'Taroo is kind / was kind'

(65) a. Taroo-wa soko-ni ik-e /   ik-inasai yo
        Taroo-TOP there-to go-Imp. go-Imp. *yo*

        'Taroo, go there'

   b. Soko-ni ik-oo /   ik-imasyoo yo
      there-to go-Inv. go-Inv.   *yo*

      'Let's go there'

The examples in (66) show that *yo* can follow the complentizer *no* and the discourse particle *wa*.

(66) a. Hanako-wa   soko-ni i-ru   no yo
        Hanako-TOP there-at be-Pres. *no yo*

        'Hanako is there'

   b. Hanako-wa   soko-ni i-ru   wa yo
        Hanako-TOP there-at be-Pres. *wa yo*

        'Hanako is there'

Yo clearly does not have any s-selection requirement, and given this, it is not surprising that it can follow another discourse particle.

   Na and *ne*, which solicit response, are similar to *yo* in distribution. Here, I provide some examples for *ne*.

(67) a. Taroo-wa   yasasi-i   ne
        Taroo-TOP kind-Pres. *ne*

        'Taroo is kind, isn't he?'

   b. Taroo-wa soko-ni ik-inasai ne
        Taroo-wa there-to go-Imp. *ne*

        'Taroo, go there. Will you?'

   c. Soko-ni ik-imasyoo ne
        there-to go-let's   *ne*

        'Let's go there. Shall we?'

   d. Taroo-wa   yasasi-i   no ne
        Taroo-TOP kind-Pres. *no ne*

        'Taroo is kind, isn't he?'

   e. Taroo-wa   yasasi-i   wa ne
        Taroo-TOP kind-Pres. *wa ne*

        'Taroo is kind, isn't he?'

What appears in the complement position of *ne* is a TP in (67a), a ModalP in (67b-c), a CP in (67d), and a sentence headed by the speech act particle *wa* in (67e). Thus, *ne* does not s-select a specific head, either.

   As Keiko Murasugi observes, there is clear evidence that *wa* and the other discourse particles differ in selectional properties. *Yo*, *ne* and *na* can appear not only sentence-finally but after any major constituent. (68) illustrates this with *ne*.

(68) Taroo-ga   ne soko-ni ne i-te   ne …
      Taroo-NOM *ne* there-at *ne* be-and *ne*

      'It's Taroo, alright? It's there, alright? He was there, alright? And, …'

This is consistent with the proposal that *ne* does not s-select any head. *Wa*, on the other hand, cannot be used in this way as it s-selects T.

    Nevertheless, there are restrictions on the complements of *yo*, *ne* and *na*. For example, *ne* and *na* can follow *yo*, but *yo* cannot follow them. Further, *ne* and *na* are mutually exclusive. Relevant examples are shown in (69)-(70).

(69) a. Hanako-wa   soko-ni i-ta   yo ne/na
         Hanako-NOM there-at be-Past *yo ne/na*

         Hanako was there, wasn't she?'

    b. *Hanako-wa   soko-ni i-ta   ne/na yo
        Hanako-NOM there-at be-Past *ne/na yo*

(70) a. *Hanako-wa   soko-ni i-ta   ne na
        Hanako-NOM there-at be-Past *ne na*

        Hanako was there, wasn't she?'

    b. *Hanako-wa   soko-ni i-ta   na ne
        Hanako-NOM there-at be-Past *na ne*

        Hanako was there, wasn't she?'

Then, descriptively, the hierarchy in (71) obtains.

(71)   [[[TP *wa*] *yo*] *ne*/*na*]

As argued above, *wa* must occupy the lowest position because it s-selects T. I suggest that the rest should be accounted for in terms of the speech acts these particles yield.

    First, *yo* is employed for assertion, and hence, its complement must be capable of expressing an assertion. The following examples demonstrate this.

(72) a. [$_{CP}$ Dare-ga   soko-ni ik-u   ka] yo
            who-NOM there-to go-Pres. *ka yo*

         'Who will go there? = No one will go there'

    b. [$_{CP}$ Taroo-ni   nani-ga   deki-ru   ka] yo
            Taroo-DAT what-NOM can.do-Pres. *ka yo*

         'What can Taroo do? = Taroo can't do anything'

A question can be interpreted at the discourse level as a literal question or as a rhetorical question. However, when a question is embedded under *yo* as in (70), only the rhetorical question interpretation survives. This is expected because a rhetorical question expresses an assertion while a literal question does not. The situation is different with *ne* and *na*, which solicit response. (73a-b), unlike (72a-b), retain the ambiguity.

(73) a. [_CP_ Dare-ga   soko-ni ik-u   ka] ne
        who-NOM there-to go-Pres. *ka ne*

    'Who will go there? / (I think) No one will go there. What do you think?'

   b. [_CP_ Taroo-ni   nani-ga   deki-ru   ka] ne
        Taroo-DAT what-NOM can.do-Pres. *ka ne*

    'What can Taroo do? / (I think) Taroo can't do anything. What do you think?'

This should be because a response can be solicited on a question or an assertion.

Given the observation above, it is not at all surprising that the *yo-ne/na* sequence is allowed while the *ne/na-yo* sequence is not. *Yo* combines with an expression of assertion and reinforces the speech act. It is then possible to solicit a response on the assertion by placing *ne/na* after *yo*. On the other hand, *ne/na* adds the speech act of soliciting a response. A sentence with these particles is in fact best translated as a tag question. But it was seen above that the complement of *yo* cannot express a literal question for the simple reason that a question cannot be asserted. Thus, the hierarchical relation between *yo* and *ne/na* is predicted from their discourse roles.

The final question to be addressed is why *ne* and *na* cannot co-occur, as was shown in (70). Although I do not have a clear-cut answer for this, I would like to make a suggestion, based on an observation in Endo (2010). Endo notes that *na* is appropriate when talking to onself whereas *ne* is not. Let's compare the following two examples:

(74) a. Dekake-ta   na
       go.out-Past *na*

    'It looks like she/he went out'

   b. Dekake-ta   ne
       go.out-Past *ne*

    'You/she/he went out, didn't you/he/she?'

Suppose that you go home alone and find that your roommate is not there. Then, you could utter (74a), talking to yourself. (74b) is inappropriate in this context. On the other hand, suppose that you go home with your friend. Then, you could say (74b) to your friend, referring to your roommate. Or (74b) can be addressed to your roommate when she/he comes home. This suggests that *na* solicits a response from the discourse participants including the

speaker, while *ne* seeks a response from those excluding the speaker. *Na* can be employed when talking to oneself, as there is a discourse participant to whom the utterance can be addressed, namely, the speaker. *Ne* has no function in this context. If this characterization of *ne* and *na* is correct, then they should be mutually exclusive because their discourse functions are not compatible.

6. Conclusion

As discussed in this paper, interesting constraints and hierarchies have been proposed and entertained in the recent investigation of Japanese syntax. Ueda (2007) examines Japanese modals in detail and entertains the constraint that a clause can contain at most one modal. Kageyama (1993) proposed an influential constraint on lexical complex verb formation, namely, the transitivity harmony principle in (20). Saito (2012) observes the hierarchy of Japanese complementizers in (42), repeated below in (75).

(75) [$_{CP}$ … [$_{CP}$ … [$_{CP}$ … Finite (*no*)] Force (*ka*)] Report (*to*)]

Endo (2010), on the other hand, examines the hierarchy of discourse particles, which can be formulated as in (76).

(76) [[[TP *wa*] *yo*] *ne*/*na*]

These constraints and hierarchies constitute facts to be explained in the Minimalist syntax. The same is true of any alternative proposals at the same descriptive level.

In this paper, I explored the possibility that they are consequences of the properties of the relevant lexical items. In Section 2, I showed that Japanese modals are either suffixes or s-select T, and argued that the uniqueness condition follows from these lexical properties. In Section 3, I proposed that a characteristic property of Japanese lexical complex verbs is that their component verbs participate in selectional relations. Given this, Kageyama's (1993) constraint on those complex verbs can be explained in terms of the s-selection requirements of $v*/v$. In Section 4, I argued that the hierarchy of complementizers in (75) is a consequence of the s-selection requirement of *no* and the semantics of the complemetizers. Finally, in Section 5, I suggested that the discourse particles are hierarchically organized as in (76) because *wa* s-selects T and any other ordering of *yo*, *ne* and *na* causes a contradiction in the composit speech act.

The case studies reported here are by no means exhaustive. But taken together, they suggest that there is no need to postulate constraints or hierarchies for Japanese phrase structure as the relevant facts are derived from lexical properties. This supports the Minimalist hypothesis that all that is required for phrase structure building is the minimal operation, Merge.

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1. Introduction

Japanese is a language that allows productive use of null arguments in finite clauses. In (2), which constitutes replies to the question in (1), either the matrix subject or the matrix object is not overtly expressed. Similarly, in (3), both the subject and the object of the embedded clause are phonologically empty.

(1)   Taroo-wa   doo   shimashita   ka?
           Taroo-TOP   how   did   Q

           'What happened to Taroo?'

(2)   a.   *e*   ano   kaisya-ni   syuusyoku   shimashita.
                    that   company-DAT   employment   did

              'He got employed by that company.'

    b.   Ano   kaisya-ga   *e*   saiyou   shimashita.
                    that   company-NOM   recruitment   did

              'That company recruited him.'

(3)   Hanako-ga   Taroo-ni   [*e* *e* saiyou   suru   to]   yakusokusita.
           Hanako-NOM   Taroo-DAT   recruitment do   that   promised

           'Hanako promised Taroo that she will recruit him.'

It has been observed at least since Otani and Whitman (1991) that null objects in Japanese allow sloppy-identity interpretation when their antecedent contains the anaphor *zibun* 'self'. For example, the sentence with an empty object in (4b) is ambiguous: It means either that Ken respects Taroo's mother (strict-identity interpretation) or that Ken respects his

own mother (sloppy-identity interpretation). Oku (1998) observes that the same is true with null subjects: The missing embedded subject in (5b) can be construed either as Taroo's child or as Ken's own child.[1]

(4)   a. Taroo-wa   zibun-no   hahaoya-o   sonkeisiteiru.
          Taroo-TOP   self-GEN   mother-ACC   respect

          'Taroo$_1$ respects his$_1$ mother.'

      b. Ken-mo   *e*   sonkeisiteiru.
          Ken-also   respect

          Lit. 'Ken respects *e*, too.'

(5)   a. Taroo-wa [zibun-no   kodomo-ga   eigo-o   hanasu   to]
          Taroo-TOP   self-GEN child-NOM   English-ACC   speak   that
          omotteiru.
          think

          'Taroo$_1$ thinks that his$_1$ child speaks English.'

      b. Ken-wa   [*e*   furansugo-o   hanasu   to] omotteiru.
          Ken-TOP   French-ACC   speak   that   think

          Lit. 'Ken thinks that *e* speaks French.'

In order to account for the availability of sloppy interpretation, a number of syntactic studies have proposed that Japanese permits ellipsis of argument DPs (e.g. Oku 1998; Saito 2003, 2007; Takahashi 2008). According to this 'Argument Ellipsis' analysis, the sloppy interpretations for (4b) and (5b) stem from the structures containing full-fledged DPs, and these argument DPs are elided under identity with their antecedent DPs, as shown in (6b) and (7b).

(6)   a. Taroo-wa   zibun-no   hahaoya-o   sonkeisiteiru.
          Taroo-TOP   self-GEN   mother-ACC   respect

      b. Ken-mo   ~~zibun-no~~   ~~hahaoya-o~~   sonkeisiteiru.
          Ken-also   self-GEN   mother-ACC   respect

(7)   a. Taroo-wa [zibun-no   kodomo-ga   eigo-o   hanasu   to]
          Taroo-TOP   self-GEN child-NOM   English-ACC   speak   that
          omotteiru.
          think

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[1] The same observation holds for null subjects and null objects in Korean. See Kim (1999) and Saito and An (2010) for a detailed discussion.

b. Ken-wa   [~~zibun-no~~   ~~kodomo-ga~~   furansugo-o   hanasu   to]
Ken-TOP   self-GEN   child-NOM   French-ACC   speak   that
omotteiru.
think

This study demonstrates experimentally that Japanese-speaking preschool children permit the sloppy-identity interpretation both for null subjects and null objects, thereby suggesting that the knowledge of Argument Ellipsis is already in their grammar. This finding will be further corroborated by the experimental observation that, in contrast to arguments, children do not permit ellipsis of adjuncts. In addition, it will also be demonstrated experimentally that children do not allow *wh*-phrases to undergo Argument Ellipsis. These findings together point to the conclusion that Japanese-speaking preschool children already have completely adult-like knowledge of Argument Ellipsis, which is consistent with the view that the availability of Argument Ellipsis and its constraints directly follows from the properties of biologically-determined Universal Grammar (UG).

This paper is organized as follows. In Section 2, we overview evidence for postulating Argument Ellipsis in Japanese, and in Section 3, we summarize two major approaches to the cross-linguistic variation in Argument Ellipsis. In Section 4, we draw a certain prediction from these parametric proposals for the acquisition of Argument Ellipsis, and in Section 5 and 6, we evaluate this prediction by conducting an experiment. Section 7 reports results of an experiment investigating children's knowledge of the constraint that adjuncts cannot undergo ellipsis, and Section 8 is dedicated to the experiment examining children's knowledge of the ban on eliding *wh*-phrases. Section 9 briefly concludes the discussion.

2. Argument Ellipsis in Japanese

The availability of sloppy interpretation for an empty object is unexpected if the object position is occupied by a null pronoun *pro*, since pronouns typically do not permit sloppy-identity interpretation, as exemplified in (8b).

(8)   a.   Taroo-ga   zibun-no   konpyuutaa-o   kowasita.
Taroo-NOM   self-GEN   computer-ACC   destroyed

'Taroo$_1$ destroyed his$_1$ computer.'

b.   Hanako-mo   sore-o   kowasita.
Hanako-also   it-ACC   destroyed

'Hanako$_2$ also destroyed his$_1$ computer.' /
* 'Hanako$_2$ also destroyed her$_2$ computer.'

In order to account for the availability of sloppy interpretation for null objects in Japanese, Otani and Whitman (1991) built on Huang's (1991) study on Chinese null objects, and put forth the analysis in which the relevant interpretation of (8b) stems from VP-ellipsis. One of

the fundamental assumptions of their analysis is that Japanese has overt V-to-T raising, and hence the sentences in (8) are represented as in (9) in overt syntax.[2] In the LF component, the antecedent VP is copied onto the empty VP, yielding (10b), which contains an anaphor in its object position as well. The LF representation in (10b) accounts for the sloppy interpretation of the sentence involving a null object in (8b).

(9) *In Overt Syntax:*

a. [$_{TP}$ John-ga [$_{T'}$ [$_{VP}$ zibun-no   konpyuutaa-o t_V] [$_T$ kowasi$_V$-ta$_T$]]]
    John-NOM   self-GEN   computer-ACC   destroyed

b. [$_{TP}$ Mary-mo [$_{T'}$ [$_{VP}$ *e*   ] [$_T$ kowasi$_V$-ta$_T$]]]
    Mary-also   destroyed

(10) *In the LF Component:*

a. [$_{TP}$ John-ga [$_{T'}$ [$_{VP}$ zibun-no   konpyuutaa-o t_V] [$_T$ kowasi$_V$-ta$_T$]]]
    John-NOM   self-GEN   computer-ACC   destroyed

b. [$_{TP}$ Mary-mo [$_{T'}$ **[$_{VP}$ zibun-no   konpyuutaa-o t_V]** [$_T$ kowasi$_V$-ta$_T$]]]
    Mary-also   self-GEN   computer-ACC   destroyed

Even though the VP-ellipsis analysis successfully explains why null objects in Japanese permit sloppy interpretations, it faces a variety of problems (see Hoji 1998, Oku 1998, Saito 2007, and Takahashi 2008). Most notable is the observation by Oku (1998) that even null subjects allow the sloppy-identity reading, as already illustrated in (5) and repeated here as (11). Given that subjects arguably stay outside of VP in overt syntax and in LF, the VP-ellipsis analysis by Otani and Whitman (1991) would predict that the sloppy interpretation should not be possible with null subjects, contrary to facts.

(11) a. Taroo-wa [zibun-no   kodomo-ga   eigo-o   hanasu   to]
          Taroo-TOP   self-GEN   child-NOM   English-ACC   speak   that
          omotteiru.
          think

          'Taroo$_1$ thinks that his$_1$ child speaks English.'

      b. Ken-wa   [*e*   furansugo-o   hanasu   to]   omotteiru.
          Ken-TOP   French-ACC   speak   that   think

          'Ken$_2$ thinks that his$_1$ child / his$_2$ child speaks French.'

In order to accommodate both the null-object examples as in (4) and the null-subject examples as in (5), Oku (1998), Saito (2003, 2007) and Takahashi (2008) (among others) put

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[2] For a detailed discussion of why some languages permit ellipsis of such 'headless' phrases but others don't, see Funakoshi (2012).

forth an alternative analysis in which only the relevant argument DP (not the VP) is elided. Under their Argument Ellipsis analysis, the sentences in (11) have the representations in (12) in overt syntax. After the derivation enters into LF, the antecedent DP, namely the anaphoric subject in (12a), is copied onto the empty subject position in (12b), resulting in the LF representation in (13b), which successfully yields the sloppy interpretation of the null subject.

(12)   *In Overt Syntax:*

    a. Taroo-wa   [$_{CP}$ [$_{DP}$ zibun-no   kodomo-ga] [$_{T'}$ eigo-o   hanasu]
        Taroo-TOP   self-GEN   child-NOM   English-ACC speak
        to   ]   omotteiru.
        that   think

    b. Ken-wa   [$_{CP}$ [$_{DP}$ *e*   ] [$_{T'}$ furansugo -o hanasu]
        Ken-TOP   French-ACC   speak
        to   ]   omotteiru.
        that   think

(13)   *In the LF Component:*

    a. Taroo-wa   [$_{CP}$ [$_{DP}$ zibun-no   kodomo-ga] [$_{T'}$ eigo-o   hanasu]
        Taroo-TOP   self-GEN   child-NOM   English-ACC speak
        to   ]   omotteiru.
        that   think

    b. Ken-wa   [$_{CP}$ [$_{DP}$ **zibun-no**   **kodomo-ga**] [$_{T'}$ furansugo -o hanasu]
        Ken-TOP   self-GEN   child-NOM   French-ACC   speak
        to   ]   omotteiru.
        that   think

3.   Approaches to the Parametric Variation in Argument Ellipsis

Oku (1998) observes that the availability of Argument Ellipsis is subject to cross-linguistic variation: Argument Ellipsis is permitted in Japanese but is not allowed in languages like Spanish or English.[3] As illustrated in (14b), Spanish permits null subjects, but these null subjects do not have sloppy interpretation: (14b) only means that Juan believes that Maria's proposal will be accepted, and it never means that Juan believes that Juan's proposal will be accepted. In the English example (15), which contains a verb that optionally allow an empty object, the second clause simply means that John did some eating activity, and never permits sloppy reading.

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[3] See also Takahashi (2007) for a detailed cross-linguistic survey concerning the availability of Argument Ellipsis.

(14) Spanish (Oku 1998:305):

  a. Maria cree   [que   su propuesta será   aceptada] y
     Maria believes that   her proposal   will-be accepted   and

     'Maria$_1$ believes that her$_1$ proposal will be accepted and …'

  b. Juan también cree   [que _____ será   aceptada].
     Juan too   believes that   will-be accepted

     'Juan$_2$ also believes that her$_1$ proposal will be accepted.'
   * 'Juan$_2$ also believes that his$_2$ proposal will be accepted.'

(15) English (Oku 1998:311):
     Bill$_1$ ate his$_1$ shoe, and John ate, too.

To account for the cross-linguistic difference between Japanese (and Korean) on one hand and English and Spanish on the other, Oku (1998) and Takahashi (2008) proposed that the availability of Argument Ellipsis in a given language is tightly connected to the availability of (Japanese-type) scrambling.[4] According to this "scrambling approach", both of these properties stem from the parameter proposed by Bošković and Takahashi (1998), which can be called the Parameter of θ-feature Strength.

(16) The Parameter of θ-feature Strength: θ-features are {strong, weak}.

Bošković and Takahashi (1998) argue that θ-features of a verb are weak in Japanese, while they are strong in non-scrambling languages like English and Spanish. Given their weak nature, θ-features of Japanese verbs need not be checked in overt syntax. This property of Japanese makes it possible for an argument to be base-generated in a 'scrambled' position, as shown in (17a). In the LF component, the 'scrambled' object undergoes a lowering operation and merges with the predicate, in order to check the selectional features of the verb.

(17) a. *In Overt Syntax:*

[$_{TP}$ Ken-o [$_{TP}$ Taroo-ga [$_{CP}$ Hanako-ga   [$_{VP}$ sikatta] to] itta]]
    Ken-ACC   Taroo-NOM   Hanako-NOM   scolded   that   said
         Lit. 'Ken, Taroo said that Hanako scolded.'

  b. *In the LF Component:*

[$_{TP}$ ____   [$_{TP}$ Taroo-ga [$_{CP}$ Hanako-ga [$_{VP}$ **Ken-o** sikatta] to] itta]]
              Taroo-NOM   Hanako-NOM   Ken-ACC scolded   that   said

Such a derivation is not available in English or Spanish, since θ-features in these languages are strong and hence they must be checked in overt syntax soon after verbs are introduced into the derivation.

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[4] See also Saito (2003) for a related proposal.

Building on Bošković and Takahashi's LF analysis of scrambling, Oku (1998) and Takahashi (2008) argue that the possibility of Argument Ellipsis in Japanese also follows from the weakness of θ-features. Since θ-features of Japanese verbs need not undergo checking in overt syntax, an argument position can be literally absent in Japanese, as shown in (18). In the LF component, the sentence in (18b) comes to have a licit transitive configuration through the LF-copying of an antecedent DP, as shown in (19b).

(18)   *In Overt Syntax:*

    a. Taroo-ga   [$_{VP}$ [$_{DP}$ zibun-no   konpyuutaa-o] kowasita.]
        Taroo-NOM   self-GEN   computer-ACC   destroyed

        'Taroo$_1$ destroyed his$_1$ computer.'

    b. Hanako-mo   [$_{VP}$ [$_{DP}$ *e*   ] kowasita.]
        Hanako-also   destroyed

(19)   *In the LF Component:*

    a. Taroo-ga   [$_{VP}$ [$_{DP}$ zibun-no   konpyuutaa-o] kowasita.]
        Taroo-NOM   self-GEN   computer-ACC   destroyed

                                  LF Copy

    b. Hanako-mo   [$_{VP}$ **[$_{DP}$ zibun-no   konpyuutaa-o]** kowasita.]
        Hanako-also   self-GEN   computer-ACC   destroyed
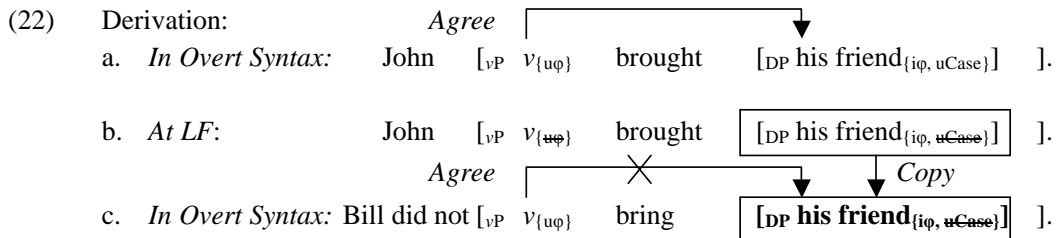
This way, Oku (1998) and Takahashi (2008) attribute both the availability of scrambling and that of Argument Ellipsis to a single parametric property of Japanese: the property that θ-features are weak.

In contrast, building on Kuroda's (1988) proposal that the main source of the various differences between English and Japanese is the presence vs. absence of obligatory agreement, Saito (2007) claims that Argument Ellipsis in Japanese stems from the absence of overt agreement in this language. This "anti-agreement approach" adopts Chomsky's (2000) system of agreement, in which agreement is a probe-goal relation induced by a set of uninterpretable φ-features on the functional heads of T and *v*. In the case of object agreement illustrated in (20), the uninterpretable φ-features of *v* agree with the matching, interpretable φ-set of the object DP. The object satisfies the condition that the goal must have an uninterpretable Case feature (the Activation Condition), and hence qualifies as a goal. The agreement relation results in the deletion of the uninterpretable φ-features on *v* and the uninterpretable Case feature of the DP.

(20)   a. … [$_{vP}$ *v*$_{\{u\varphi\}}$ [$_{VP}$ V   DP$_{\{i\varphi,\, uCase\}}$]]

        b. … [$_{vP}$ *v*$_{\{\cancel{u\varphi}\}}$ [$_{VP}$ V   DP$_{\{i\varphi,\, \cancel{uCase}\}}$]]

Saito (2007) argues that the agreement relation illustrated above is obligatory in languages like English and Spanish, and that this obligatory nature of agreement excludes Argument Ellipsis from these languages. For example, the derivation of the English examples in (21) proceeds as shown in (22). The object DP *his friend* in (21a) must be copied into the object position of (21b) for the latter sentence to be properly interpreted. If we assume that only LF objects can be employed in LF-copying, the DP *his friend* must be copied into (21b) from the LF representation of (21a).[5] However, this DP has already agreed with its *v* in (21a) and hence, the uninterpretable Case feature that rendered this DP active has already been deleted. Then, given the Activation Condition, it does not qualify as a goal in the required Agree relation in (21b), and consequently, the derivation crashes due to the remaining uninterpretable φ-features of *v*.

(21) a. John brought [$_{DP}$ his friend].

  b.* But Bill did not bring _____.

(22) Derivation: *Agree*

  a. *In Overt Syntax:* John [$_{vP}$ $v_{\{u\varphi\}}$ brought [$_{DP}$ his friend$_{\{i\varphi, uCase\}}$]].

  b. *At LF:* John [$_{vP}$ $v_{\{u\varphi\}}$ brought [$_{DP}$ his friend$_{\{i\varphi, \cancel{uCase}\}}$]].
    Agree ✕ *Copy*
  c. *In Overt Syntax:* Bill did not [$_{vP}$ $v_{\{u\varphi\}}$ bring **[$_{DP}$ his friend$_{\{i\varphi, \cancel{uCase}\}}$]**].

The corresponding derivation converges in Japanese, however, given that Japanese lacks overt agreement, which, according to Saito (2007), indicates that the uninterpretable φ-features on T and *v* are optional in this language. The derivation of the Japanese examples in (23) proceeds as shown in (24). In (23), the object DP *zibun-no tomodati* 'self's friend' is copied from the LF representation of (23a) into the object position of (23b), as in (24c). Since φ-features on a functional head are optional, *v* in (23b) need not have uninterpretable φ-features. Thus, the object DP in (23a) can be successfully copied into (23b) even though its uninterpretable Case feature has already been deleted, and the derivation converges.

(23) a. John-wa [$_{DP}$ zibun-no tomodati-o] turetekita.
      John-TOP self-GEN friend-ACC brought

    'John$_1$ brought his$_1$ friend.'

  b. Demo Mary-wa _____ tureteko-nakatta.
    but Mary-TOP brought-not

    'But Mary$_2$ did not bring her$_2$ friend.'

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[5] See Saito (2007) for evidence that only LF objects can be employed in the LF-copying operation involved in Argument Ellipsis.

(24)   Derivation:

  a.   *In Overt Syntax:*   *Agree*

    John-wa   [$_{vP}$ [$_{DP}$ zibun-no   tomodati-o$_{\{i\varphi,\ uCase\}}$]   turetekita $v_{\{u\varphi\}}$].
    John-TOP   self-GEN   friend-ACC   brought

  b.   *At LF:*

    John-wa   [$_{vP}$ [$_{DP}$ zibun-no   tomodati-o$_{\{i\varphi,\ \text{uCase}\}}$]   turetekita $v_{\{\text{u}\varphi\}}$].
    John-TOP   self-GEN   friend-ACC   brought

  c.   *In Overt Syntax:*   *Copy*

    Mary-wa   [$_{vP}$ **[$_{DP}$ zibun-no   tomodati-o$_{\{i\varphi,\ \text{uCase}\}}$]**   tureteko-nakatta $v_{\{\dots\}}$].
    Mary-TOP   **self-GEN   friend-ACC**   brought-not

To summarize this section, we have reviewed two major proposals concerning the parametric variation in Argument Ellipsis. The scrambling approach, adopted by Oku (1998) and Takahashi (2008), proposed that the existence of Argument Ellipsis in Japanese and its absence in English and Spanish are correlated with the availability of (Japanese-type) scrambling. In contrast, developing the idea of Kuroda (1998), Saito (2007) proposed the anti-agreement approach, which claimed that the possibility of Argument Ellipsis in Japanese is closely tied to the absence of overt agreement in this language.[6] Even though these proposals significantly differ in their details, they share the fundamental assumption that a parameter of UG establishes a tight connection between the availability of Argument Ellipsis and other prominent properties of Japanese.[7] The experiments to be discussed in Section 5 and 6 attempt to evaluate this basic insight of their proposals, by investigating the acquisition of Japanese.

4.   Prediction for Child Japanese

As we have seen in the previous section, theoretical studies on Japanese syntax suggest that Argument Ellipsis is closely tied to other prominent characteristics of Japanese, such as

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[6] Şener and Takahashi (2010) provide further support for Saito's (2007) anti-agreement approach by showing that in Turkish, only subjects (but not objects) resist Argument Ellipsis, which is expected in light of the observation that only subjects agree with predicates in finite clauses. Otaki et al. (in press) also confirm the validity of this approach by demonstrating that in a Mayan language called Kaqchikel, which exhibits overt subject and object agreements, neither null subjects nor null objects permit sloppy interpretation.

In contrast, null subjects in languages like Javanese, Bangla, and Hindi seem to disallow sloppy interpretation, despite the absence of overt agreement between the subject DPs and the predicates. See Sato (2012) and Simpson et al. (under review) for a detailed discussion.

See also Kitahara (2011) for conceptual problems of Saito's (2007) anti-agreement approach, and an alternative, agreement-based approach to the cross-linguistic variation in Argument Ellipsis.

[7] See Otaki (2012) for an approach that relates the availability of Argument Ellipsis to the absence of fusional case morphology.

scrambling or the lack of overt agreement. Previous acquisition literature reports that both scrambling and agreement are acquired fairly early, at least by the age of three. For example, using an act-out task, Otsu (1994) investigated whether Japanese-speaking three- and four-year-olds can correctly interpret scrambled sentences as in (25b). The results showed that young children had virtually no difficulty in understanding scrambled sentences, once the discourse context was provided by adding a sentence as in (25a).[8]

(25) a. Kooen-ni   ahirusan-ga   imashita.
          park-in   duck-NOM   was

          'There was a duck in the park.'

      b. Sono   ahirusan-o   kamesan-ga   osimashita.
          the   duck-ACC   turtle-NOM   pushed

          'A turtle pushed the duck.'

Hyams (2002) summarizes the results of various acquisition studies, and observes that children acquiring "rich" agreement languages such as Italian and Catalan obey subject-verb agreement requirements from the earliest stage (before or around the age of two), even before they produce all the forms in a paradigm. For example, singular verb morphology is typically acquired before plural morphology, and first- and third-person forms appear earlier than second-person forms. Nevertheless, agreement is almost always correct for those forms that are used. According to Hyams (2002), across children and languages, agreement errors are under 4%, as shown in Table 1. Given the finding that agreement errors are extremely rare in the acquisition of "rich" agreement languages, we can reasonably speculate that children acquiring agreementless languages like Japanese would also be sensitive to the absence of overt agreement from the early stages of acquisition.

Given that we have reasons to believe that the properties that are allegedly connected to Argument Ellipsis are acquired before the age of three, both of the approaches to the parameter of Argument Ellipsis discussed in the previous section should make the following prediction:

(26)   Prediction for Child Japanese:
        Japanese-speaking preschool children have knowledge of Argument Ellipsis.

The next two sections report results of experiments which evaluate the validity of this prediction: Section 5 investigates whether children permit sloppy interpretation for null objects, and Section 6 examines whether children allow this type of interpretation for embedded null subjects.

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[8] See also Murasugi and Kawamura (2005) and Sano (2007) for early acquisition of scrambling in Japanese.

Child	Language	Age	n	% error	Source
Simone	German	1;07-2;08	1732	1	Clahsen and Penke 1992
Martina	Italian	1;08-2;07	478	1.6	Guasti 1994
Diana	Italian	1;10-2;06	610	1.5	Guasti 1994
Guglielmo	Italian	2;02-2;07	201	3.3	Guasti 1994
Claudia	Italian	1;04-2;04	1410	3	Pizzuto and Caselli 1992
Francesco	Italian	1;05-2;10	1264	2	Pizzuto and Caselli 1992
Marco	Italian	1;05-3;00	415	4	Pizzuto and Caselli 1992
Marti	Catalan/Spanish	1;09-2;05	178	0.56	Torrens 1992
Josep	Catalan/Spanish	1;09-2;06	136	3	Torrens 1992
Gisela	Catalan	1;10-2;06	81	1.2	Torrens 1992
Guillem	Catalan	1;09-2;06	129	2.3	Torrens 1992

Table 1: Percentage of Subject-Verb Agreement Errors in Child Language (Hyams 2002:231)

5. Experiment 1: Ellipsis of Object DPs

5.1. Subjects and Method

In order to determine whether Japanese-speaking preschool children permit sloppy interpretation as a consequence of Argument Ellipsis, an experiment was conducted with 10 Japanese-speaking children, ranging in age from 3(years);01(month) to 5;07 (mean age 4;05).[9] The experiment employed a modified version of the Truth-Value Judgment Task (Crain and Thornton 1998). In this task, each child was told a story, which was accompanied by a series of pictures presented on a laptop computer. At the end of each story, a puppet described verbally what he thought had happened in the story. The task for the child was to judge whether the puppet's description was true or false, by feeding him either a nice strawberry or a horrible green pepper. The experiment contained (i) two sentences with null objects, and (ii) two sentences with overt pronouns, in order to determine whether children allow the sloppy interpretation for null objects while disallowing that interpretation for overt pronouns. A sample story and the test sentences that followed this story are presented in (27) and (28).

(27)   *Sample Story:*
      Today, Panda and Pig enjoyed riding on their favorite tricycles. Now they decided to wash them. Panda said, "Oh! My tricycle is very dirty." Pig said, "Shall I help you wash your tricycle?" Panda replied, "No, thanks. I will try to do it by myself, so you can work on your own." They started washing their favorite tricycles.

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[9] The experiment reported in this section is based on Sugisaki (2007).

(28)   *Sample Test Sentences:*

    a.   Pandasan-ga   zibun-no   sanrinsya-o   aratteru   yo.
        panda-NOM   self-GEN   tricycle-ACC   washing   PRT

        'A panda$_1$ is washing his$_1$ tricycle.'

    b.   Butasan-mo   *e* /   sore-o   aratteru   yo.
        pig-also   it-ACC   washing   PRT

        'A pig is also washing *e* / it.'

5.2. Results and Discussion

The results are summarized in Table 2.

Sloppy-identity Interpretation of Null Objects	90% acceptance (18/20)
Sloppy-identity Interpretation of Overt Pronouns	85% rejection (17/20)

Table 2: Summary of the Results of Experiment 1

The obtained results clearly indicate that Japanese-speaking preschool children permit the sloppy-identity interpretation for null-object sentences, while disallowing that interpretation for overt pronouns.[10] These results are in conformity with the prediction in (26), and suggest that the knowledge of Argument Ellipsis is already in the grammar of Japanese-speaking preschool children.

However, given that this experiment used sentences involving null objects, there remains a possibility that children may have employed VP-ellipsis, not Argument Ellipsis, to derive the sloppy interpretation. This possibility gains more plausibility in light of the proposal by Takahashi (2008) that Chinese has VP-ellipsis but does not have Argument Ellipsis. As observed by Huang (1991) and Otani and Whitman (1991), null objects in Chinese exhibit the sloppy interpretation: The null object in (29b) can mean either rumors about Zhangsan (strict interpretation) or rumors about Mali (sloppy interpretation). In sharp contrast, according to Takahashi (2008), null subjects in Chinese do not permit sloppy interpretation: The missing

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[10] See Matsuo (2007) for a related study which also investigated children's interpretation of null-object sentences. Otaki and Yusa (2012) confirmed that Japanese-speaking children permit ellipsis of object DPs, by demonstrating that children have access to quantificational interpretation of null objects.

embedded subject in (30b) may refer to Zhangsan's child but cannot refer to Lisi's child.

(29)   a.   Zhangsan   bu   xihuan guany   ziji   de   yaoyan.
            Zhangsan   not   like   about   self   GEN   rumor

            'Zhangsan$_1$ does not like rumors about himself$_1$.'

       b.   Mali   ye   bu   xihuan   *e* .
            Mali   also   not   like

            Lit. 'Mali does not like *e*   either.'

(30)   a.   Zhangsan   shuo   ziji de   haizi   mei   na   qian.
            Zhangsan   say   self GEN child   take   not   money

            'Zhangsan$_1$ said that his$_1$ child did not take money.'

       b.   Lisi   ye shuo *e*   mei   na   qian.
            Lisi   too say   take   not   money

            Lit. 'Lisi also said that *e* did not take money.'   (Takahashi 2008:415)

This observation suggests that UG may permit two options to derive the sloppy interpretation of null objects: VP-ellipsis (preceded by overt V-to-T raising) as in Chinese, and Argument Ellipsis as in Japanese (and Korean). In order to make sure that child Japanese is not like adult Chinese and that it indeed has Argument Ellipsis, the experiment reported in the next section makes use of sentences that contain an empty argument in the embedded subject position.

6.   Experiment 2: Ellipsis of Subject DPs

6.1. Subjects and Method

In order to re-evaluate the validity of the prediction in (26), an experiment was conducted with 24 Japanese-speaking children, ranging in age from 4;11 to 6;07 (mean age 5;10).[11] These children were divided into two groups. One group of children (Experimental Group) was presented test sentences involving an embedded clause with a null subject, as in (31). The other group of children (Control Group) was presented test sentences involving an overt pronoun in the embedded subject position, as in (32). Both types of sentences were accompanied by exactly the same stories.

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[11] The results of a small-scale pilot experiment suggested that three-year-olds tend to have difficulty in interpreting a sequence of two sentences both of which involve an embedded clause as in (31) and (32) (irrespective of whether the sentence contains a null subject or an overt subject), presumably due to memory limitations. Thus, this experiment focuses on relatively old children. Some refinements of experimental methodology would be necessary to address the question of whether three-year-olds permit the sloppy interpretation of null subjects, which I have to leave for future research.

(31)　*Test Sentence with a Null Subject:*

　　a.　Zousan-wa　　[　zibun-no　　e-ga　　　　ichiban　　jyouzuda
　　　　elephant-TOP　　self-GEN　　picture-NOM　the-first　　good
　　　　to　]　omotteru　　yo.
　　　　that　　think　　　PRT

　　　　'The elephant$_1$ thinks that his$_1$ picture is the best.'

　　b.　Raionsan-mo　　[　*e*　ichiban　　jyouzuda　　to　]　　omotteru　　yo.
　　　　lion-also　　　　　　the-first　　good　　　　that　　think　　　PRT

　　　　'The lion also thinks that *e* is the best."

(32)　*Test Sentence with an Overt Pronominal Subject:*

　　a.　Zousan-wa　　[　zibun-no　　e-ga　　　　ichiban　　jyouzuda
　　　　elephant-TOP　　self-GEN　　picture-NOM　the-first　　good
　　　　to　]　omotteru　　yo.
　　　　that　　think　　　PRT

　　　　'The elephant$_1$ thinks that his$_1$ picture is the best.'

　　b.　Raionsan-mo　　[　<u>sore-ga</u>　ichiban jyouzuda　　to　]　　omotteru　　yo.
　　　　lion-also　　　　　　it-NOM　　the-first good　　　that　　think　　　PRT

　　　　'The lion also thinks that <u>it</u> is the best."

　　　　Each child was presented with four target trials and two filler trials. Among the four target trails, two of them were aimed at investigating whether children allow sloppy interpretation for null subjects or overt pronouns, and the other two of them were aimed at investigating whether children allow strict interpretation for null subjects or overt pronouns. The task was a modified version of the Truth-Value Judgment Task (Crain and Thornton 1998). In each trial, a child was told a story, which was accompanied by a series of pictures presented on a laptop computer. At the end of each story, a puppet described verbally what he thought had happened in the story, using sentences as in (31) or (32). The task for the child was to judge whether the puppet's description was correct or wrong, by pointing at one of the cards the puppet had in his hands: ○ (circle, which means 'correct') or × (cross, which means 'wrong'). Sample stories and the test sentences that followed these stories are given in (33) - (36).

(33)　*Sample Story 1* (which investigates the availability of sloppy reading):
　　　Elephant, Lion, and Monkey are drawing their portraits. Elephant said to Lion, "Hey, look at this! I think my portrait is the best." Looking at Elephant's portrait, Lion replied, "Your portrait looks very good, but I think mine is the best."

(34) *Puppet:*

a. Zousan-wa   [zibun-no   e-ga   ichiban   jyouzuda
    elephant-TOP   self-GEN   picture-NOM   the-first   good
    to]   omotteru   yo.
    that   think   PRT

    'The elephant₁ thinks that his₁ picture is the best.'

b. Raionsan-mo   [_e_   /   sore-ga   ichiban   jyouzuda   to]
    lion-also   it-NOM   the-first   good   that
    omotteru   yo.
    think   PRT

    'The lion also thinks that _e_ / it is the best."

(35) *Sample Story 2* (which investigates the availability of strict reading):
    Rabbit, Squirrel, and Dog are reading their picture books. Rabbit said to Squirrel,
    "Hey, look at this! I think my picture book is the most amusing." Looking at Rabbit's
    picture book, Squirrel replied, "Yes, I agree. My picture book is very good, but I
    think yours is the most amusing."

(36) *Puppet:*

a. Usagisan-wa   [zibun-no   ehon-ga   ichiban   omosiroi
    rabbit-TOP   self-GEN   picture book-NOM   the-first   amusing
    to]   omotteru   yo.
    that   think   PRT

    'The rabbit₁ thinks that her₁ picture book is the most amusing.'

b. Risusan-mo [_e_   /   sore-ga   ichiban   omosiroi   to]
    squirrel-also   it-NOM   the-first   amusing   that
    omotteru   yo.
    think   PRT

    'The squirrel also thinks that _e_ / it is the most amusing."

6.2. Results and Discussion

The results are summarized in Table 3. Children permitted a strict-identity interpretation both for the sentences with a null subject and the sentences with an overt pronominal subject. In contrast, children showed a strong tendency to allow sloppy-identity interpretation only when the sentence contains a null subject, and to disallow this reading when the sentence involves an overt pronominal subject. These results are in conformity with the prediction in (26), and suggest that the knowledge of Argument Ellipsis is already in the grammar of Japanese-speaking preschool children. The evidence presented in this section would be more convincing than the one presented in the previous section, given that the experiment reported in this section made use of sentences involving null subjects, and hence that the sloppy interpretation children provided for these empty arguments cannot be attributed to VP-ellipsis.

	strict-identity interpretation		sloppy-identity interpretation	
	# of acceptance	% of acceptance	# of acceptance	% of acceptance
Sentences involving a null subject	23/24	96%	20/24	83%
Sentences involving an overt pronoun	23/24	96%	4/24	17%

Table 3: Summary of the Results of Experiment 2

7. Experiment 3: The Ban on Adjunct Ellipsis

7.1. A Remaining Question

In the previous two sections, we have obtained evidence that Japanese-speaking preschool children allow the sloppy interpretation for null arguments. Still, a significant question remains as to the exact source for this interpretation. Two possibilities are immediately available. It may be the case that children already have knowledge of Argument Ellipsis, and that the sloppy interpretation stems from this knowledge in an adult-like way. Alternatively, it may be the case that Japanese-speaking children are simply allowing any phrase to be elided, and that the ellipsis of argument DPs is just an instance of that knowledge. In adult Japanese, the latter possibility can be ruled out based on the observation that adjuncts do not undergo ellipsis. The relevant example is provided in (37).

(37)   a.   Taroo-wa   teineini   kuruma-o   aratta.
              Taroo-TOP   carefully   car-ACC   washed

         'Taroo washed a car carefully.'

b. Demo, Hanako-wa ——— kuruma-o arawa-nakat-ta.
    but   Hanako-TOP   car-ACC   wash-not-PAST

'But Hanako did not wash a car.' / *'But Hanako did not wash a car carefully.'

While the sentence in (37a) contains the adjunct corresponding to *carefully*, the interpretation of (37b) excludes this adjunct: The sentence in (37b) just means that Hanako did not wash a car, and never means that Hanako didn't wash it carefully (that is, Hanako washed a car but not in a careful manner).

Then, in order to verify that Japanese-speaking children indeed have knowledge of Argument Ellipsis (and not the knowledge that any phrase can be elided), it has to be demonstrated that they are also adult-like in disallowing the ellipsis of adjuncts.

7.2. Subjects and Method

In order to determine whether Japanese-speaking preschool children are sensitive to the ban on adjunct ellipsis, an experiment was conducted with 14 Japanese-speaking children, ranging in age from 3;09 to 5;08 (mean age 5;01).[12] As in the previous experiments, the task was a modified version of the Truth-Value Judgment (Crain and Thornton 1998). In this task, each child was told a story, which was accompanied by a series of pictures presented on a laptop computer. At the end of each story, a puppet described verbally what he thought had happened in the story. The task for the child was to judge whether the puppet's description was true or false, by pointing at one of the cards the puppet had in his hands: ○ (circle, which means 'correct') or × (cross, which means 'wrong'). The experiment consisted of 2 sentences with adjuncts, 2 sentences without adjuncts, 1 filler and 1 practice item. A sample story and the test sentences that followed this story are presented in (38) and (39). In this story, if children indeed exclude ellipsis of adjuncts, the test sentence without an adjunct should be judged as false, since Squirrel actually ate his apples even though it was not in a quick manner.

(38) *Sample Story:*
      When Frog and Squirrel were about to go out to play soccer, Frog's mother came out from the house and brought them some nice apples. Frog wanted to play soccer now, so he ate his apple very quickly. Squirrel also wanted to play soccer now, but he was not good at eating fast, so he decided to go out without eating his apple. Looking at it, Frog said to Squirrel, "I can wait for you, so you can take your time to finish up your apple." Squirrel ate his apple slowly, and then they went out to play soccer.

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[12] The experiment reported in this section is based on Sugisaki (in press).

(39)　　*Sample Test Sentences:*

 a. <u>Test Sentence with an Adjunct</u>

Kaerusan-wa	ringo-o	isoide	tabeta	kedo,
frog-TOP	apple-ACC	quickly	ate	but
Risusan-wa	ringo-o	isoide	tabe-nakat-ta	yo.
squirrel-TOP	apple-ACC	quickly	eat-not-PAST	PRT

'Frog ate an apple quickly, but Squirrel did not eat an apple quickly.'

 b. <u>Test Sentence without an Adjunct</u>

Kaerusan-wa	ringo-o	isoide	tabeta	kedo,
frog-TOP	apple-ACC	quickly	ate	but
Risusan-wa	ringo-o	_____	tabe-nakat-ta	yo.
squirrel-TOP	apple-ACC		eat-not-PAST	PRT

'Frog ate an apple quickly, but Squirrel did not eat an apple.'

All the test questions were pre-recorded and came from the laptop computer. In order to make sure that there should be no crucial intonational difference between the sentences with an adjunct and those without (other than the presence of an adjunct itself), the latter were created from the former by deleting the sound corresponding to the adjunct phrase, using Praat (Boersma and Weenink 2010).

7.3. Results and Discussion

The results are summarized in Table 4. When presented with a context as in (38), children rejected sentences without an adjunct more than 85% of the time, while they accepted sentences with an adjunct more than 90% of the time. These results succinctly demonstrate that Japanese-speaking four- and five-year-olds do not permit ellipsis of adjuncts, even though experiments reported in the previous sections revealed that Japanese-speaking children allow arguments to be elided. The findings from this experiment, together with the findings from the previous two experiments, suggest that children are sensitive to the argument-adjunct asymmetry in the possibility of ellipsis, and hence corroborate the claim made in the previous sections that Japanese-speaking preschoolers indeed have knowledge of <u>Argument</u> Ellipsis.

Sentences with an Adjunct	92.9% acceptance (26/28)
Sentences without an Adjunct	85.7% rejection (24/28)

Table 4: Summary of the Results of Experiment 3

8. Experiment 4: The Ban on Eliding *Wh*-phrases

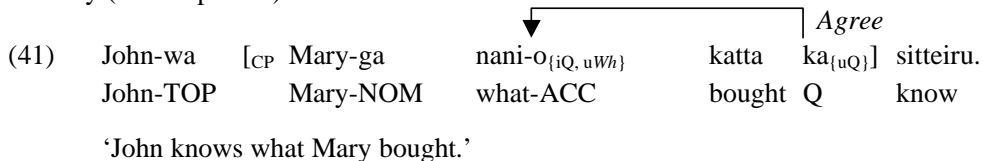### 8.1. A Consequence of the Anti-agreement Approach to Argument Ellipsis

As we have seen in Section 3, there are two major parametric approaches to the cross-linguistic variation in Argument Ellipsis: the scrambling approach, which argues that Argument Ellipsis is available only in those languages with (Japanese-type) scrambling, and the anti-agreement approach, which claims that Argument Ellipsis is permitted only in those languages that lack overt agreement. In this section, we focus on the latter approach, and explore a certain consequence of that approach. We further confirm Japanese-speaking children's knowledge of Argument Ellipsis, by demonstrating experimentally that children are also sensitive to that consequence of the anti-agreement approach.[13]

An immediate consequence of the anti-agreement approach proposed by Saito (2007) and adopted by Şener and Takahashi (2010) is that, if a certain type of phrases must undergo obligatory agreement, then that type of phrases cannot be elliptic even in Japanese. I argue that this expectation is indeed borne out by *wh*-phrases.[14]

Chomsky (2000) analyzes overt *wh*-movement as in English as follows. A *wh*-phrase has an uninterpretable feature {u*Wh*} and an interpretable feature {iQ}. The former activates the *wh*-phrase for agreement and movement, and the latter matches and agrees with the uninterpretable feature {uQ} of an interrogative complementizer.

(40) John knows [$_{CP}$ C$_{\{uQ\}}$ [$_{TP}$ Mary bought   what$_{\{iQ, uWh\}}$]]   *Agree* / *Move*
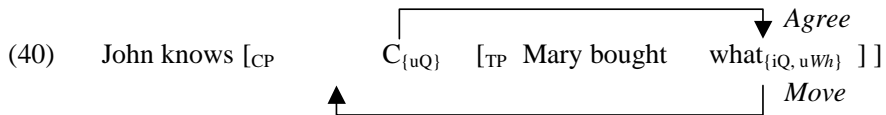
Developing the proposals by Watanabe (1992) and Hagstrom (1998), Chomsky suggests the possibility that *wh*-in-situ constructions also involve an agreement relation as illustrated in (41): The difference between *wh*-movement and *wh*-in-situ languages lies in whether the entire *wh*-phrase is moved (as in English), or only the head undergoes movement overtly or covertly (as in Japanese).[15]

(41) John-wa   [$_{CP}$ Mary-ga   nani-o$_{\{iQ, uWh\}}$ katta   ka$_{\{uQ\}}$] sitteiru.   *Agree*
      John-TOP   Mary-NOM   what-ACC   bought   Q   know

'John knows what Mary bought.'

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[13] The experiment reported in this section is based on Sugisaki (2012).

[14] See also Ikawa (in press) for the discussion of why *wh*-phrases are not amenable to Argument Ellipsis.

[15] Watanabe (1992) argues that a null operator undergoes overt movement in Japanese *wh*-in-situ constructions, while Hagstrom (1998) claims that it is the question particle (*ka*) that undergoes syntactic movement from a clause-internal position (by the *wh*-word) to the clause periphery.

The obligatory agreement relation between a *wh*-phrase and an interrogative complementizer provides a very simple account for the observation that Argument Ellipsis of *wh*-phrases is not permitted, as illustrated in (42).

(42) a. Speaker A: John-wa   nani-o   tabeta no?   Speaker B: Ringo.
              John-TOP   what-ACC   ate   Q   apple

          'What did John eat?'   'An apple.'

      b. Speaker A: Dewa,   Mary-wa   _____   tabeta no?
              then   Mary-TOP   ate   Q

      'Then, did Mary eat something/that?' / *'Then, what did Mary eat?'

The relevant derivation proceeds as shown in (43). The object *wh*-phrase *nani-o* 'what' is copied from the LF representation of (42a) into the object position of (42b), as in (43c). However, this *wh*-phrase has already agreed with the Complementizer in (42a) and hence, the uninterpretable feature {u*Wh*} that rendered this *wh*-phrase active has already been deleted. Then, given the Activation Condition, the copied *wh*-phrase does not qualify as a goal in the required agreement relation, and consequently, the derivation involving LF-copying of a *wh*-phrase does not converge due to the remaining uninterpretable feature {uQ} of the Complementizer.

(43) Derivation:

      a. *In Overt Syntax:*   John-wa   [DP nani-o$_{\{iQ, uWh\}}$]   tabeta   no$_{\{uQ\}}$?   *Agree*
                               John-TOP   what-ACC   ate   Q

      b. At LF: John-wa   [DP nani-o$_{\{iQ, uWh\}}$]   tabeta   no$_{\{uQ\}}$?
                               John-TOP   what-ACC   ate   Q

      c. *In Overt Syntax:*   Mary-wa   [DP nani-o$_{\{iQ, uWh\}}$]   tabeta   no$_{\{uQ\}}$?   *Copy* ... *Agree*
                               Mary-TOP   what-ACC   ate   Q

What the above discussion shows is that the absence of *wh*-phrase ellipsis follows from Saito's (2007) anti-agreement approach *without any additional cost*, if we adopt Chomsky's (2000) assumption that *wh*-phrases must undergo agreement with the Complementizer even in *wh*-in-situ languages like Japanese. I must hasten to add the following: I do *not* claim that the derivation in (43) would be the *only* source for the lack of *wh*-phrase ellipsis. Another possible (and plausible) account for this observation is easily available: A *wh*-phrase is inherently focused, and a focused material cannot be subject to ellipsis. What I argue here is that the anti-agreement approach provides an additional way to exclude ellipsis of *wh*-phrases in Japanese, and that the relevant mechanisms automatically follow from (independently motivated) properties of UG. A virtue of deriving the ban on eliding *wh*-phrases from the anti-agreement approach is that we can obtain a clear prediction for children's knowledge about this constraint: Since the obligatory agreement relation between a *wh*-phrase and an

interrogative complementizer directly follows from UG, it is predicted that those Japanese-speaking preschool children who already have the knowledge about Argument Ellipsis should also have the knowledge that *wh*-phrases cannot undergo this ellipsis. Since we have already established in the experiments discussed in the previous sections that Japanese-speaking preschool children have knowledge of Argument Ellipsis, we can expect that children are also sensitive to the ban on eliding *wh*-phrases. The experiment reported below addresses the question of whether this is actually the case.

8.2. Subjects and Method

An experiment was conducted with 16 Japanese-speaking preschool children, ranging in age from 3;09 to 4;07 (mean age 4;01). The task for children was Question-after-Story. In this task, each child was told a short story, which was accompanied by a series of pictures presented on a laptop computer. At the end of each story, a puppet appeared on the screen and asked the child two questions with respect to what had happened in the story. The task for the child was to answer these questions. All the test questions were pre-recorded and came out from the laptop computer.

A sample story is presented in (44).

(44)   *Sample Story:*
       Duck and Squirrel are playing with their favorite toys. Duck now starts to draw his
       favorite airplane. Since Squirrel is not good at drawing, he thinks of just taking a
       look at how well Duck draws the airplane. However, by looking at Duck's drawing,
       Squirrel now wants to give a try. So Squirrel also starts to draw his favorite train.

Each story was followed by two questions. The first question was always a *wh*-question like (45). The second question, which was posed after a child had answered the first one, had three types: (i) a *wh*-question as in (46a), (ii) a question involving a null object as in (46b), and (iii) a truncated question as in (46c). In adult Japanese, the questions in (46a) and (46c) are interpreted as a *wh*-question (and hence requires a short answer "A train"), while the question with a null object in (26b) is interpreted as a yes/no question.[16]

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[16] The truncated question in (46c) is interpreted as a *wh*-question since the preceding question in (45) is also a *wh*-question: It can be interpreted as a yes/no question when the preceding question is also a yes/no question.

(45)   The First Question: Ahirusan-wa   nani-o   kaita   kana?
                                 duck-TOP   what-ACC   draw   Q

        'What did the duck draw?'

(46)   The Second Question:
        a. *Wh*-question: Jyaa,   risusan-wa   nani-o   kaita   kana?
                                        then   squirrel-TOP   what-ACC   draw   Q

            'Then, what did the squirrel draw?'

        b. Question with a null object: Jyaa,   risusan-wa   _____   kaita   kana?
                                         then   squirrel-TOP   draw   Q

            'Then, did the squirrel draw (something)?'

        c. Truncated question: Jyaa,   risusan-wa?
                                        then   squirrel-TOP

            'Then, the squirrel?'

One might worry that some intonational difference between a null-object question like (46b) and a *wh*-question as in (46a) may play a role for children to conclude that the former is not a *wh*-question but a yes/no question. In order to make sure that there should be no crucial intonational difference between these two types of questions (other than the presence of a *wh*-phrase), the null-object questions were created from the corresponding *wh*-questions by deleting the sound corresponding the *wh*-phrase, using Praat (Boersma and Weenink 2010).

Truncated questions like (46c) were added to exclude the possibility that children always provide a yes/no answer to questions without an overt *wh*-phrase: If it can be shown that children interpret questions with a null object like (46b) as a yes/no question despite the fact that they interpret truncated questions like (46c) as a *wh*-question, then this would allow us to conclude that children do not rely on a strategy which determines the interpretation of a question based on the presence or the absence of a *wh*-phrase.

The experiment consisted of two trials with a *wh*-question as in (46a), two trials with a null-object question as in (46b), and two trials with a truncated question as in (46c). The order of presentation was pseudo-randomized.

8.3. Results and Discussion

The results are summarized in Table 5. Except for the responses from a single child (4;04), all the answers to null-object questions were yes/no answers (more specifically, *yes* answers). In contrast, virtually all the answers to truncated questions were short answers such as "A train", which suggests that children interpreted these sentences as *wh*-questions. This finding suggests that Japanese-speaking children do not have a strategy to interpret questions without a *wh*-phrase as yes/no questions. The sharp contrast between responses to questions involving a null object and responses to truncated questions suggests that children do not

interpret null-object questions as object *wh*-questions. Thus, the obtained results clearly indicate that Japanese-speaking preschool children already have the knowledge that *wh*-phrases are not allowed to undergo Argument Ellipsis.

	Interpreted as a *wh*-question	Interpreted as a yes/no question
Wh-questions as in (46a)	100% (32/32)	0% (0/32)
Questions with a null object as in (46b)	6.25% (2/32)	93.75% (30/32)
Truncated questions as in (46c)	96.88% (31/32)	0% (0/32)

Table 5: Summary of the Results of Experiment 4

9. Concluding Remarks

This study reported results of four experiments to demonstrate that Japanese-speaking preschool children have fully adult-like knowledge of Argument Ellipsis. The results of Experiment 1 and 2 revealed that children permit sloppy-identity interpretation both for null objects and for null subjects. Experiment 3 verified that the source of this interpretation is indeed knowledge of Argument Ellipsis (and not the knowledge that any phrase can be elided), by showing that children are also adult-like in disallowing the ellipsis of adjuncts. In light of the observation that (Japanese-type) scrambling and agreement are acquired at least before the age of three, these findings lend support to the fundamental part of the parametric proposals by Oku (1998), Saito (2007), and Takahashi (2008) that the availability of Argument Ellipsis in Japanese is closely tied to other prominent characteristics of this language, such as scrambling or the absence of overt agreement.

Experiment 4 focused on the constraint that Argument Ellipsis does not apply to *wh*-phrases, which immediately follows from the anti-agreement approach. The results of this experiment, combined with the results of Experiment 1-3, suggest that not only the knowledge about Argument Ellipsis but also the knowledge about its constraints are in children's grammar from the earliest observable stages. These findings are consistent with the view that the availability of Argument Ellipsis and its constraints directly follow from the principles and parameters of UG, which in turn demonstrates that the acquisition of Argument Ellipsis is a very fruitful area to deepen our understanding about the nature of innate language faculty.

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ARGUMENT ELLIPSIS IN JAPANESE AND MALAYALAM *

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In recent years, evidence has been mounting for the hypothesis that null arguments in several languages represented most notably by Japanese are derived by ellipsis rather than involve empty pronouns (see Kim 1999, Oku 1998, Saito 2004, and Takahashi 2008a, among others). This article subjects Malayalam, a null argument language like Japanese, to close scrutiny, and considers whether its null arguments can arise through ellipsis, pointing out similarities and differences between the two languages in terms of the availability of elliptic null elements. It will turn out that while Malayalam largely behaves like Japanese, it exhibits a few very intriguing divergences, posing a new explicandum to the cross-linguistic study of ellipsis.

1.   Argument Ellipsis in Japanese

Before considering data in Malayalam, let us take a brief look at the examples that have led to the ellipsis analysis of null arguments (or just the argument ellipsis analysis) in Japanese. Cases like the following are used to show the possibility of object ellipsis in the language (*e* stands for a null element):

(1)   a.   Taro-wa   zibun-no hahaoya-o   aisiteiru.
              Taro-TOP self-gen   mother-ACC   love

        'Taro loves his mother.'

b. Hana-wa   *e*   nikundeiru.
   Hana-top   hate

   'lit. Hana hates *e*.'

c. Hana-wa   kanozyo-o   nikundeiru.
   Hana-TOP   her-ACC   hate

   'Hana hates her.'

As noted by Otani and Whitman (1991), null objects in Japanese permit sloppy interpretation. Thus, if anteceded by (1a), the null object construction in (1b) is ambiguous between the strict reading that Hana hates Taro's mother and the sloppy reading that Hana hates her own mother. The availability of the second construal is particularly important. The sentence in (1c) is minimally different from (1b) in containing a pronoun in the object position. If it is used in place of (1b) in the same context, it only has the strict reading. If the null object in (1b) were a pronoun, the example should be expected to be limited to the strict interpretation just like (1c). To account for the sloppy construal in (1b), proponents of the ellipsis analysis assume that the sentence so construed involves ellipsis, as shown below (strike-through   indicates ellipsis):

(2)   Hana-wa   ~~zibun-no hahaoya-o~~   nikundeiru
       Hana-TOP   self-GEN mother-ACC   hate

       'lit. Hana hates ~~self's mother~~'

It is assumed here that the sentence underlyingly has a full-fledged object, which is elided under identity with the object in the antecedent sentence to yield the null object construction.[1]

   Null subjects behave similarly, as observed by Oku (1998). Consider the following examples:

(3) a. Taro-wa [CP zibun-no hahaoya-ga eigo-o   hanasu to] omotteiru.
        Taro-TOP   self-GEN   mother-NOM English-ACC speak   that think

        'Taro thinks that his mother speaks English.'

     b. Hana-wa [CP *e* furansugo-o hanasu to]   omotteiru.
        Hana-TOP   French-ACC   speak   that   think

        'lit. Hana thinks that *e* speaks French.'

The subject of the embedded clause in (3b) is null. When (3b) is preceded by (3a), it is ambiguous between the strict and the sloppy interpretation. The possibility of the latter construal has been taken by the advocates of the ellipsis analysis to be evidence that the null

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[1] See Takahashi (2008b) and Takita (2011) for further arguments in favor of the ellipsis analysis of null objects.

subject is derived by ellipsis.

The sort of ellipsis considered here is not limited to nominal arguments. As Takahashi (2008a) observes, for instance, selected PPs are amenable to ellipsis.[2]

(4) a. Taro to   Hana-ga   [PP otagai   kara] tegami-o   moratta.
         Taro and   Hana-NOM   each.other   from   letter-ACC received

     'Taro and Hana received letters from each other.'

     b. Ken to   Yumi-wa ePP   meeru-o   moratta.
         Ken and   Yumi-TOP   e-mail-ACC received

     'lit. Ken and Yumi received e-mails.'

Though the source PP is implicit in (4b), it is understood and significantly yields the sloppy interpretation that Ken and Yumi received e-mails from each other.

The term *argument ellipsis* is so coined in part to highlight the fact, first pointed out by Oku (1998), that ellipsis cannot apply to adjuncts. This is illustrated by the following data:

(5) a. Taro-wa   subayaku   sono   mondai-o   toita.
         Taro-TOP quickly   that   problem-ACC   solved

     'Taro solved that problem quickly.'

     b. Hana-wa   kono   mondai-o   tokanakatta.
         Hana-TOP this   problem-ACC   not.solved

     'Hana did not solve this problem.'

     c. Hana-wa   subayaku kono   mondai-o   tokanakatta.
         Hana-TOP quickly   this   problem-ACC   not.solved

     'Hana did not solve this problem quickly.'

     d. Hana-wa   tokanakatta.
         Hana-TOP not.solved

     'lit. Hana did not solve.'

     e. Hana-wa   subayaku   sono   mondai-o   tokanakatta.
         Hana-TOP quickly   that   problem-ACC   not.solved

     'Hana did not solve that problem quickly.'

The sentence in (5a) contains the manner adverb *subayaku* 'quickly' and is intended to serve

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[2] Takahashi (2008a) also notes that selected CPs can be elided.

as the antecedent for (5b), where the adverb is missing. The fact here is that while (5b) means that Hana did not solve this problem, it does not mean that Hana did not solve this problem quickly: namely, the adverb is not understood in the interpretation of (5b). If it were, the sentence could be construed in the same way as (5c), where the adverb is explicitly expressed. Clearly, (5b) lacks the reading that Hana solved this problem, but not in a quick manner, which is available in (5c). Therefore, (5b) cannot be analyzed as below:

(6)   Hana-wa   ~~subayaku~~   kono   mondai-o   tokanakatta
        Hana-TOP   quickly   this   problem-ACC not.solved

        'Hana did not solve this problem ~~quickly~~'

Here the adverb is intended to be present in the sentence but elided under identity with the adverb in (5a). If (5b) could be analyzed as in (6), it should yield the same interpretation as (5c). Because (5b) cannot be interpreted like (5c), the analysis in (6) should not be allowed, and this follows if adjuncts cannot undergo ellipsis.[3]

The situation does not change even if the object is suppressed from (5b), as in (5d). If (5d) is anteceded by (5a), it can mean that Hana did not solve that problem, but crucially, it cannot mean that Hana did not solve that problem quickly. That is, (5d) cannot be interpreted like (5e), where the adverb as well as the object is explicitly repeated. The fact that the adverb is not understood in (5d) reinforces the assumption that adjuncts are not subject to ellipsis.[4]

The argument ellipsis analysis gives rise to a very important issue in the cross-linguistic research on null arguments. Once it is established that Japanese allows elliptic arguments, an immediate question to be asked is whether null arguments in other languages can be analyzed in the same way. In this regard, Oku (1998) considers the following data from Spanish, observing that null subjects in the language are not amenable to the ellipsis analysis:

(7)   a. María   cree   que   su propuesta   será   aceptada.
          Maria   believes   that her proposal   will-be   accepted

          'Maria believes that her proposal will be accepted.'

      b. Juan también   cree   que   *e*   será   aceptada.
          Juan also   believes   that   it   will-be accepted

          'Juan also believes that it will be accepted.'

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[3] As to why adjuncts cannot be elided, see Oku (1998) and Takahashi (forthcoming).

[4] Of course, adjuncts can be elided if they are contained in constituents that are eligible for ellipsis. For example, in *John solved the problem quickly, but Mary didn't*, the second sentence can mean that Mary didn't solve the problem quickly. In this case, the adverb is elided along with the other VP-internal elements by VP-ellipsis. What is argued in the text is that adjuncts themselves cannot undergo ellipsis.

Preceded by (7a), (7b) can mean that Juan believes that María's proposal will be accepted, but cannot have the reading that Juan believes that Juan's proposal will be accepted. Namely, the null subject in (7b) is not interpreted sloppily. This is in accordance with the standard view in the literature that null subjects in Spanish are empty pronouns: as noted above with regard to (1c), pronouns usually do not give rise to sloppy interpretation. If the null subject in (7b) were elliptic, it should yield the sloppy reading.

One should wonder what prevents the null subject in (7b) from being derived by ellipsis. Following Saito (2007) and Takahashi (forthcoming), I assume that agreement plays an important role in regulating the occurrence of elliptic arguments. Let us consider the following schematic representation of argument ellipsis:

(8) a. ... $F_{1\{\varphi\}}$ ... $DP_{\{\varphi, \text{Case}\}}$ ...

  b. ... $F_{1\{\varphi\}}$ ... $DP_{\{\varphi, \sout{\text{Case}}\}}$ ...

  c. ... $F_{2\{\varphi\}}$ ... ___ ...

  d. *... $F_{2\{\varphi\}}$ ... $DP_{\{\varphi, \sout{\text{Case}}\}}$ ...

The derivation of the antecedent sentence is illustrated in (8a-b), where an argument, indicated as DP, is associated with a functional head (F_1): if DP is a subject, F_1 is T; if DP is an object, F_1 is *v*. Let us assume Chomsky's (2000) theory of agreement here. Being uninterpretable, the φ-features of F_1 must be erased by entering into an agreement relation with the φ-features of DP. The Case-feature of DP plays a crucial role here, making DP active or visible for the operation. Once the agreement relation is established, the φ-features of F_1 and the Case-feature of DP, both uninterpretable, are erased as shown in (8b). Suppose now that it is followed by the elliptic sentence, the derivation of which is given in (8c-d). Saito (2007) assumes with Williams (1977) and others that ellipsis involves copying. Thus, the elliptic sentence starts off with an unfilled argument position, as shown by the underline in (8c), and it is subsequently (namely, in the covert component) filled with the argument copied from (8b), resulting in (8d). Now, a problem arises in (8d): the Case-feature of the copied DP is already erased in the antecedent sentence prior to copying, and hence it is not eligible to have an agreement relation with F_2. Consequently, the φ-features of F_2 remain to be erased, causing the derivation to crash.

This theory predicts that argument ellipsis should not be allowed in languages where functional heads such as T and *v* agree with arguments. This is borne out in Spanish, as noted above. It has (rich) agreement between subjects and T, and null subjects there cannot be elliptic. On the other hand, agreement is completely absent in Japanese. If this is taken to indicate that the relevant functional heads simply lack φ-features in the language, the sort of derivational crash noted in (8) should never happen there, so that argument ellipsis can be

permitted rather freely.[5]

Bearing these in mind, let us turn our attention to Malayalam in the next section to determine whether its null arguments can arise through ellipsis or not.

2.   Data in Malayalam

First of all, let us confirm that Malayalam is a language like Japanese where arguments such as subjects and objects can drop in finite clauses (the Malayalam data in what follows are supplied by K. A. Jayaseelan (personal communication) unless indicated otherwise).

(9)   a.   John ewiDe (pooyi)?
             John where (went)

       'Where did John go?'

       b.   *e* wiiTT-il-eek'k'ə   pooyi.
                house-LOC-DAT   went

       'He went home.'

(10)   a.   Mary entinə aaNə karayunn-atə?
             Mary why   is   cry-NMNL

       'Why is it that Mary is crying?'

       b.   John *e* s'akaar'icc-atə   kaaraNam.
             John   scold-NMNL   because

       'Because John scolded her.'

The sentences in (9b) and (10b) are intended to be replies to the questions in (9a) and (10a), respectively. In (9b), the subject is unexpressed, but it can be understood to refer to the subject in (9a). In (10b), the object is suppressed though it can be easily identified as referring to the subject in (10a).

2.1.   Object Ellipsis in Malayalam

Let us consider whether null arguments can be elliptic in Malayalam. Let us start with the following examples with null objects:

(11)   a.   John tan-te   amma-ye   sneehik'k'unnu.
             John self-GEN   mother-ACC love

       'John loves his mother.'

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[5] See Saito (2007) and Takahashi (forthcoming) for discussions related to argument ellipsis and agreement, and Kuroda (1988) and Fukui (1988) for arguments that Japanese lacks agreement.

b. Bill-um *e* sneehik'k'unnu.
    Bill-also   love

    'lit. Bill loves *e*, too.'

The antecedent sentence in (11a) contains a reflexive in the object and it refers to the subject *John* in the same sentence. (11b) is a null object construction. If preceded by (11a), it can mean either that Bill loves John's mother or that Bill loves his own mother. That is, the null object is ambiguous between the strict and the sloppy interpretation. The possibility of the latter construal indicates that the null object can arise through ellipsis.

This can be buttressed by the following data:

(12) a. aarə aaNə tann-e tanne wimars'icc-atə?
          who   is   self-ACC EMPH   criticized-NMNL

          'Who is it that criticized himself?'

    b. John *e* wimars'iccu
        John   criticized

        'lit. John criticized *e*.'

The sentence in (12a) is a *wh*-question, where the reflexive itself is the object of the verb corresponding to *criticized*. As a reply to (12a), (12b) is used and contains a null object. In this context, (12b) most naturally means that John criticized himself. Note that this fact clearly indicates that argument ellipsis is operative here. The argument ellipsis analysis deals with the data as follows (just for convenience, the Malayalam data are illustrated with English words and word order):

(13) a. Who is it that criticized self?

    b. John criticized ~~self~~.

Since the second sentence contains the reflexive in the object position, its actual interpretation is straightforwardly captured. If, on the other hand, null arguments were restricted to empty pronouns in the language, the data would have to be analyzed as below:

(14) a. Who is it that criticized self?

    b. *$John_1$ criticized pro_1

In (14b), the null object is analyzed as an empty pronoun, which should be coindexed with the subject to produce the interpretation of the sentence. But the representation should violate Condition (B) of the Binding Theory (Chomsky 1981) just like *$John_1$ loves him_1*, and would be ruled out erroneously. This consideration, therefore, provides a rather strong argument for

the availability of argument ellipsis for null objects in Malayalam.[6]

Note also that the sloppy interpretation in question can be obtained even when antecedent and elliptic sentences have different verbs, as below:

(15)   a.   John tan-te   bhaarya-ye   sneehik'k'unnu.
           John self-GEN   wife-ACC   love

           'John loves his wife.'

       b.   pakSe Bill   *e*   weRukk'unnu.
           but   Bill   hate

           'lit. But Bill hates *e*.'

Whereas the antecedent sentence in (15a) has the verb corresponding to *love*, the null object sentence in (15b) has the verb corresponding to *hate*. (15b) can have the sloppy reading that Bill hates his own wife, in addition to the strict reading that Bill hates John's wife. The possibility of the first construal indicates that the object can be elliptic.

The observation above is important in showing that elliptic null objects in Malayalam

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[6] Kannada, another Dravidian language that allows null arguments, displays an interesting set of data. The following examples are supplied by R. Amritavalli (personal communication):

(i)   a.   John   tann-a   heNDati-yannu   priitisuttaane.
           John   self-GEN   wife-ACC   loves

          'John loves his wife.'

      b.   Bill-uu   *e*   priitisuttanne.
          Bill-also   loves

         'lit. Bill loves *e*, too.'

(ii) a.   yaaru   tann-ann-ee   baidu-koND-anu?
           who   self-ACC-EMPH   cursed-REFL-3MSG

         'Who cursed himself?'

      b. *John   *e*   baidu-koND-anu.
          John   cursed-REFL-3MSG

         'lit. John cursed *e*.'

The examples in (i) are comparable to the Malayalam data in (11). Anteceded by (ia), (ib) can have the sloppy reading. This shows that Kannada allows object ellipsis, too. There is a complication, however, if we consider the Kannada counterpart of (12), which is given in (ii). The null object construction in (iib) is just ungrammatical, in contrast with (12b). Notice that unlike Malayalam, Kannada must have the reflexive morpheme on the verb if the reflexive pronoun appears in the object position, as shown in (iia). I suspect that this morphology is a kind of object agreement, which blocks ellipsis of the object in (iib).

can arise through argument ellipsis (or ellipsis of objects) rather than through so-called V-stranding VP-ellipsis (Goldberg 2005, McCloskey 1991, and Otani and Whitman 1991). Based on her detailed analysis of the null object construction in Hebrew, Goldberg (2005) contends that V-stranding VP-ellipsis is operative in the language. Consider the following examples in Hebrew, cited from Goldberg 2005:

(16) a. (Ha'im) Miryam hevi'a   et   Dvora la-xanut?
          Q   Miryam brought   ACC   Dvora to.the-store

      '(Did) Miryam bring Dvora to the store?'

      b. Ziroo, hi   hevi'a.
          yes   she brought

      'lit. Yes, she brought.'

      c. *Ziroo,   hi   lakxa.
          yes   she took

      'lit. Yes, she took.'

      d. *Lo,   hi   ŠALXA!
          no   she sent

      'lit. No, she SENT!'

The question in (16a) serves as the antecedent for each of the sentences in (16b-d). Although truncated, (16b) can mean that she brought Dvora to the store. Goldberg argues that it involves VP-ellipsis with concomitant V-raising, as shown below (English words are used just for expository purposes):

(17)   [TP she [T' [T brought-T] [VP tV Dvora to the store]]]

The main verb undergoes movement to T, and subsequently ellipsis applies to elide VP, which contains the verbal trace (or copy), the object, and the locative PP. The ungrammaticality of (16c-d) indicates that the kind of VP-ellipsis illustrated in (17) cannot take place there. Goldberg argues that V-stranding VP-ellipsis (or VP-ellipsis in general) is constrained by the requirement that the antecedent clause and the elliptic clause share the same verb. Since the verbs in (16c-d) are different from the verb in (16a), VP-ellipsis cannot apply to the sentences (see Goldberg 2005 for details).

Returning to (15), we notice that the antecedent and the elliptic sentence have different verbs. If the same verb requirement is a universal constraint, (15b) should not be able to involve VP-ellipsis. Then, the elliptic null object there must arise through ellipsis of the object itself, namely through argument ellipsis.

2.2. Subject Ellipsis in Malayalam

Let us go on to examine whether null subjects can be elliptic in Malayalam. The following are relevant data:

(18) a. John   paRaññu [tan-te   kuTTi   English   samsaarik'k'um ennə].
John   said   self-GEN child   English   will.speak   COMP

'John said that his child would speak English.'

b. Mary   paRaññu   [*e* French samsaarik'k'um ennə].
Mary   said   French will.speak   COMP

'lit. Mary said that *e* would speak French.'

(19) a. John paRaññu [tan-te   makan Microsoft-il jooli ceyy'unnu ennə]
John said   self-GEN son   Microsoft-in job   do   COMP

'John said that his son was working at Microsoft.'

b. Bill   paRaññu [*e* IBM-il   jooli ceyy'unnu ennə]
Bill   said   IBM-in job   do   COMP

'lit. Bill said that *e* was working at IBM.'

The examples in (18a) and (19a) are intended to serve as the antecedents for (18b) and (19b), respectively. While the embedded subjects contain the reflexive in the a-examples, the embedded subjects are null in the b-examples. The fact here is that (18b) and (19b) can be interpreted neither strictly nor sloppily. The only interpretations available are the ones where the null embedded subjects refer to the matrix subjects: thus, (18b) and (19b) only mean that Mary said that she (namely, Mary) would speak French and that Bill said that he (namely, Bill) was working at IBM, respectively. In particular, the impossibility of the sloppy readings indicates that null subjects cannot arise through ellipsis in Malayalam.[7]

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[7] The absence of the strict readings in (18) and (19) also demands an explanation. It seems that null subjects in Malayalam are quite different from their Japanese counterparts (see (3)) and are rather similar to null subjects in Chinese and Portuguese. For instance, consider the following example in Chinese, cited from Huang (1984):

(i) Zhangsan shuo [*e* bu renshi Lisi].
Zhangsan say   not know Lisi

'lit. Zhangsan said that *e* did not know Lisi.'

The most natural interpretation of this example is the one where the null embedded subject is bound by the matrix subject. (i) can be contrasted with the following comparable example in Japanese:

A word of caution is necessary here. The following data are minimally different from (18) in the form of the embedded subject in the antecedent sentence, but appear to allow the sloppy reading for (20b):

(20) a. John paRaññu [taan English samsaarik'k'um ennə]
John said self English will.speak COMP

'John said that he would speak English.'

b. Mary paRaññu [*e* French samsaarik'k'um ennə]
Mary said French will.speak COMP

'lit. Mary said that *e* would speak French.'

While (20a) means that John said that he (namely, John) would speak English, (20b) means that Mary said that she (namely, Mary) would speak French. The sloppy reading here is merely apparent because it can arise from binding of the null embedded subject by the matrix subject and can be obtained even when (20b) is used out of the blue without an antecedent like (20a) (see note 7). Therefore, one should not be misled by cases like (20).

We have arrived at the generalization that null subjects in Malayalam do not yield sloppy readings. This shows that subjects cannot be subject to argument ellipsis in the language. Why is Malayalam different from Japanese in this respect? Exactly like Japanese, Malayalam lacks agreement between arguments and functional heads: that is, it lacks agreement between subjects/objects and predicates (see Asher and Kumari 1997). Then it would be expected to behave like Japanese, allowing ellipsis of subjects as well as objects.

Now I argue that Malayalam does possess agreement, albeit abstract, between subjects and T. In Takahashi forthcoming, I point out that Chinese disallows subject ellipsis, and account for it by assuming that the language has agreement, though covert, between subjects and T. The following are relevant data:

(21) a. Zhangsan shuo [ziji de haizi xihuan Xiaohong].
Zhangsan say self of child like Xiaohong

'Zhangsan said his child liked Xiaohong.'

(ii) Taro-ga [*e* Hana-o sitteiru to] itta.
Taro-NOM Hana-ACC know that said

'lit. Taro said that *e* knew Hana.'

Although the reading where the null embedded subject refers to the matrix subject is possible, another interpretation where it refers to someone else is equally permissible, albeit depending on the presence of a preceding context providing such a referent. Null subjects in Malayalam may be analyzed in the same way as their Chinese counterparts à la Huang (1984) (namely, as locally controlled *pro*s, the exact identification of which is open to debate).

b. Lisi   shuo   [e   xihuan   Xiaoli].
Lisi   say   like   Xiaoli

'lit. Lisi said *e* liked Xiaoli.'

Anteceded by (21a), (21b) does not permit the sloppy interpretation that Lisi said that Lisi's child liked Xiaoli. This shows that subjects cannot be elided in Chinese.

Following Miyagawa (2010), Takahashi (forthcoming) regards the presence of the so-called blocking effect on long-distance anaphor binding as an indication of subject agreement in the language. It is known that the reflexive *ziji* 'self' can be bound long-distance, as shown below (the examples in (22) and (23) are taken from Miyagawa 2010, where they are attributed to Pan 2000):

(22)   Zhangsan   zhidao   [Lisi   dui   ziji   mei   xinxin].
Zhangsan   know   Lisi   to   self   not   confidence

'lit. Zhangsan knows Lisi has no confidence in self.'

The reflexive in the embedded clause may be bound either by the embedded subject *Lisi* or by the matrix subject *Zhangsan*. The long-distance construal, however, is blocked if the intervening subject is changed to the first person or second person pronoun, as below:

(23)   Zhangsan   juede   [wo/ni   dui   ziji   mei   xinxin].
Zhangsan   think   I/you   to   self   not   confidence

'lit. Zhangsan thinks I/you have no confidence in self.'

Here the reflexive is only bound by the embedded subject. This fact is understood as follows: suppose that *ziji* undergoes LF movement to T, where it establishes a local relation with its antecedent in the specifier position of TP (Battistella 1989, Cole, Hermon, and Sung 1990, and so on), and that when remotely bound, it undergoes successive cyclic T-to-T movement. Suppose also that the reflexive receives the value of the person feature from the T head that it attaches to first. When (22) has the long-distance interpretation, for example, *ziji* first moves to the embedded T, which assigns it the value [3rd person], and then to the matrix T to have a local relation with the intended antecedent. The person values of the reflexive and its final landing site (the matrix T) match, both being [3rd]. On the other hand, if the reflexive were to be bound by the matrix subject in (23), it would move first to the embedded T to receive the value [1st (or 2nd)] before landing at the matrix T. In this case, the person value of the reflexive, which is [1st] or [2nd], would not match that of the matrix T, which is [3rd], so that the resulting representation should be ruled out. Note that this explanation presupposes that Chinese possesses agreement between subjects and T so that T can take on the φ-feature value of the subjects.

In contrast, Japanese does not exhibit the blocking effect in question. Miyagawa (2010) points out an example of the following sort, noting that there is no blocking effect:

(24) Taro-wa   [boku/kimi-ga   zibun-no   syasin-o   totta   to]   itta.
      Taro-TOP   I/you-NOM   self-GEN   picture-ACC took   that] said

      'lit. Taro said that I/you took self's picture.'

Here, the reflexive *zibun* may take the matrix subject *Taro* as its antecedent though the intervening subject is the first or second person pronoun. This is consistent with the assumption that agreement between subjects and T is absent in Japanese and hence that subjects can undergo argument ellipsis there.[8]

Returning to Malayalam, we expect it to exhibit the blocking effect just like Chinese. This is indeed borne out, as shown by the following examples:

(25) a. John   wicaarik'k'unnu [Bill   tann-e   weRukk'unnu ennə].
          John   think   Bill   self-ACC   hate   comp

      'lit. John thinks that Bill hates self.'

      b. *John   wicaarik'k'unnu [ñaa<u>n</u>/nii   tann-e   weRukk'unnu ennə]
          John   think   I/you   self-ACC   hate   COMP

      'lit. John thinks that I/you hate self.'

In (25a), the reflexive in the embedded object position can take the matrix subject as its antecedent. This relation is blocked in (25b), where the embedded subject is changed from *Bill* to the first or second person pronoun (see Jayaseelan 1997 for more on this topic). In this respect, Malayalam is grouped with Chinese, rather than with Japanese.

Further considerations that suggest the presence of (abstract) subject-T agreement in Malayalam come from the fact that Dravidian languages usually exhibit subject-T agreement. As shown below, Kannada, Tamil, and Telugu all possess visible agreement between subjects and predicates:

(26) Kannada
      a. nannu   mathanadutthne
          I   speak

      b. naavu   mathanaduthheve
          we   speak

      c. avanu   mathanadutthaiddhane
          he   speaks

---

[8] In that case, the reflexive in Japanese must be licensed in a different way from its Chinese counterpart. At least, its licensing should not involve φ-feature valuation.

(27) Tamil
    a. naan pesukiren
        I   speak

    b. naangal pesukirom
        we   speak

    c. avan pesukiraan
        he   speaks

(28) Telugu
    a. nenu matladutaanu
        I   speak

    b. memu matladutamu
        we   speak

    c. atanu matladutadu
        he   speaks

Although Malayalam does not exhibit agreement superficially (Asher and Kumari 1997), we may assume that the language still retains it in an abstract way, its presence being detectable with such syntactic phenomena as the blocking effect on reflexive binding and the impossibility of subject ellipsis.

To summarize, I have shown in this section that Malayalam is similar to Japanese in permitting ellipsis of objects but is different from it in disallowing ellipsis of subjects. This puts Malayalam in the same group as Chinese and Turkish, which also exhibit the subject-object asymmetry with respect to argument ellipsis (see Takahashi forthcoming).

3.　Ellipsis of Adjuncts in Malayalam

If argument ellipsis is responsible for elliptic null objects in Malayalam, adjuncts should not be affected because argument ellipsis by definition is limited to arguments. Here we have a very intriguing array of facts. Let us begin with the following data:

(29) a. John nannaayi kaaRə kazhuki.
        John well   car   washed

        'John washed a car well.'

    b. Bill *e* kazhuki-(y)illa.
        Bill   washed-NEG

        'lit. Bill did not wash *e*.'

(30) a. nii innale   kaaTT-il aana-ye   kaNDu-oo?
          you yesterday   forest-LOC elephant-ACC saw-q

      'Did you see elephants yesterday in the forest?'

      b. *pro e* kaNDu.
          I   saw

      'lit. I saw *e*.'

Anteceded by (29a), (29b) can mean that Bill did not wash a car well. Similarly, if (30b) is used after (30a), its interpretation can include the temporal and the locative adjunct (that is, the sentence can mean that *I saw elephants in the forest yesterday*). This is to be contrasted with the fact in Japanese observed in (5), where the adjunct is not understood in the interpretation of the sentence comparable to (29b).

Note that the objects as well as the adjuncts are null in (29b) and (30b). Let us examine whether ellipsis of adjuncts is contingent on ellipsis of objects or not. Relevant data are provided below:

(31) a. ñaa<u>n</u> kaalə soopp-iTTə kazhuki.
          I   feet   soap-using washed

      'I washed my feet with soap.'

      b. (pakSe) awan *e* kazhuki-(y)illa.
          (but)   he   washed-NEG

      'lit. (But) he did not wash *e*.'

      c. awa<u>n</u> cevi kazhuki-(y)illa.
          he   ear   washed-NEG

      'He did not wash his ears.'

The sentence in (31a) is intended to antecede (31b-c). (31b) is a null object construction, and just as in (29b) and (30b), the adjunct in (31a) (the one corresponding to *with soap*) can be understood in its interpretation: that is, it can mean that he did not wash his feet with soap. Of special importance is the interpretation of (31c), where the object is overtly expressed. The sentence means that he did not wash his ears, but crucially does not mean that he did not wash his ears with soap: namely, its interpretation does not include the adjunct. Thus, the fact here is that whereas the adjunct can be elided in the null object construction in (31b), it cannot in (31c). Ellipsis of the adjunct is dependent on ellipsis of the object.

Another significant fact is obtained from the following data, where the antecedent and the subsequent sentence have different verbs:

(32) a. John kaaRə weegam kazhuki.
      John car   quicklywashed

      'John washed a car quickly.'

   b. Bill *e* nannaakki-(y)illa.
      Bill   repair-NEG

      'lit. Bill did not repair *e*.'

Although (32b) is a null object construction, its interpretation does not include the adjunct corresponding to *quickly*. The sentence means that Bill did not repair a car, but not that Bill did not repair a car quickly. Comparing (32) with (29), (30), and (31a-b), we arrive at the generalization that adjunct ellipsis exhibits the same verb effect (recall the discussion about (16)).

   Considering that ellipsis of adjuncts in Malayalam is contingent on null objects and is subject to the same verb requirement, we may assume that it does not involve ellipsis of adjuncts per se but rather ellipsis of a larger constituent like VP that contains adjuncts as well as objects. Given that the main verbs are overtly expressed in the relevant cases in (29b), (30b), and (31b), we are led to assume that they involve V-stranding VP-ellipsis (Goldberg 2005, McCloskey 1991, and Otani and Whitman 1991, among others). For example, (29) may be analyzed as in (33), where English glosses are used for convenience:

(33) a. $[_{TopP}$ John$_1$ well$_2$ *Topic* $[_{FocP}$ car$_3$ $[_{Foc'}$ $[_{Focus}$ washed$_V$$][_{TP}$ T $[_{vP}$ t_1 v $[_{VP}$ t_2 $[_{VP}$ t_V $t_3$$]]]]]]]$

   b. $[_{FocP}$ Bill$_4$ $[_{Foc'}$ $[_{Foc}$ not-washed$_V$$][_{TP}$ T $[_{NegP}$ *Neg* $[_{vP}$ t_4 v $[_{VP}$ well $[_{VP}$ t_V car$]]]]]]]$

Following Mathew (2012), let us assume that verbs undergo raising to the head position of Focus Phrase (FocP) in Malayalam.[9] In (33a-b), the verbs move out of VP to the head position of FocP via the intervening head positions including T, Neg (for (33b)), and *v*. In the language, focused phrases appear in the position immediately preceding verbs, as shown by the following examples cited from Jayaseelan 2001:

(34) a. ninn-e   aard aTiccu?
      you-ACC who beat

      'Who beat you?'

   b. *aard   ninn-e   aTiccu?
      who   you-ACC beat

---

[9] Jayaseelan (2010) also argues that verbs are moved to some higher position in Malayalam, but for him, the movement operation involved is not head movement of verbs but phrasal movement of an XP containing them. This analysis is put aside here just because it is difficult to see how it can be integrated with V-stranding VP-ellipsis.

Wh-phrases are usually focused. Thus, the *wh*-phrase subject must appear immediately before the verb in (34). Mathew (2012) accounts for this preverbal focus phenomenon by assuming that while verbs move to the head position of FocP, focused elements occupy its specifier position, as in (33). In (33a), the object (*car*) is understood to be focused, while the other elements, namely the subject (*John*) and the adjunct (*well*), are assumed to be moved to the specifier position (or adjoined position) of Topic Phrase (TopP). In (33b), the subject (*Bill*) is in the specifier position of FocP (or alternatively may be in TopP, depending on how it is interpreted), but the object and the adjunct remain in VP, which is elided.[10]

The analysis along these lines leads to the expectation that Malayalam, an SOV language, should allow some material to appear in post-verbal positions. This is actually attested. The following data are pointed out by Jayaseelan (2001):

(35) a. aarum   kaND-illa,   aana-ye.
          nobody   saw-NEG   elephant-ACC

         'Nobody saw the elephant.'

     b. aard   ayaccu,   ninn-e?
        who   sent   you-ACC

        'Who sent you?'

     c. ña<u>an</u> kaaNice-iTT-illa, Mary-k'k'ə aakattə.
        I   show-perf-NEG   Mary-DAT   that letter

        'I haven't shown that letter to Mary.'

     d. innale   mazha peytu,   iwiDe.
        yesterday rain   rained   here

        'It rained here yesterday.'

     e. iwiDe mazha peytu,   innale.
        here   rain   rained   yesterday

        'It rained here yesterday.'

In (35a-b), the direct objects appear post-verbally. In (35c), the dative argument and the direct object occur after the verb. (35d-e) show that adjuncts can be placed in that position, too.

The considerations above suggest that Malayalam sentences where adjuncts are elided can be analyzed in terms of V-stranding VP-ellipsis as illustrated in (33). The fact that the Japanese counterparts of the Malayalam examples in (29b), (30b), and (31b) do not allow the

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[10] In (33), the antecedent VP contains the traces (or copies) of the object and the adjunct whereas the elided VP has those elements unmoved. This sort of VP-ellipsis is permitted, as can be seen in cases like *This book, John likes*. — *I'm sure his mother doesn't*.

construals where adjuncts are implicated means that V-stranding VP-ellipsis is not available in Japanese. Kim (1999) and Oku (1998) independently argue for the absence of VP-ellipsis in Japanese, and I just follow them (interested readers are referred to those references).[11]

4.   Concluding Remarks

I have considered data in Malayalam that contain null elements. I have shown that the language is similar to Japanese in permitting object ellipsis but behaves differently with respect to ellipsis of subjects and adjuncts. Malayalam is less permissible in the sense that it does not allow subjects to be elliptic (thus, its null subjects must be *pro*s or some empty categories that need to be locally bound). I have argued that Malayalam has agreement, albeit abstract, between subjects and T, which is responsible for the fact. The language is more tolerant in the sense that it allows adjuncts to be elided. I have argued that V-stranding VP-ellipsis is available in Malayalam and that apparent cases of adjunct ellipsis actually involve VP-ellipsis. Then, the difference between Japanese and Malayalam in this respect boils down to the absence or presence of V-stranding VP-ellipsis. Following Mathew (2012), I have suggested that Malayalam possesses verb movement, which is a prerequisite for V-stranding VP-ellipsis. On the other hand, there is no strong evidence for verb raising in Japanese, and this is compatible with the line of analysis advocated in this article.

I wish to end with a few remarks about issues concerning the line of research conducted here. First of all, while the data used here to examine the availability of argument ellipsis in Malayalam, namely those pertaining to sloppy readings, are fairly clear, they should be reinforced and confirmed by additional sets of data. In a bit to provide evidence for the argument ellipsis analysis in Japanese, Takahashi (2008b) considers null arguments anteceded by quantifiers and Takita (2011) examines cases involving negative polarity items.

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[11] Unlike Malayalam, Japanese lacks the preverbal focus requirement. Thus, the Japanese counterparts of (34a-b) are both grammatical:

(i)   a.   Kimi-o   dare-ga   tataita   no?
           you-ACC   who-NOM   hit   Q

      'Who hit you?'

      b.   Dare-ga   kimi-o   tataita   no?
           who-NOM   you-ACC   hit   Q

This fact is compatible with the assumption that verbs do not undergo raising in Japanese at least in the way they do in Malayalam. On the other hand, Japanese is similar to Malayalam in that although it is also an SOV language, it sometimes allows non-verb final word order, which has been called the right dislocation construction in the literature (see Abe 1999, Takano forthcoming, and Tanaka 2001, among others). The authors just mentioned propose analyses of the phenomenon in Japanese that are totally different from the one in the text in terms of verb movement. Because I need to assume that the existence of the right dislocation construction does not lead to verb raising in Japanese, their analyses are consistent with my conjecture here.

These tests should be applied to Malayalam, too.

A second issue has to do with the impossibility of subject ellipsis in Malayalam. To account for that, I have suggested the hypothesis that the language has abstract agreement between subjects and T. This needs to be elaborated further and, if possible, supplemented with additional evidence. In 2.2 I motivated the hypothesis on the grounds that Malayalam belongs to the Dravidian family, other members of which do possess visible agreement between subjects and predicates. It might be that the agreement process in question in Malayalam has been turning from visible to abstract and may be in the course of extinction. This leads to the expectation that as the transition proceeds, the language should gradually become tolerant of subject ellipsis, like Japanese. It is interesting and important, therefore, to keep a close eye on null subjects in Malayalam.

Finally, when I considered elliptic null objects in Malayalam in 2.1, I concluded that they can arise through ellipsis of objects themselves. On the other hand, in section 3, where I examined ellipsis of adjuncts, I argued that VP-ellipsis is operative in the language. Put together, they mean that Malayalam has two ways to have elliptic objects: argument (or object) ellipsis and VP-ellipsis. Then, it should offer a rare opportunity to study the interaction of these two ellipsis processes in a single language, which, along with the other topics, is left for future research.

Although some uncertainties and challenges remain, I believe that the present study will contribute to a better understanding of the cross-linguistic distribution of elliptic arguments and facilitate further research on the topic.

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MOVEMENT OF ANTECEDENTS AND MINIMALITY

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1.   Introduction

One issue in syntax hotly debated in recent years is how to treat what has traditionally been analyzed in terms of referential dependencies. One instance of this general issue has to do with the treatment of obligatory control. The traditional approach to obligatory control claims that the subject of the control complement clause is a phonetically null pronominal element called PRO and that this PRO is controlled by an element in the higher clause, as shown in (1a). On the other hand, since Hornstein's (1999, 2001) influential work, an alternative approach has been pursued by a number of researchers according to which the controller-PRO relation is replaced by a movement relation, so that the controller moves from the subject of the control complement, as shown in (1b), where the material surrounded by angled brackets shows an unpronounced copy of the moved element.

(1)   a.   John$_i$ tried [PRO$_i$ to leave].

       b.   John thinks that <John> he is smart.

This move has also affected the analysis of binding relations. Thus, a number of authors propose that what has traditionally been analyzed in terms of binding be replaced by movement, in such a way that antecedents moves from the position of pronouns or reflexives (Hornstein 2001, Motomura 2001, Kayne 2002, Zwart 2002, Fujii 2007, Lasnik 2007, Miyamoto 2008). According to this proposal, the binding relation between *John* and *he* in (2a) should be captured in terms of movement of *John* from the position of *he*, as shown in (2b).[1]

(2)   a.   John$_i$ thinks that he$_i$ is smart.

       b.   John thinks that <John> he is smart.

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[1] There are two major proposals about what exactly happens in the subject of the embedded clause. Hornstein (2001) assimilates it to obligatory control, claiming that *John* is merged directly into the subject θ-position of the embedded clause and moves from there, with its copy spelled out as the pronoun *he*. Kayne (2002) proposes an alternative in which *he* and *John* get merged first to form a constituent and this constituent is merged into the embedded subject position, and then *John* moves out of this constituent (in fact, Kayne proposes the same analysis for obligatory control; thus, in this analysis, *John* and PRO in (1) form a constituent, this constituent is merged into the embedded subject position, and *John* moves out of this constituent to the matrix subject position). I will remain neutral on the choice between the two analyses until section 3, where I will in fact argue for Kayne's analysis.

Hornstein (2001) and Kayne (2002) argue for the movement approach to binding shown in (2b) by reducing the effects of binding conditions A, B, and C to properties of movement. One direct consequence of the movement approach, according to Kayne, is that it straightforwardly explains condition C effects of the kind shown in (3a) without appeal to condition C.

(3)   a. *He$_i$ thinks that John$_i$ is smart.

        b. <John> he thinks that John is smart.

In the movement approach, the sentence in (3a), on the intended coreferential interpretation, involves a derivation illustrated in (3b), where *John* has moved from the matrix clause to the embedded clause. This movement is an instance of lowering, which is generally prohibited in syntax. Thus, the movement approach reduces this kind of condition C effect to the general property of movement. Hornstein and Kayne discuss other effects traditionally attributed to binding conditions A, B, and C, in an attempt to capture them in terms of properties of movement of antecedents.

The purpose of this article is two-fold. First, it defends a movement approach to binding from a novel perspective. Second, it explores a theoretical issue related to the nature of movement of antecedents. The empirical evidence for a movement approach to binding comes from consideration of multiple clefting constructions in Japanese. I will show that to account for their properties, we need to consider antecedents to have moved from the position of the pronouns or reflexives they bind. The result thus lends support to a movement approach to binding. Moreover, I will show that movement of antecedents in those cases shows no minimality effects. This fact raises an interesting theoretical question. I will propose an account of this fact by looking closely at the nature of antecedent movement.

This paper is organized as follows. In section 2, I will show that certain facts about multiple clefting in Japanese provides a new argument in favor of the hypothesis that antecedents move from the position of pronouns/reflexives. In section 3, I will propose an analysis of the absence of minimality effects with A-movement of antecedents by capitalizing on the hypothesis that antecedent movement is movement from a non-θ-position to a θ-position. I will then extend this analysis to A-movement in copy raising constructions in English, which, unlike antecedent movement, does show minimality effects. In section 4, I will conclude the discussion.

2.   New Evidence for Antecedent Movement: Multiple Clefting in Japanese

In this section, I provide an argument in favor of a movement approach to binding from a novel perspective, by considering the effects of (phonetically null) pronouns and the

(nonlocal) reflexive *zibun* on multiple clefting in Japanese.[2] Let us begin by looking at properties of cleft constructions in Japanese.

Japanese has a cleft construction that freely allows multiple elements to appear in the focus position. The examples in (4b, c) are cleft sentences formed on the basis of the simple sentence in (4a).

(4)   a. Ken-ga   Mari-ni   hon-o   ageta.
           Ken-NOM Mari-DAT book-ACC gave

           'Ken gave a book to Mari.'

    b. Ken-ga   hon-o   ageta no-wa Mari-ni da.
           Ken-NOM book-ACC gave   C-TOP Mari-DAT COP

           'It is to Mari that Ken gave a book.'

    c. Hon-o   ageta no-wa   Ken-ga   Mari-ni da.
           book-ACC gave C-TOP   Ken-NOM Mari-DAT COP

           (Lit.) 'It is Ken to Mari that gave a book.'

In (4b) the dative object appears in the focus position between the topic marker and the copula and in (4c) the subject and the dative object appear there. (4c) is an instance of multiple clefting.

There are two properties of this type of cleft construction relevant for the present discussion. First, this type of cleft construction involves movement of the focus element (Hoji 1987).[3] Second, in multiple clefting, the focus elements must be clausemates (Koizumi 1995,

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[2]   There are three previous studies based on Japanese that argue for a movement approach to binding. Motomura (2001) first proposes that certain properties of the reflexive *zibun* can be derived in a uniform way under the hypothesis that the antecedent undergoes overt A-movement from the position of *zibun*. Miyamoto (2008) then argues that the effects of bound pronouns on scope interactions between *wh*-phrases and quantifiers in English of the kind discussed by Sloan (1991) can be accounted for under a movement approach to binding (see also Lasnik 2007), and extends the analysis to similar effects caused by Japanese *zibun*. More recently, Abe (2009, 2012) has proposed that the relation between a null subject and its antecedent in Japanese be analyzed in terms of A-movement of the antecedent. Abe (2012) also proposes that in certain cases, A-movement of the antecedent produces a chain where its tail, not its head, is pronounced, yielding "backward binding."

[3]   To be precise, Hoji (1987) proposes an analysis in which the focus element is base-generated in the focus position and a null operator corresponding to the focus element moves inside the presuppositional clause. In this analysis, the sentence in (4b) has the structure shown in (i).

(i)   [CP Op$_i$ [TP Ken-ga <OP> hon-o ageta] no]-wa Mari$_i$-ni da.

An alternative analysis has been proposed by Hasegawa (1997) and Hiraiwa and Ishihara (2002) according to which the focus element itself moves (leftward) to a focus position, followed by

2000).[4] The contrast between (6) and (7), both of which are formed on the basis of the sentence in (5), shows the second property.

(5) Masao-ga   Yumi-ni [Ken-ga   Mari-ni   hon-o   ageta   to] itta.
     Masao-NOM Yumi-DAT Ken-NOM Mari-DAT book-ACC gave   that told

     'Masao told Yumi that Ken gave a book to Mari.'

(6) a. [Ken-ga   Mari-ni   hon-o   ageta   to]   itta   no-wa
          Ken-NOM   Mari-DAT   book-ACC   gave   that   told   C-TOP
          Masao-ga   Yumi-ni   da.
          Masao-NOM   Yumi-DAT   COP

          (Lit.) 'It is Masao Yumi that told that Ken gave a book to Mari.'

     b. Masao-ga   Yumi-ni   [Ken-ga   ageta   to]   itta   no-wa
          Masao-NOM   Yumi-DAT   Ken-NOM   gave   that   told   C-TOP
          Mari-ni   hon-o   da.
          Mari-DAT   book-ACC   COP

          (Lit.) 'It is to Mari a book that Masao told Yumi that Ken gave.'

(7) a. *Masao-ga   [Ken-ga   Mari-ni   ageta   to]   itta   no-wa
          Masao-NOM   Ken-NOM   Mari-DAT   gave   that   told   C-TOP
          Yumi-ni   hon-o   da.
          Yumi-DAT   book-ACC   COP

          (Lit.) 'It is Yumi a book that Masao told that Ken gave to Mari.'

(leftward) movement (topicalization) of a remnant to a higher topic position. In this analysis, the sentence in (4b) is derived as shown in (ii).

(ii) a.   Ken-ga Mari-ni hon-o ageta no da.   → movement of focus phrase

      b.   Mari-ni Ken-ga <Mari-ni> hon-o ageta no da.   → topicalization of remnant

      c.   [$_X$ Ken-ga <Mari-ni> hon-o ageta no]-wa Mari-ni <X> da.

Here I am not committed to either alternative, though I use the term "movement of the focus element" for expository purposes.

[4] There are two major proposals to derive this generalization. One proposal is made by Koizumi (1995, 2000) and Kuwabara (1996), and an alternative is proposed by Takano (2002). For present purposes, it is sufficient to simply assume the generalization.

b. *Yumi-ni   [Ken-ga   hon-o   ageta to]   itta   no-wa
Yumi-DAT   Ken-NOM   book-ACC   gave that   told   C-TOP
Masao-ga   Mari-ni da.
Masao-NOM   Mari-DAT COP

(Lit.) 'It is Masao to Mari that told Yumi that Ken gave a book.'

In (6) the two focus elements come from the same clause, whereas in (7) they come from different clauses. Only the examples in (6) are grammatical. Thus, there is a clausemate restriction imposed on Japanese multiple clefting.

However, there are exceptions to this generalization. One exception has been pointed out by Takano (2002), who observes that (8b) is acceptable, in contrast to (8a).[5]

(8)   a. *[Bill-ga   a-eru   to]   omotteiru no-wa John-ga   Mary-ni   da.
          Bill-NOM   meet-can that   think   C-TOP   John-NOM Mary-DAT COP

(Lit.) 'It is John Mary that thinks that Bill can meet.'
(John thinks that Bill can meet Mary.)

    b. [pro$_i$ a-eru   to]   omotteiru no-wa   John$_i$-ga Mary-ni   da.
               meet-can that   think   C-TOP   John-NOM Mary-DAT COP

(Lit.) 'It is John Mary that thinks that he can meet.'
(John thinks that he can meet Mary.)

The unacceptability of (8a) is consistent with the clausemate restriction, but the acceptability of (8b) constitutes an apparent counterexample to it. The crucial factor that makes (8b) acceptable seems to be the presence of a phonetically null pronoun (pro) bound by the matrix subject. In fact, the example is acceptable only on the reading on which the pro is bound by the matrix subject *John*; if the pro refers to some other person, the sentence is unacceptable.

Although Takano (2002) discusses only (8b), the effect is quite general (see also Kuno 2007). For example, it is not just a pro that has this effect; the overt reflexive *zibun* also works the same way:[6]

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[5] The judgments are relative. The example in (8a) sounds better than those in (7), but I abstract away from this difference, marking (8a) with a star. What is important is the contrast between (8a), which is degraded, and (8b), which is perfectly acceptable. The same reservation holds throughout this article.

[6] In Takano (2002: note 16), I judged (9) to be slightly degraded, as compared with (8b). Although there may be a slight difference between the two in this direction, I believe now that (9) is fairly acceptable and contrasts significantly with (8a). As also noted in Takano 2002: note 16, the sentence becomes unacceptable if we replace *zibun* in (9) with the overt pronoun *kare* 'he':

(9)　　[Zibun_i-ga　a-eru　　to]　　omotteiru　no-wa　John_i-ga　　Mary-ni　　da.
　　　　 self-nom　　meet-can that　 think　　　C-TOP　John-NOM　　Mary-DAT　COP

　　　　(Lit.) 'It is John Mary that thinks that he can meet.'
　　　　(John thinks that he can meet Mary.)

The following examples show the same point.

(10)　a. *Ken_i-ga　　　[pro_i/zibun_i-ga　iku　to]　　itta　no-wa
　　　　　Ken-nom　　　　　self-NOM　　go　　that　　told　C-TOP
　　　　　Yumi-ni　　America-e　　da.
　　　　　Yumi-DAT　America-to　COP

　　　　　(Lit.) 'It is Yumi to America that Ken told that he would go.'
　　　　　(Ken told Yumi that he would go to America.)

　　　b. Yumi-ni　　[pro_i/zibun_i-ga　iku　to]　　itta　no-wa
　　　　　Yumi-DAT　　　　self-NOM　　go　　that　　told　C-TOP
　　　　　Ken_i-ga　　America-e　　da.
　　　　　Ken-NOM　　America-to　COP

　　　　　(Lit.) 'It is Ken to America that told Yumi that he would go.'
　　　　　(Ken told Yumi that he would go to America.)

(11)　a. *Yumi_i-ni　　[pro_i　iku-beki　da　to]　　itta　no-wa
　　　　　Yumi-DAT　　　　　go-should　COP　that　told　C-TOP
　　　　　Ken-ga　　　Amerika-e　　da.
　　　　　Ken-NOM　　America-to　　COP

　　　　　(Lit.) 'It is Ken to America that told Yumi that she should go.'
　　　　　(Ken told Yumi that she should go to America.)

(i) *Kare_i-ga　a-eru　　　to　　omotteiru　no-wa　John_i-ga　　Mary-ni　da.
　　he-NOM　　meet-can　that　think　　　C-TOP　John-NOM　Mary-DAT COP

　　(Lit.) 'It is John Mary that thinks that he can meet.'
　　(John thinks that he can meet Mary.)

However, it seems that (i) is unacceptable for reasons having nothing to do with multiple clefting. It is very hard, to begin with, for *kare* in the presuppositional clause to be interpreted as coreferential with a focus element, as shown in (ii).

(ii) Mary-ga　kare-no syasin-o　　miseta　no-wa　John-ni　　da.
　　Mary-NOM　he-GEN picture-ACC　showed　C-TOP　John-DAT　COP

　　'It is to John that Mary showed his picture.'

The cleft sentence in (ii) has a single focus. The sentence is acceptable if *kare* takes a discourse antecedent, but is unacceptable if it takes *John* as its antecedent. The sentence in (i) is probably unacceptable for whatever reason makes coreference between *kare* and *John* impossible in (ii).

b. Ken-ga   [pro_i iku-beki   da   to]   itta   no-wa
    Ken-NOM   go-should COP that told   C-TOP
    Yumi_i-ni Amerika-e   da.
    Yumi-DAT   America-to   COP

(Lit.) 'It is Yumi to Americal that Ken told that she should go.'
(Ken told Yumi that she should go to America.)

The deviance of (10a) and (11a) can be attributed to the clausemate restriction, given that the two focus elements come from different clauses. The improved status of (10b) and (11b), on the other hand, apparently runs counter to this restriction. The factor distinguishing (10a)/(11a) and (10b)/(11b) is the presence/absence of a binding relation between the focus element from the matrix clause and a pro/reflexive in the embedded clause.[7]

Furthermore, apparent counterexamples to the clausemate restriction are not limited to cases having a pro/reflexive in the subject of the embedded clause. They can also be found in cases where a pro/reflexive is in the object of the embedded clause. The examples in (12) duplicate the patterns in (8) and (9).

(12)   a. *[Masao-ga   Mari-o   suisensu-beki   da   to]   omotteiru no-wa
           Masao-NOM Mari-ACC recommend-should COP that think   C-TOP
           Ken-ga   sono   kaisya-ni   da.
           Ken-NOM   that   company-DAT COP

(Lit.) 'It is Ken to that company that thinks that Masao should recommend Mari.'
(Ken thinks that Masao should recommend Mari to that company.)

       b. [zibun_i-ga Mari-o   suisensu-beki   da   to]   omotteiru no-wa
           self-NOM   Mari-ACC recommend-should COP that think   C-TOP
           Ken_i-ga   sono   kaisya-ni   da.
           Ken-NOM   that   company-DAT COP

(Lit.) 'It is Ken to that company that thinks that he should recommend Mari.'
(Ken thinks that he should recommend Mari to that company.)

Now observe (13).

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[7] We cannot use the reflexive *zibun* in the embedded subject in (11) because *zibun* is subject-oriented and hence cannot have a matrix object as its antecedent.

(13) ?[Masao-ga   zibun$_i$-o   suisensu-beki   da   to]   omotteiru no-wa
    Masao-NOM   self-ACC   recommend-should   COP   that   think   C-TOP
    Ken$_i$-ga   sono   kaisya-ni   da.
    Ken-NOM   that   company-DAT   COP

    (Lit.) 'It is Ken to that company that thinks that Masao should recommend him.'
    (Ken thinks that Masao should recommend him to that company.)

This example, like the one in (12b), improves on (12a) though the reflexive is placed in the direct object of the embedded clause.[8]

So far we have seen that the presence of a pronominal (a pro or a reflexive) in an embedded clause that is bound by the matrix element saves the example from violating the clausemate restriction. However, it is not the case that the mere presence of a bound pronominal in an embedded clause ensures this effect.[9] To see this, let us consider (14).

(14)   a. *[Masao-ga   [Yumi-ga   au   koto]-o   yurusite-kureru   to]
      Masao-NOM   Yumi-NOM meet   C-ACC   permit-give   that
      omotteiru   no-wa   Ken-ga   Mari-ni   da.
      think   C-TOP   Ken-NOM   Mari-DAT   COP

      (Lit.) 'It is Ken Mari that thinks that Masao will permit Yumi to meet.'
      (Ken thinks that Masao will permit Yumi to meet Mari.)

    b. ?[Masao-ga   [pro$_i$/zibun$_i$-ga   au   koto]-o   yurusite-kureru   to]
      Masao-NOM   self-NOM   meet   C-ACC   permit-give   that
      omotteiru   no-wa   Ken$_i$-ga   Mari-ni   da.
      think   C-TOP   Ken-NOM   Mari-DAT   COP

      (Lit.) 'It is Ken Mari that thinks that Masao will permit him to meet.'
      (Ken thinks that Masao will permit him to meet Mari.)

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[8] There may be a slight difference between (12b) and (13), such that (13) is a little worse than (12b). Here I take the improvement of (13) over (12a) to be an important fact that calls for an explanation. Note also that it is not easy to use a pro in place of *zibun* in (13) due to the intervening fact that coreference between *Ken* and the embedded object pro is hard to get. This is because coreference between the matrix subject and the embedded object pro is not natural in its noncleft counterpart in (i) (see Kuroda (1965), Huang (1984), and Hasegawa (1985) for discussion of this fact in Japanese).

(i)   Ken-ga   [Masao-ga   sono kaisya-ni   pro   suisensu-beki   da   to]   omotteiru.
    Ken-NOM Masao-NOM that company-DAT   recommend-should COP that think

    'Ken thinks that Masao should recommend him/her/them/etc. to that company.'

It is very hard to interpret the pro in (i) to refer to Ken.

[9] I thank Mamoru Saito for bringing this point to my attention.

Each of these examples contains two embedded clauses. (14a) violates the clausemate restriction and is indeed unacceptable. (14b), on the other hand, has a pronominal bound by the matrix subject in the lower embedded clause and it does improve on (14a). Compare now (14b) with (15).

(15) *[pro$_i$/zibun$_i$-ga   [Masao-ga   au   koto]-o   yurusu-beki   da   to]
      self-NOM   Masao-NOM   meet   C-ACC   permit-should   COP   that

    omotteiru   no-wa   Ken$_i$-ga   Mari-ni   da.
    think   C-TOP   Ken-NOM   Mari-DAT   COP

(Lit.) 'It is Ken Mari that thinks that he should permit Masao to meet.'
(Ken thinks that he should permit Masao to meet Mari.)

Like (14b), (15) has a pronominal bound by the matrix subject, but here it is in the higher embedded clause and the sentence is much worse than (14b). This shows that the mere presence of a bound pronominal does not save the example from violating the clausemate restriction. In fact, the examples that we have seen so far indicate that the saving effect can be seen only when the bound pronominal is a clausemate with the focus element from an embedded clause. In (8b), (9), (10b), (11b), (12b), (13), and (14b), this situation obtains, but in (15), it does not.

These observations lead us to the following generalization about the clausemate restriction on multiple clefting.[10]

(16) X, Y = focus elements in a multiple cleft
When X is from the matrix clause and Y is from an embedded clause, the sentence is acceptable only if (i) there is a pronominal bound by X and (ii) the pronominal is a clausemate with Y.

The next question is, why should this be the case?

We can derive this generalization straightforwardly under a movement approach to binding, in which the matrix element in question moves from the position of the pronominal it binds. Thus, under a movement approach, the example in (17a) receives the analyses given in (17b, c).

(17) a. Ken$_i$-ga   [pro$_i$/zibun$_i$-ga   Mari-ni   a-eru   to]   omotteiru.
     Ken-NOM   self-NOM   Mari-DAT   meet-CAN   that   think

    'Ken thinks that he can meet Mari.'

   b. Ken-ga [<Ken-ga> pro Mari-ni a-eru to] omotteiru

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[10] Kuno (2007) puts forward a similar generalization. While Kuno's generalization is restricted to cases where the "pronominal" in (16) is phonetically null (i.e., PRO, pro, or trace), the present generalization also covers cases where it is overt (i.e., *zibun*).

c. Ken-ga [<Ken-ga> zibun-ga Mari-ni a-eru to] omotteiru

In the analyses in (17b, c), the unpronounced copy of *Ken* and *Mari* are clausemates. Thus, there is a stage in the derivation at which *Ken* and *Mari* are clausemates. Then the generalization in (16) falls into place: the apparent exceptions to the clausemate restriction all meet the restriction before movement of the matrix element. Given that movement of antecedents plays an essential role in this account, this result argues for a movement approach to binding.

We cannot achieve the same result under a nonmovement approach to binding, where the relevant matrix element stays in the matrix clause throughout the derivation. In such an analysis, (8b), (9), (10b), (11b), (12b), (13), and (14b) would violate the clausemate restriction and hence their acceptability would be left unaccounted for.

There are two consequences that follow immediately from this proposal. First, the cases falling under (16) show that A-movement out of a CP is possible. In those cases, the antecedent moves out of an embedded clause that is clearly a CP (as evidenced by the presence of an overt complementizer). It is also clear that the antecedent undergoes A-movement, given that it moves to a θ-position in the matrix clause. Bošković (2007) and others cited there claim, on various grounds, that A-movement should be allowed to take place out of a CP. The present proposal lends additional support to their claim.

Another consequence is that movement of antecedents shows no minimality effects. This can be seen clearly in (10b), (13), and (14b), where A-movement of the antecedent crosses an intervening argument (a matrix object in the case of (10b) and an embedded subject in the case of (13) and (14)). It is this property that I will turn to in the next section.

3. Minimality Effects

3.1. The Absence of Minimality Effects with Antecedent Movement

Kayne (2002) observes that movement of antecedents does not obey minimality. This is obvious in cases like (18).

(18)   John thinks that Mary likes him.

The movement approach dictates that the coreferential reading arise from movement of *John* from the position of *him* past *Mary*, in apparent violation of minimality.

Japanese multiple clefting leads us to the same conclusion. Let us consider (19), repeated from (10b), (13), and (14b).

(19) a. Yumi-ni   [pro$_i$/zibun$_i$-ga   iku   to]   itta   no-wa
      Yumi-DAT   self-NOM   go   that   told   C-TOP
      Ken$_i$-ga   America-e   da.
      Ken-NOM   America-to   COP

      (Lit.) 'It is Ken to America that told Yumi that he would go.'
      (Ken told Yumi that he would go to America.)

  b. ?[Masao-ga   zibun$_i$-o suisensu-beki   da   to]   omotteiru   no-wa
       Masao-NOM   self-ACC   recommend-should   COP   that   think   C-TOP
      Ken$_i$-ga   sono   kaisya-ni   da.
      Ken-NOM   that   company-DAT COP

      (Lit.) 'It is Ken to that company that thinks that Masao should recommend him.'
      (Ken thinks that Masao should recommend him to that company.)

  c. ?[Masao-ga   [pro$_i$/zibun$_i$-ga   au   koto]-o   yurusite-kureru   to]
       Masao-NOM   self-NOM   meet   C-ACC   permit-give   that
      omotteiru   no-wa   Ken$_i$-ga   Mari-ni   da.
      think   C-TOP   Ken-NOM   Mari-DAT COP

      (Lit.) 'It is Ken Mari that thinks that Masao will permit him to meet.'
      (Ken thinks that Masao will permit him to meet Mari.)

In these cases, *Ken* must have originated from the position of the pronominal (otherwise, the sentences would violate the clausemate restriction) and moved to positions where it is assigned a subject θ-role by *itta* 'told' and *omotteiru* 'think.' This means that *Ken* has undergone A-movement. Note that this A-movement of *Ken* crosses A-positions filled by *Yumi* and *Masao*. The movement thus apparently does not obey minimality, contrasting with standard A-movement, which does obey minimality, as in (20).

(20) a. John seems to be likely [<John> to win].

  b. *John seems it is likely [<John> to win].

These observations are consistent with Kayne's (2002: 161) suggestion that there are no minimality effects with antecedent movement. But why should this be so?

Note that movement of controllers (under a movement approach to control) does obey minimality. Hornstein (1999, 2001) argues that minimal distance effects of the kind seen in (21b, c) follow from minimality.

(21) a. John told Mary to read the book.

  b. John told Mary [<Mary> to read the book]

c. *John told Mary [<John> to read the book]

(21b) is a possible derivation for (21a), but (21c) is not. Hornstein argues that under the movement approach, (21c) is excluded because movement of *John* past *Mary* is blocked by minimality.

Exactly the same effects can be seen in Japanese as well. Thus, for the sentence in (22a), (22b) is a possible derivation, but (22c) is not.

(22) a. Ken-ga   Mari-ni   sono   hon-o   yomu   yooni itta.
          Ken-NOM   Mari-DAT   that   book-ACC   read   C   told

          'Ken told Mari to read the book.'

      b. Ken-ga Mari-ni [<Mari> sono hon-o yomu yooni] itta

      c. *Ken-ga Mari-ni [<Ken> sono hon-o yomu yooni] itta

This shows that in Japanese, as in English, A-movement of controllers obeys minimality.[11]

One possibility that comes to mind is to account for the lack of minimality effects in (19) by appealing to scrambling (see Motomura 2001 for a proposal of this kind in a different context). It is well known that Japanese scrambling shows no minimality effects. If movement of *Ken* in (19) could make use of scrambling before it reached a θ-position in the matrix clause, the apparent minimality violations would be accounted for. However, this is not the right move, given (22). In (22) movement of the controller does obey minimality. If scrambling were available for A-movement to a θ-position, (22c) should be a possible derivation for (22a), contrary to fact.   Another problem with this move is that it cannot cover antecedent movement in languages like English without scrambling (see (18)). Thus, we need to seek some other way to account for the lack of minimality effects with antecedent movement.

What makes antecedent movement different from other A-movement? Noting this puzzle, Kayne (2002: note 36) suggests that antecedent movement is not subject to minimality because it is not an instance of attraction. Kayne's suggestion is based on the assumption that A-movement usually involves attraction and that minimality effects follow from the mechanisms of attraction (such as attracting closest possible elements). However, given recent work on movement, the validity of this assumption is not clear. Bošković (2007), for instance, proposes a system in which A-movement does not involve attraction and the sole driving force for A-movement is a Case-related property of the moving DP, not a property of a higher head. Another possibility is put forward by Chomsky (2008), who claims that Internal Merge (i.e., movement) is as free as external Merge (i.e., base generation). On this view, too, it is in principle possible for A-movement to occur without attraction.

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[11] See Fujii (2006), Takano (2010), and Takita (to appear) for arguments in favor of a movement approach to control in Japanese.

Given this state of affairs, I pursue Kayne's (2002) intuition (that antecedent movement lacks something common to standard A-movement) in a way that does not rest on attraction. Note first that the observations so far indicate clearly that minimality effects cannot be explained in terms of such notions as A-position and A-movement: with those notions, we cannot distinguish antecedent movement from other A-movement. This point thus strengthens the claim made by Bošković (2007: note 24) that Relativized Minimality should be relativized not with respect to the A/A' distinction but with respect to the features involved (see also Rizzi 2004). I adopt this approach to minimality.

Recall from section 2 that A-movement of antecedents can cross CP boundaries. In the following discussion, I assume with Bošković (2007) and others cited there that A-movement out of a CP proceeds by way of a specifier of C. In other words, "improper movement" of this kind is in principle possible.

Given these assumptions, minimality effects can be seen as arising when an element with some feature crosses another element with the same feature. Under standard assumptions, the feature relevant to minimality for A-movement is a Case feature. Thus, for present purposes, I assume the following generalization about minimality for A-movement (cf. Rizzi 2004).

(23)   … X … Z … Y
        A-movement of Y to X is blocked if Z intervenes between X and Y, and both Y and Z have Case features.

Following Rizzi (2004), let us assume that the notion of intervention is defined in terms of c-command, as in (27).

(24)   Z intervenes between X and Y iff Z c-commands Y and Z does not c-command X.

With this in mind, let us consider what property makes the right distinction between antecedent movement and other A-movement. (25) summarizes what appear to be clear properties of the three types of A-movement under consideration.[12]

(25)   a.   Standard A-movement
              The DP receives a θ-role in its base position and enters into Case licensing in its landing site.

        b.   Movement of controllers
              The DP receives a θ-role in its base position as well as in the course of movement, and enters into Case licensing in its landing site.

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[12]   Here I use the term "Case licensing" as a cover term for checking, agreement, or valuation.

  c. Movement of antecedents
    The DP receives a θ-role in the course of movement and enters into Case licensing
    in its landing site.

We can see that the two properties listed in (25c) cannot distinguish antecedent movement from the other two: the first property is shared by movement of controllers and the second by both standard A-movement and movement of controllers.

  This leaves us with a possibility that what makes antecedent movement special has to do with what happens in the base position. The question then boils down to how exactly to treat pronominals under a movement approach to binding. Recall from note 1 that there are two previous proposals about this. These are shown in (26) and (27).

(26) John thinks that he(=<John>) is smart.

(27) John thinks that [<John> he] is smart.

The analysis in (26) is due to Hornstein (2001) and the one in (27) to Kayne (2002). Details aside, Hornstein claims that the antecedent *John* is directly merged into a subject θ-position of the embedded clause and then copied onto a subject θ-position of the matrix clause, with the pronoun *he* inserted, as a last resort, in place of the copy *John* in the embedded subject when direct A-movement from that position is impossible (if direct A-movement is possible, the original position is realized as a reflexive). On the other hand, Kayne proposes that the antecedent first gets merged with the pronoun, forming the constituent [*John he*], that this constituent is merged into a subject θ-position of the embedded clause, and that the antecedent moves out of this constituent to the matrix clause, leaving a copy in the usual way. In the following discussion, I assume that the relevant constituent [*John he*] is a DP.

  Let us adopt the widely accepted view that a crucial factor driving A-movement of a DP is that the DP has a Case feature that is yet to be licensed. This favors Kayne's analysis in (27). In this analysis, the DP [*John he*] is licensed for its Case in the embedded clause. Following Kayne, let us further assume that the pronoun *he* is the head of this DP.[13] Then the pronoun is licensed for its Case in the embedded clause, but the antecedent is not. Thus, the antecedent *John* has the property that drives A-movement.

  Note also that under Kayne's analysis, the subject θ-role of *smart* is assigned to the DP [*John he*]. Since *he* is the head of this DP, it does not need an independent θ-role. But *John* lacks a θ-role in its base position. In other words, antecedent movement is characterized as movement from a non-θ-position to a θ-position. I propose that this is the crucial factor that

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[13] There are a number of possibilities regarding the internal structure of the DP in question. One possibility is that the pronoun *he* is literally the head D of the DP, with possibly a phonetically null NP complement. Alternatively, the pronoun *he* is a noun selected by a phonetically null D. In this case, the DP is an "extended" projection of the pronoun *he* and *he* is the "head" of the DP in the extended sense. Like Kayne (2002), I abstract away from the details of the internal structure of the DP.

distinguishes antecedent movement and other A-movement: the moving DP receives a θ-role in its base position in the case of standard A-movement and controller movement, but it does not in the case of antecedent movement.

To implement this idea, I propose (28).

(28)   θ-roles make the Case features of DPs visible to the computation.

The idea here is a reinterpretation of "visibility" to θ-role assignment proposed by Chomsky (1981: chap. 6). Chomsky proposes to derive the Case Filter from the θ-Criterion, claiming that for an argument to receive a θ-role at LF, it must be "visible" at LF and that an argument is visible at LF only if it is assigned Case at S-structure.[14] Thus, on Chomsky's original view, Case has the effect of making DPs visible to θ-role assignment. The proposal in (28) also takes the relation between Case and θ-role seriously, but in a way opposite to Chomsky's view. It works roughly as follows. Given (28), we understand that "Case features" in (23) mean visible Case features. Suppose a DP with a Case feature enters a derivation. Usually this DP is merged into a θ-position. Thus, given (28), the Case feature of this DP is visible to the computation. As a result, minimality effects arise, due to (23), if this DP is to move over another DP with a visible Case feature. This is the situation with standard A-movement and controller movement. A different situation arises with antecedent movement. The antecedent DP with a Case feature is first merged with a pronoun and the resulting DP containing the two is then merged into a θ-position. The antecedent DP lacks a θ-role inside the larger DP headed by the pronoun. Thus, when the antecedent DP undergoes movement, its Case feature is invisible to the computation, due to (28). It is not until it moves to a θ-position that its Case feature becomes visible. In other words, the computation treats the antecedent DP, up to a θ-position, as an element without a Case feature. As a result, the antecedent can move freely up to a θ-position over DPs with visible Case features without causing minimality effects.

Let us look at concrete examples. Under this proposal, nothing special needs to be said about standard A-movement, as in (29).

(29)   John seems to be likely [<John> to win]

The Case feature of the DP *John* becomes visible when the DP gets merged into the subject θ-position in the embedded clause. A-movement of *John* from that position to the matrix clause does not cause a minimality violation since it does not cross any element with a Case feature.

Obligatory control cases fall into place, too. Let us consider the grammatical case in (30).

(30)   John told Mary [<Mary> to leave]

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[14]   Chomsky's (1981) original proposal is couched in terms of chains. I abstract away from this aspect of his proposal.

The Case feature of *Mary* is visible in the embedded clause. A-movement of *Mary* to the matrix clause does not cross any element with a Case feature. Thus, the sentence can be derived without causing problems.

Consider the ungrammatical derivation in (31).

(31)   *John told Mary [<John> to leave]

Here the Case features of *John* and *Mary* are visible before *John* moves. As a result, movement of *John*, which has a visible Case feature, over *Mary*, which also has a visible Case feature, causes a minimality violation.

Let us consider the superraising case in (32).

(32)   *John seems it is likely [<John> to win]

A-movement of *John* crosses the expletive *it*. *John* has a visible Case feature when it crosses the expletive. What about the expletive? Intuitively, the visibility condition in (28) is a condition on elements that require θ-roles. Expletives do not require θ-roles (in fact, they are incompatible with θ-roles). Therefore, they fall outside the condition in (28) and their Case features are inherently visible. Let us make it a concrete proposal, revising (28) to (33).[15]

(33)   The Case feature of a DP is visible to the computation iff the DP satisfies the θ-Criterion.

The θ-Criterion relevant to (33) is (34).

(34)   An argument must receive a θ-role.

(33) has the same effects as (28) for argument DPs. For expletives, (33) claims that their Case features are visible from the beginning because they satisfy the θ-Criterion vacuously. Given (33), *John* in (32), which has a visible Case feature, moves over an element with a visible Case feature, namely, the expletive *it*, thereby causing a minimality violation.

Let us turn now to movement of antecedents. Let us consider the sentence in (35) on the reading on which *John* is an antecedent of *him*.

(35)   John thinks that Mary likes him.

Under a movement approach a la Kayne (2002), this sentence is derived in the following way. First, *John* and *him* are merged, forming the DP [*John him*]. Then the DP [*John him*] is merged into the object of *likes*. After the derivation forms the matrix vP, the antecedent DP *John* moves to Spec,v, where it receives a subject θ-role. Note that in this part of the derivation, *John* moves over *Mary*, which has a visible Case feature. However, due to (33),

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15   This idea was suggested to me by Tomohiro Fujii.

the Case feature of *John* is invisible to the computation when it moves over *Mary*. Its Case feature becomes visible only in Spec,v in the matrix clause. As a result, A-movement of *John* over *Mary* does not cause a minimality violation.

A question arises here. Given that the Case feature of *John* is invisible up to Spec,v in the matrix clause, what drives movement of *John* to that position? There are two possibilities. One is that θ-roles can be a driving force for A-movement, as in Hornstein's (1999, 2001) theory. Since *John* has no θ-role, it moves to a θ-position to receive a θ-role (on this view, we need to assume that the moving element has a driving force; see Bošković 2007 for arguments in favor of this view). Another possibility is to assume with Chomsky (2008) that internal Merge (i.e., movement) is as free as external Merge (i.e., base generation). In this alternative, movement of *John* can take place without a driving force, so that it can move to Spec,v by means of internal Merge.[16] Either way, we can derive the desired results.

In the present analysis, the visibility condition in (33) plays a crucial role in accounting for the lack of minimality effects with antecedent movement. This analysis is made possible under Kayne's (2002) theory, where the antecedent and the pronoun are first merged to from a constituent, which is in turn merged into a θ-position. Thus, the present proposal lends independent support to Kayne's theory.

There is another consequence. The proposed account of the lack of minimality effects in terms of (33) makes crucial reference to whether a given DP has received a θ-role at a given stage of a derivation. This information has to be available through the course of a derivation. Thus, thematic information is not just an interface property but plays a role in the core computation as well.

3.2. The Presence of Minimality Effects with Copy Raising

The analysis that I have just proposed claims that the example in (35) does not violate minimality because the Case feature of *John* is invisible to the computation when it crosses the argument DP *Mary*. The invisibility of the Case feature is ensured by (33). Crucial here is the analysis, due to Kayne (2002), in which the antecedent and the pronominal form a DP that is merged into a θ-position and the antecedent moves out of this DP to a θ-position. In section 3.1, I assumed, following Kayne (2001), that the antecedent does not receive a θ-role inside the DP out of which it moves. This property, coupled with (33), accounts for the lack of minimality effects with antecedent movement.

However, there are cases in which we must assume that an argument receives a θ-role inside the DP out of which it moves. The evidence comes from copy raising constructions

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[16] On this view, it is a separate question why elements cannot stay freely in their landing sites (e.g., objects in English cannot appear freely in preverbal positions). The question is related to the issue of what allows free movement such as scrambling. One possibility is that while movement operations are allowed freely by means of internal Merge, properties of landing sites may block moved elements from surfacing there. This will give rise to effects that make movement look like it is not free.

like those in (36).

(36) a. John seems like he is smart.

　　　b. John looks as if he is smart.

Copy raising constructions have the property of having a pronoun in a θ-position and its "antecedent" in a non-θ-position. In the copy raising constructions in (36), *John* is understood to be a subject of *smart* though the subject position of *smart* is occupied by *he* and *John* is in a non-θ-position.

　　There is evidence that at least in certain cases of copy raising, the surface matrix subject has moved from the embedded subject. Consider the following examples.

(37) a. The shoe looks like it's on the other foot.　　(Potsdam and Runner 2001)

　　　b. These stories about each other$_i$ sound like they would frighten John and Mary$_i$.

(Fujii 2007)

The copy raising example in (37a) has an idiom chunk in the matrix subject position and its "pronominal associate" in the embedded subject position. Potsdam and Runner (2001) report that it is acceptable, though there is some dialectal variation in its acceptability. The availability of the idiom reading in (37a) shows that the matrix subject is interpreted in the embedded subject. A straightforward analysis of this fact will be one where the matrix subject has moved from the embedded subject.[17] Similarly, Fujii (2007) reports that (37b) is acceptable. This indicates that the anaphor *each other* contained in the matrix subject can be bound by the embedded object *John and Mary*. Thus, (37b) patterns with (38a) and not with (38b).

(38) a. Each other$_i$'s mothers seem to please the two boys$_i$.

　　　b. ?*John seemed to each other$_i$'s mothers to please the two boys$_i$.

(Fujii 2007)

The contrast in (38) indicates that the acceptability of (38a) is due to movement of the matrix subject containing *each other* from the embedded subject, which produces a reconstruction context, making it possible for *each other* to be bound by the embedded object (cf. *It seems that each other's mothers please the two boys.*). (38b) is unacceptable because *each other* stays in the matrix clause throughout the derivation and so can never be bound by the embedded object. Fujii (2007) claims that the fact that (37b) patterns with (38a) shows that in (37b) the matrix subject has moved from the position of *they* (see also Ura 1998 for an earlier

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[17] Potsdam and Runner (2001) propose an analysis in which *John* and *he* are base generated in the matrix clause and in the embedded clause, respectively, and they form a base-generated A-chain. According to their analysis, the presence of the base-generated A-chain accounts for the idiom reading in (37a). In the movement account adopted in the text, we can dispense with the notion of base-generated A-chain.

proposal for a movement analysis of copy raising).

In the present perspective, we can account for the movement properties of copy raising by analyzing it as illustrated in (39).

(39)   John seems like [<John> he] is smart.

In (39) *John* and *he* form a DP constituent and this DP is merged into a subject θ-position in the embedded clause. Then *John* moves out of the DP to the matrix clause, where its Case is licensed.[18] So far the situation is exactly identical to what happens in the case of standard binding (e.g., *John thinks that [<John> he] is smart*). However, there is an important difference between the two cases. In the case of binding, the antecedent moves to a θ-position, whereas in the case of copy raising, it moves to a non-θ-position. This means that *John* in (39) must receive a θ-role in its base position inside the DP [*John he*]; otherwise, it would receive no thematic interpretation.

Given that the antecedent receives a θ-role in its base position in copy raising, it is predicted, from the perspective of (33), that copy raising will exhibit minimality effects. This is in fact the case. Consider first the following examples from Potsdam and Runner (2001).

(40)   a.   Bill sounds like Martha hit him over the head with the record.

        b.   The roach looks to me like Abbie gave it to Myrna.

On the surface, these cases look identical to the cases in (36). The only difference lies in the fact that the pronominal associates appear in subject positions in (36), but in nonsubject positions in (40). Interestingly, however, the apparent copy raising constructions in (40) do not exhibit the reconstruction effect seen in (37b), as the following example shows.

(41) ?*Those stories about each other$_i$ sound like John and Mary$_i$ would fear them.

Fujii (2007) observes that (41) contrasts with (37b) in that the relevant binding is not possible in (41). The ungrammaticality of (41) shows that the matrix subject cannot have moved from the position of its pronominal associate *them*. Fujii claims that this is due to a violation of minimality: A-movement of *those stories about each other* from the position of *them* is blocked by the intervening subject of the embedded clause. This implies in turn that the matrix subject in cases like (40) is necessarily base generated in the matrix subject position and receives a θ-role there, as Potsdam and Runner claim (otherwise; the matrix subject would not receive a θ-role), and also that cases like (36) are ambiguous between a derivation where the matrix subject has moved from the embedded subject and one where the matrix subject is base generated in the matrix clause.

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[18]   Here I depart from Fujii (2007). Fujii claims that in the copy raising construction, the raised DP enters into multiple Case licensing, so that its Case is licensed both in the embedded clause and in the matrix clause. I assume, following Kayne's (2001) theory of antecedent movement, that the Case of the raised DP is licensed only in the matrix clause.

Crucial for present purposes is that A-movement of the matrix subject in copy raising does obey minimality, in contrast to A-movement of antecedents. Given that A-movement must originate from a θ-position in the case of copy raising, this difference follows straightforwardly under the present proposal incorporating the visibility condition in (33).

However, the claim that A-movement of the matrix subject in copy raising originates from a θ-position is contrary to Kayne's (2002) proposal, which we adopted in section 3.1, that the antecedent does not receive a θ-role inside the DP out of which it moves. The analysis of the lack of minimality effects proposed in section 3.1 supports Kayne's position, whereas copy raising argues for the contrary. This state of affairs leads us to conclude that Universal Grammar makes both options available. Specifically, I propose (42).

(42)   In the DP [X Y], where Y is a pronominal and X is its antecedent,

   (i)   X does not receive a θ-role in [X Y]; or

   (ii) X shares a θ-role with Y.

Recall that the DP [X Y] is merged into a θ-position and Y, being the head of this DP, has a θ-role assigned to the DP. In the case of copy raising, option (ii) must be taken; otherwise, the moved subject would receive no thematic interpretation. As a result of taking this option, copy raising obeys minimality (given the visibility condition in (33)). On the other hand, in the case of antecedent movement, the two options are available in principle. If option (ii) is taken, we predict that antecedent movement will show minimality effects, just like copy raising. However, the other option is also available here. With option (i), coupled with (33), antecedent movement can violate minimality. This is the situation we discussed in section 3.1.[19]

4.   Conclusion

In this paper, I have discussed issues related to movement of antecedents in a movement approach to binding. The major claims I have made are summarized in (43).

(43)   a.   Multiple clefting in Japanese provides new evidence that antecedents move from the position of pronominals.

        b.   Movement of antecedents does not obey minimality.

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[19] Copy raising involving idiom chunks shows minimality effects. Compare (37a) with (i) below, which Potsdam and Runner (2001) judge as unacceptable.

(i) *The other foot appears like the shoe is on it.

Given (33), the status of (i) follows from minimality. Idiom chunks, like expletives, do not receive θ-roles and so the Case features of *the shoe* and *the other foot* in (i) are visible to the computation from the beginning. As a result, *the other foot* can never skip *the shoe*.

c.   The antecedent does not receive a θ-role in its base position.

d.   θ-roles make the Case features of DPs visible to the computation.

In connection with (43c), I have argued for the hypothesis put forward by Kayne (2002) that movement of antecedents is characterized as movement from a non-θ-position to a θ-position. This is a new kind of A-movement and I have proposed that this property, coupled with the proposal in (43d), is responsible for the interesting effect in (43b).

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ON (IM)POSSIBLE N'-DELETION WITHIN PPs *

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1. Introduction

It is well-known that many languages allow N'-deletion, where a part of a noun phrase to be elided under identity with its antecedent (Jackendoff 1971, Lobeck 1990, 1995, Saito & Murasugi 1990, among others).[1] Some concrete examples are given in (1). In (1a), which is from English, the elided element, indicated by the symbol Δ, is interpreted as *wine*.

(1) a. I like Bill's wine, but Max's Δ is even better.   (based on Jackendoff 1971:28)

    b. Taroo-no   taido-ga   yoi ippou Hanako-no Δ-ga   yokunai   (koto)
       Taroo-Gen attitude-Nom good while Hanako-Gen -Nom not.good   fact

       '(lit.) (the fact that) Taroo's attitude is good while Hanako's Δ is not good'

As for Japanese, since Saito & Murasugi (1990), examples like (1b) have been taken as evidence for its existence in this language (see also Saito, Lin & Murasugi 2008, Watanabe 2010, Takahashi 2011 for more recent arguments).

The main empirical focus of this paper is the case of N'-deletion taking place within PPs. Some potential examples of such PP-internal N'-deletion found in the previous literature are given in (2). As far as we can tell, not many cases have been systematically examined in the literature, but their grammaticality indicates that N'-deletion seems to be possible within PPs.

(2) a. Tureck's performance of Bach on the piano doesn't please me as much as Glenn
      Gould's Δ.   (based on Jackendoff 1971:31)

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[1] In this paper, the term *N'-deletion* is used without any theoretical commitment. For instance, as we see in the following sections, what is elided in the relevant construction is not a bar-level projection, N'. In addition to this, we abstract away from the issue of how to implement ellipsis, although we represent ellipsis in terms of deletion.

b.　[Kyoo-no　ondo]-wa　　　　[[kinoo-no　　　Δ] yorimo] takai
　　today-Gen temperature-Top　yesterday-Gen　　than　　　high

(lit.) Today's temperature is higher than yesterday's Δ'

（based on Saito, Lin & Murasugi 2008:255)

Providing more controlled examples in the following sections, however, we show that there are certain environments where PP-internal N'-deletion is blocked. Then, we propose an analysis that can accommodate this novel observation, discussing some theoretical implications.
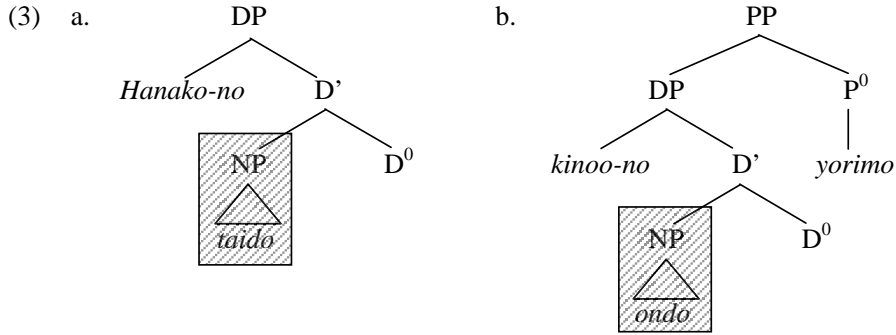
This paper is organized as follows: Section 2 is devoted to providing the novel observation regarding PP-internal N'-deletion. Section 3 offers the analysis of the data. In Section 4, we turn our attention to the cases involving Case-markers, instead of postpositions, and extend the proposed analysis to such cases. Section 5 concludes this paper, discussing some implications.

2.　Observations

Before jumping into the crucial examples of PP-internal N'-deletion, let us introduce some background on N'-deletion in general. Under the standard analysis of N'-deletion (Saito & Murasugi 1990, Lobeck 1990, 1995), the relevant part of (1b) is analyzed as having a structure like (3a), where D^0 licenses ellipsis of its complement, namely NP (indicated by shading). As for PP-internal N'-deletion, its availability is not so surprising if we can assume a structure like (3b) for (2b), because P^0 has no local relationship with the NP inside the DP so that it should not disrupt ellipsis. The grammaticality of (4b) confirms this point (note that the examples in (4) are more appropriately controlled than ones like (2) in that both the antecedent and the target clauses contain PPs).[2]

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[2]　Following Saito & Murasugi (1990) and others, the abstract noun *koogeki* 'attack' is used to avoid the possibility of the pronominal use of *no* (which roughly corresponds to *one* in English), since the pronominal *no* cannot refer to abstract nouns (Okutsu 1974, Kamio 1983, Murasugi 1991). Takahashi (2011:143) provides the following example to show that the pronominal *no* cannot refer to *koogeki* 'attack' (see also Arimoto & Murasugi 2005:174).

(i)　*Taroo-no　　koogeki-wa totemo tuyoi　no　datta
　　Taroo-Gen　attack-Top　very　　strong　one　was

　'Taroo's attack was a very strong one'

(3) a.
```
              DP
            /    \
     Hanako-no    D'
                /    \
            [ NP ]     D⁰
            [ △  ]
            [taido]
```

b.
```
                    PP
                  /    \
               DP        P⁰
             /    \       |
        kinoo-no    D'   yorimo
                  /    \
              [ NP ]     D⁰
              [  △  ]
              [ ondo ]
```

(4) a. Taroo-wa   [_PP [kaseizin-e-no   koogeki **de**] kunsyoo-o   moratta
         Taroo-Top   Martians-to-Gen attack   with decoration-Acc received

         '(lit.) Taroo received a decoration [**with** [an attack to Martians]]'

     b. Hanako-wa [_PP [kinseizin-e-no   Δ] **de**]   medaru-o   moratta
         Hanako-Top   Venusians-to-Gen   with medal-Acc received

         '(lit.) Hanako received a medal [**with** [Δ to Venusians]]'

In the rest of this section, however, we show that N'-deletion within PPs is indeed blocked in certain syntactic contexts, despite the fact that it is generally possible. To be more specific, we claim that N'-deletion is blocked if both of the following two conditions are satisfied: (i) A quantifier functions as a remnant of N'-deletion; (ii) the postposition following the ellipsis site is different from the one in the antecedent.

Let us consider the examples in (5) and (6). (5a) is the antecedent for (5b-d), which involve N'-deletion within PPs. In (5b), the postposition following the ellipsis site is identical to the one in the antecedent (5a). On the other hand, (5c-d) involve the postpositions which are different from the one in the antecedent. The fact that (5b-d) are all grammatical suggests that N'-deletion is possible in these examples.

(5) a. Kinseizin-wa [kinoo-no   kaseizin-no   koogeki **kara**] seikansita
         Venusians-Top yesterday-Gen Martians-Gen attack   from   survived

         '(lit.) Venusians survived [**from** yesterday's attack by Martians]'

     b. Suiseizin-wa   [kyoo-no   Δ **kara**] toosoosita
         Mercurians-Top today-Gen   from   run.away

         '(lit.) Mercurians run away [**from** today's Δ]'

     c. Suiseizin-wa   [kyoo-no   Δ   **e**] taiousita
         Mercurians-Top today-Gen   to   responded

         '(lit.) Mercurians responded [**to** today's Δ]'

    d. Suiseizin-wa   [kyoo-no Δ **de**]   hiheisita
         Mercurians-Top today-Gen   with got.exhausted

        '(lit.) Mercurians got exhausted [**with** today's Δ]'

That is, N'-deletion is possible even when the postposition following the N'-deletion site is different from its counterpart in the antecedent in cases like (5). Nonetheless, a contrast emerges if remnants are changed into quantifiers, as in (6).[3]

(6) a. Kinseizin-wa [subete-no kaseizin-no   koogeki **kara**] seikansita
        Venusians-Top all-Gen   Martians-Gen attack   from   survived

       '(lit.) Venusians survived [**from** all attacks by Martians]'

    b. Suiseizin-wa   [hotondo Δ **kara**] toosoosita
        Mercurians-Top most   from   run.away

       '(lit.) Mercurians run away [**from** most Δ]'

    c. *Suiseizin-wa   [hotondo Δ **e**] taiousita
        Mercurians-Top most   to   responded

       '(lit.) Mercurians responded [**to** most Δ]'

    d. *Suiseizin-wa   [hotondo Δ **de**]   hiheisita
        Mercurians-Top most   with got.exhausted

       '(lit.) Mercurians got exhausted [**with** most Δ]'

(6b), which involves the postposition identical to the one in (6a), is still grammatical, while (6c-d), which involve different postpositions, are ungrammatical.[4]

    The contrast becomes clearer if the examples in (5) and (6) are modified as follows:

(7) a. Kinseizin-wa [kaseizin-no   kinoo-no   koogeki **kara**] seikansita
        Venusians-Top Martians-Gen yesterday-Gen attack   from   survived

       '(lit.) Venusians survived [**from** yesterday's attack by Martians]'

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3   Although Saito & Murasugi (1990) and Saito, Lin & Murasugi (2008) argue that adjuncts do not count as legitimate N'-deletion remnants, Takahashi (2011) provides several grammatical cases of N'-deletion with adjunct remnants (see also Kadowaki 2005, Abe 2006, and Watanabe 2010).

4   The linking element *no* must be absent for quantifiers to qualify legitimate N'-deletion remnants (Watanabe 2010), but the contrast between (6b) and (6c-d) suggests that its absence is not the source of the ungrammaticality of the latter. That is, if the absence of *no* makes (6c-d) ungrammatical, (6b) should be also ungrammatical, contrary to fact.

b. Suiseizin-wa   [doseizin-no kyoo-no   Δ **kara**] toosoosita
   Mercurians-Top Saturnians today-Gen   from   run.away

   '(lit.) Mercurians run away [**from** today's Δ by Saturnians]'

c. Suiseizin-wa   [doseizin-no kyoo-no   Δ **e**] taiousita
   Mercurians-Top Saturnians today-Gen   to   responded

   '(lit.) Mercurians responded [**to** today's Δ by Saturnians]'

d. Suiseizin-wa   [doseizin-no kyoo-no   Δ **de**]   hiheisita
   Mercurians-Top Saturnians today-Gen   with got.exhausted

   '(lit.) Mercurians got exhausted [**with** today's Δ by Saturnians]'

(8) a. Kinseizin-wa   [kaseizin-no   subete-no koogeki **kara**] seikansita
       Venusians-Top Martians-Gen all-Gen   attack   from   survived

       '(lit.) Venusians survived [**from** all attacks by Martians]'

   b. Suiseizin-wa   [doseizin-no hotondo Δ **kara**] toosoosita
      Mercurians-Top Saturnians   most   from   run.away

      '(lit.) Mercurians run away [**from** most Δ by Saturnians]'

   c. *Suiseizin-wa   [doseizin-no hotondo Δ **e**] taiousita
      Mercurians-Top Saturnians   most   to   responded

      '(lit.) Mercurians responded [**to** most Δ by Saturnians]'

   d. *Suiseizin-wa   [doseizin-no hotondo Δ **de**]   hiheisita
      Mercurians-Top Saturnians   most   with got.exhausted

      '(lit.) Mercurians got exhausted [**with** most Δ by Saturnians]'

(7a) is different from (5a) in that the order between *kinoo-no* 'yesterday' and *kaseizin-no* 'Martian' is switched. Accordingly, *doseizin-no* 'Saturnians', which is contrasted with *kaseizin-no* 'Mertians', appears in front of *kyoo-no* 'today' in (7b-d). Similar changes are made for the examples in (8). Since multiple genitive remnants are allowed in Japanese N'-deletion (see Kimura 1994), the contrast between (7b-d) and (8b) on the one hand and (8c-d) on the other cannot be attributed to this factor. Since the speakers we have consulted find the contrast between (7) and (8) much stronger than the one between (5) and (6), we mainly use this word order pattern in the following discussion.[5]

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5   The string *doseizin-no hotondo* in (8c-d) has an alternative parse where the quantifier *hotondo* 'most' functions as the head of the whole expression and *doseizin-no* 'Saturnians' modifies it. Although (8c-d) are grammatical under this parse, it gives rise to a meaning which is clearly different from the intended interpretation involving *koogeki* 'attack'.

The examples in (9) illustrate the same point with slightly different lexical items. Again, the minimal difference between (9a) and (9b) is the type of the N'-deletion remnant.

(9) a. ＊Kinzeizin-wa　[kaseizin-no　subete-no koogeki **e**] hangekisita-si,
　　　Venusians-Top　Martians-Gen　all-Gen　　attack　to struck.back-and

　　　suiseizin-wa　[doseizin-no　　hotondo Δ **kara**] kaihukusita
　　　Mercurians-Top Saturnians-Gen most　　　 from　 recovered

　　　'(lit.) Venusians struck back [**at** all attacks by Martians], and Mercurians recovered [**from** most Δ]'

　　b. Kinseizin-wa　[kaseizin-no　　kinoo-no　　 koogeki **e**] hangekisita-si,
　　　Venusians-Top　Martians-Gen　yesterday-Gen attack　to struck.back-and

　　　suiseizin-wa　[doseizin-no　　kyoo-no　Δ **kara**] kaihukusita
　　　Mercurians-Top Saturnians-Gen today-Gen　　from　 recovered

　　　'(lit.) Venusians struck back [**at** yesterday's attack by Martians], and Mercurians recovered [**from** today's Δ]'

Therefore, the pattern found in (5)/(6), (7)/(8), and (9) indicates that N'-deletion is indeed blocked if both of the two conditions are satisfied, validating our claim made above. Note that these asymmetries with respect to the availability of N'-deletion is not expected under the standard analysis of N'-deletion briefly reviewed at the outset of this section. In the next section, we propose an analysis of the relevant observations.

3.　Proposals and Analysis

The analysis to be proposed in this section involves the following two crucial ingredients: (i) Takahashi's (2011) analysis of N'-deletion, and (ii) a rigid identity requirement found in so-called V(erb)-stranding VP-ellipsis (McCloskey 1991, 2011, 2012, Goldberg 2005, Gribanova to appear, among others). We first introduce these two, paving the way for our analysis.


It is also worth noting here that the construction where a quantifier heads a nominal expression does not have to involve ellipsis. As shown in (i), such expressions can be used without any antecedents.

(i)　Gakusei-no {nanninka / itibu / ooku / hotondo / daibubun / zenin}-ga　siken-ni ukatta
　　student-Gen some　　part many　most　　large.part all　-Nom test-Dat passed

　　'Some/A part/Many/Most/A large part/All of the students passed the exam'

Suppose then that *hotondo* 'most' in (6c-d) is modified by *pro*, instead of overt expressions like *gakusei-no* 'student' in (i), and the null pronoun refers to *kaseizin-no koogeki* 'attack by Martians'. Then, the examples can have the interpretation which is hard to be distinguished from the intended reading. We suggest that this makes (6c-d) slightly better than (8c-d) for many speakers.

Takahashi (2011) argues that in languages like Japanese, when an N'-deletion remnant is a non-quantifier as in (10a) (repeated from (1b)), the whole nominal has a structure like (11a), where the functional head K(ase)^0 dominating the Case-marker *-ga* licenses ellipsis of its complement, namely, NP (see also Bošković to appear).[6] On the other hand, when a quantifier functions as a remnant as in (10b), Q(uantifier)P is projected on top of the KP. Takahashi (2011) further argues that K^0 moves to Q^0, and from there it licenses ellipsis of its complement (i.e. KP), as schematically shown in (11b).

(10) a. Taroo-no   taido-ga   yoi ippou Hanako-no Δ-ga   yokunai   (koto)
       Taroo-Gen   attitude-Nom good while Hanako-Gen -Nom not.good   fact

       '(lit.) (the fact that) Taroo's attitude is good while Hanako's is not good'

   b. Sannin-no   sensei-ga   kita ippou gonin   Δ-ga   kaetta (koto)
       three.Cl-Gen teacher-Nom came while five.Cl   -Nom left   fact

       '(lit.) (the fact that) three teachers came while five Δ left'

(11) a.

b.
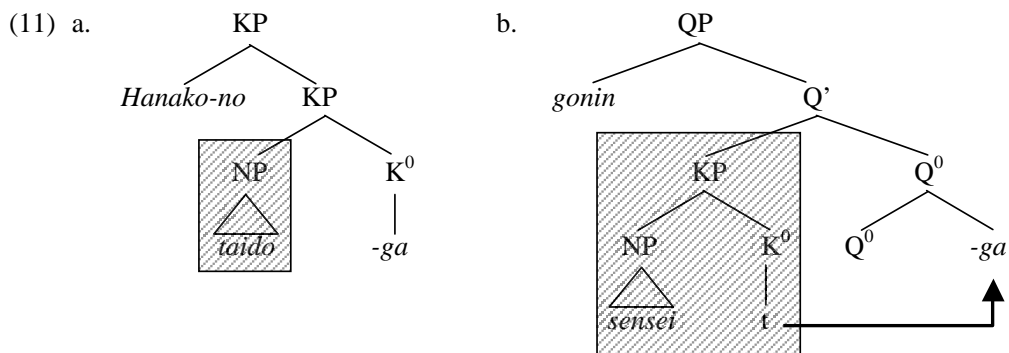
Let us turn to the second ingredients, the rigid identity requirement. In languages like Irish, objects can be missing in cases like (12a), although Irish is not a null-object language. McCloskey (1991) argues that Irish allows VP-ellipsis to target a VP whose head has evacuated the VP by head-movement, as schematically shown in (12b) (see also Doron 1999, Goldberg 2005 for Hebrew and Gribanova to appear for Russian). Since the missing object is contained in the elided VP, the resulting sentence appears to have a null object.

(12) a. Dúirt mé go [gceannóinn é] agus [cheannaigh Δ]
       said I C buy   it and   bought

       'I said that I would buy it and I did'   (based on McCloskey 1991:273)

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[6] Takahashi (2011) argues that in structures like (11a), the N'-deletion remnants (*Hanako-no* in this case) are always adjoined to KP, but our analysis does not hinge on this point. Hence, we abstract away from the structural position of N'-deletion remnants in the following discussion.

b. *Dúirt mé go* [IP **gceannóinn**i [VP pro ti *é*]] *agus* [IP **cheannaigh**j [VP pro tj *é*]]

This kind of VP-ellipsis is dubbed as V-stranding VP-ellipsis.

One important property of V-stranding VP-ellipsis extensively discussed by Goldberg (2005) is that the remnant, namely the stranded verb, of the target clause must be identical to the verb of the antecedent to some extent. For instance, in (13a), the relevant verbs are not identical to each other, and the sentence cannot have a null object (see also McCloskey 2011 for more examples).

(13) a   *[Léigh mé an dán] ach níor [thuig   Δ]
       read   I   the poem but not   understand

     '(intended) I read the poem, but I didn't understand it'

(based on Goldberg 2005:168)

    b. *[IP **Léigh**i [VP *mé* ti *an dán*]] *ach níor* [IP **thuig**j [VP *mé* tj *an dán*]]

Goldberg (2005) argues (13a) is ungrammatical because ellipsis of VP depicted in (13b) is blocked due to the mismatch between the verb extracted from the ellipsis site and its counterpart in the antecedent.

Armed with these assumptions, let us now turn to our observations made in Section 2. Based upon Takahashi's (2011) analysis of N'-deletion, we propose that (at least certain) postpositions in Japanese belong to the category Kase. Then, the relevant parts of the examples in (6) can be analyzed as having the structures given in (14).

(14) a. Antecedent: [QP *subete-no* [KP [NP *kaseizin-no koogeki*] t_K^0] Q^0+[K^0 **kara**]]   (= (6a))

    b. Target: [QP *hotondo* [KP [NP *kaseizin-no koogeki*] t_K^0] Q^0+[K^0 **kara**]]   (= (6b))

    c. Target: *[QP *hotondo* [KP [NP *kaseizin-no koogeki*] t_K^0] Q^0+[K^0 **e/de**]]   (= (6c/d))

To capture the observations in question, we need to block the ellipsis only in (14c). Generalizing the rigid identity requirement from cases concerning verbs extracted from ellipsis sites to cases concerning heads extracted from ellipsis sites, we claim that the pattern depicted in (14) can be captured as an effect of the rigid identity requirement. To be more specific, in (14c), the head extracted from the ellipsis site (namely *e* 'to' or *de* 'with') is different from the one in the antecedent (namely *kara* 'from'), hence ellipsis of the KP is blocked. On the other hand, the head extracted from the ellipsis site is identical to the one in the antecedent, so that ellipsis of KP is allowed.

By contrast, there is no extraction of heads in the case of (5), as shown in (15), making the rigid identity requirement irrelevant.

(15) a.   Antecedent: [$_{KP}$ *kinoo-no* [$_{NP}$ *kaseizin-no koogeki*] ***kara***]   (= (5a))

   b.   Target: [$_{KP}$ *kinoo-no* [$_{NP}$ ~~*kaseizin-no koogeki*~~] ***kara***]   (= (5b))

   c.   Target: [$_{KP}$ *kinoo-no* [$_{NP}$ ~~*kaseizin-no koogeki*~~] ***e/de***]   (= (5c/d))

Since the possibility of ellipsis of NP is not affected both in (15b) and (15c), the absence of the contrast between (5b) and (5c-d) can be captured.

The contrast found in (7) and (8) and in (9), which have a slightly different word order pattern from (5) and (6), can be accommodated in a similar way. Let us take (9) as a representative. Assuming that *kaseizin-no* 'Martians' and *doseizin-no* 'Saturnians' are base-generated within NP and moved to a higher position, the relevant parts of (9) are analyzed as having structures in (16).

(16) a.   Antecedent: [$_{QP}$ *kaseizin-no*$_i$ *subete-no* [$_{KP}$ [$_{NP}$ t_i *koogeki*] t_K^0] Q^0+[$_K^0$ ***e***]]

     Target: *[$_{QP}$ *doseizin-no*$_j$ *hotondo* ~~[$_{KP}$ [$_{NP}$ t_j *koogeki*] t_K^0]~~ Q^0+[$_K^0$ ***kara***]] (= (9a))

   b.   Antecedent: [$_{KP}$ *kaseizin-no*$_i$ *kinoo-no* [$_{NP}$ t_i *koogeki*] [$_K^0$ ***e***]]

     Target: [$_{KP}$ *doseizin-no*$_j$ *kyoo-no* ~~[$_{NP}$ t_j *koogeki*]~~ [$_K^0$ ***kara***]]   (= (9b))

Ellipsis of the KP is licensed in (16b) but not in (16a), because the rigid identity requirement is relevant only for the former.[7]

In this way, our analysis supports Takahashi's (2011) analysis, gaining wider empirical coverage. Furthermore, it suggests that the rigid identity requirement is operative not only in a clausal domain but also in a nominal domain, implying that it is not just a property specific

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[7]   It should be noted here that the rigid identity requirement is operative only in extraction of heads out of ellipsis sites, because the difference between *kaseizin-no* 'Martians' and *doseizin-no* 'Saturnians' does not affect the possibility of ellipsis; otherwise, there would be no contrast between (7) and (8) and between (9a) and (9b). That is, there is an asymmetry between phrasal elements and heads with respect to extractions out of ellipsis sites. In fact, it is well-known that in other elliptical constructions such as VP-ellipsis and sluicing, an XP which is different from its counterpart in the antecedent can be readily extracted from ellipsis sites. To derive this difference between heads and phrasal elements, Goldberg (2005) suggests that head-movement but not phrasal movement undergoes obligatory reconstruction, assuming that the former is not a narrow syntactic operation (cf. Chomsky 2000, Boeckx & Stjepanović 2001, among others). See also McCloskey (2012) and Takita (2012) for other attempts to derive the difference.

to V-stranding VP-ellipsis but a more general property of ellipsis involving extraction of heads.[8]

4.   Further Data

In this section, we expand the data set to cases involving Case-markers, and discuss how the proposed analysis can accommodate such cases. Specifically, we argue that the proposed analysis can indeed accommodate them by claiming that the nature of the rigid identity requirement is essentially semantic. Then, we show that various predictions made by this modification of the proposed analysis are indeed borne out.

First consider the examples in (17). In (17a), N'-deletion targets an accusative object, taking a nominative subject as the antecedent, and in (17b), it targets a nominative subject, taking an accusative object as the antecedent.[9]

(17) a.   [Kaseizin-no   subete-no koogeki**-ga**] kinseizin-o   nayamaseta-ga,
      Martians-Gen all-Gen   attack-Nom Venusians-Acc annoyed

    suiseizin-wa   [doseizin-no   hotondo Δ**-o**] yarisugosita
    Mercurians-Top Saturnians-Gen most   -Acc withstood

    '(lit.) [All attacks by Martians] annoyed Venusians, but Mercurians withstood [most Δ by Saturnians]'

   b.   Suiseizin-wa   [kaseizin-no   subete-no koogeki**-o**] yarisugosita-ga,
     Mercurians-Top Martians-Gen all-Gen   attack-Acc withstood-but

    [doseizin-no hotondo Δ**-ga**]   kinseizin-o   nayamaseta
     Saturnians most   -Nom Venusians-Acc annoyed

    '(lit.) Mercurians withstood [all attacks by Martians], but [most Δ by Saturnians annoyed Venusians]'

The grammaticality of these examples indicates that N'-deletion is indeed possible in these cases, even though the deleted noun is modified by the quantifier *hotondo* 'most', and the Case-maker following the ellipsis site is different from the one in the antecedent.

The same point can be shown by using so-called nominative object constructions. As shown in (18), Japanese allows an object to be marked with either the accusative Case-marker or the nominative Case-maker when elements like *-tai* 'want' attach to the main verb, forming

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[8]   See also Takita (2010), who argues that the rigid identity requirement is also operative in what is called V(erb)-stranding sluicing.

[9]   Given the analysis proposed in Section 3, we assume that *kaseizin-no* 'Martians' and *doseizin-no* 'Saturnians' are moved from the projection of *koogeki* 'attack', but we do not represent this point in (17) and the subsequent examples for simplicity.
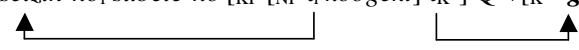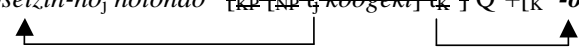
a complex predicate (see, among others, Sano 1985, Tada 1992, Koizumi 1994, 1998, Takano 2003, Nomura 2005, and Takahashi 2010, 2011).

(18)　Kinseizin-wa　kaseizin-no　　koogeki-**o/-ga**　yarisugosi-tai
　　　 Venusians-Top Martians-Gen　attack-Acc/-Nom withstand-want

　　　 'Venusians want to withstand Martian's attack'

The examples in (19) and (20), where the objects can be marked either accusative or nominative, show that N'-deletion is possible no matter whether the Case-maker attached to the deleted noun is identical to the one attached to its antecedent or not.

(19) a.　Kinseizin-wa　[kaseizin-no　　subete-no koogeki-**o**] husegi-tai
　　　　 Venusians-Top　Martians-Gen all-Gen　　attack-Acc　stop-want

　　　　 '(lit.) Venusians want to stop [all attacks by Martians]'

　　 b.　Suiseizin-wa　[doseizin-no　　　hotondo Δ-**ga**/-**o**]　　yarisugosi-tai
　　　　 Mercurians-Top　Saturnians-Gen most　　　 -Nom/-Acc　withstand-want

　　　　 '(lit.) Mercurians want to withstand [most Δ by Saturnians]'

(20) a.　Kinseizin-wa　[kaseizin-no　　subete-no koogeki-**ga**] husegi-tai
　　　　 Venusians-Top　Martians-Gen all-Gen　　attack-Nom　stop-want

　　　　 '(lit.) Venusians want to stop [all attacks by Martians]'

　　 b.　Suiseizin-wa　[doseizin-no　　　hotondo Δ-**o**/-**ga**]　　yarisugosi-tai
　　　　 Mercurians-Top　Saturnians-Gen most　　　 -Acc/-Nom　withstand-want

　　　　 '(lit.) Mercurians want to withstand [most Δ by Saturnians]'

　　 Under the analysis proposed in Section 3, the relevant parts of examples like (17a) should be analyzed as having structures like (21).

(21)　　Antecedent: $[_{QP}$ *kaseizin-no*$_i$ *subete-no* $[_{KP} [_{NP} t_i$ *koogeki*$] t_K^0] Q^0 + [_K^0$ *-ga*$]]$

　　　　Target:　　$[_{QP}$ *doseizin-no*$_j$ *hotondo* $\overline{[_{KP} [_{NP} t_j \text{ } koogeki] t_K^\theta]} Q^0 + [_K^0$ *-o*$]]$

　　 Given the rigid identity requirement, N'-deletion should be blocked since the head extracted from the deleted KP is different from the one in the antecedent, contrary to fact. Then, we propose to accommodate these *prima facie* counterexamples by resorting to Goldberg's (2005) original insight about the nature of the rigid identity requirement: It follows from the general condition that deleted XP to be identical to its antecedent in their meanings. Since (structural) Case-markers are semantically vacuous, unlike postpositions, it

follows that their differences do not affect the possibility of N'-deletion.[10] Put differently, the deleted KP in (21) can be taken as identical to the KP in the antecedent due to the semantic vacuity of Case-markers. On the other hand, for instance in (16a), the deleted KP cannot be regarded as identical to its antecedent KP because the former has the meaning of the NP *kaseizin-no koogeki* 'attack by Martians' *plus* the meaning of *kara* 'from' while the latter has the meaning of the NP *plus* the meaning of *e* 'to'.

This modification then leads us to the following predictions: Suppose that a quantifier functions as the N'-deletion remnant; then, (i) N'-deletion is allowed for the cases involving a pair of postpositions which are *morphologically distinct* from but *semantically identical* to each other; (ii) conversely, N'-deletion is *not* allowed for the cases involving a pair of postpositions which are *morphologically identical* to but *semantically distinct* from each other. These predictions are indeed borne out, as shown in (22) and (23).

(22) a. Kinseizin-wa [kaseizin-no   subete-no koogeki **yori**] seikansita
       Venusians-Top Martians-Gen all-Gen   attack   from   survived

   '(lit.) Venusians survived [**from** all attcks by Martians]'

   b. Suiseizin-wa [doseizin-no   hotondo Δ **kara**] toosoosita
      Mercurians-Top Saturnians-Gen most   from   run.away

   '(lit.) Mercurians run away [**from** most Δ by Saturnians]'

(23) a. Kinseizin-wa [kaseizin-e-no   subete-no koogeki **de**] misairu-de   hangekisita
       Venusians-Top Martian-to-Gen all-Gen   attack   at   missile-with struck.back

   '(lit.) Venusians struck back [**at** all attacks to Martians] with missiles'

   b. *Suiseizin-wa   betu-no tatakai-de [doseizin-e-no   hotondo Δ **de**]
      Mercurians-Top another battle-at   Saturnians-to-Gen most   with

   kunsyoo-o   moratta
   decoration-acc received

   '(lit.) Mercurians received a decoration [**with** most Δ by Saturnians] at another battle'

First, (22a) involves the postposition *yori*, while (22b) does the postposition *kara*. Although theses postpositions are morphologically different, they are essentially synonymous: Both of them have the meaning of 'from'.[11] Hence N'-deletion is allowed, rending (22b) grammatical. Turing now to (23), the postposition *de* is attached to the locative expression in

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[10] Although we are claiming that the elements traditionally called "postpositions" are indeed of the category K, we keep calling them postpositions for ease of reference.

[11] We thank an anonymous reviewer of FAJL6 for pointing out the synonymy of *yori* and *kara*.

(23a), while the same morpheme marks the instrumental expression in (23b). Hence, N'-deletion is blocked in (23b), despite of the morphological identity of the postpositions.
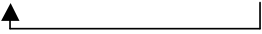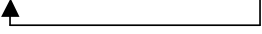
Finally, let us consider (24) and (25). In (24), the accusative-marked nominal antecedes the postposition-marked one, and in (25) the antecedent-target relation is reversed.
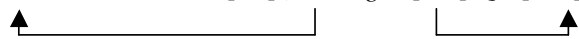
(24) a. Kinseizin-ga   [kaseizin-no   kinoo-no   koogeki**-o**] hihansita ippou,
       Venusians-Nom   Martians-Gen yesterday-Gen attack-Acc   criticized while

       suiseizin-ga   [doseizin-no   kyoo-no   Δ**-de**] hiheisita
       Mercurians-Nom Saturnians-Gen today-Gen   -with got.exhausted

       '(lit.) While Venusians criticized [yesterday's attack by Martians], Mercurians got exhausted [**with** today's Δ by Saturnians]'

   b. *Kinseizin-ga   [kaseizin-no   subete-no koogeki**-o**] hihansita ippou,
       Venusians-Nom   Martians-Gen all-Gen   attack-Acc   criticized while

       suiseizin-ga   [doseizin-no   hotondo Δ**-de**]   hiheisita
       Mercurians-Nom Saturnians-Gen most   -with   got.exhausted

       '(lit.) While Venusians criticized [all attacks by Martians], Mercurians got exhausted [**with** most Δ by Saturnians]'

(25) a. Kinseizin-ga   [kaseizin-no   kinoo-no   koogeki**-de**] hiheisita
       Venusians-Nom   Martians-Gen yesterday-Gen attack-with   got.exhausted

       ippou, suiseizin-ga   [doseizin-no   kyoo-no   Δ**-o**]   hihansita
       while   Mercurians-Nom Saturnians-Gen today-Gen   -Acc   criticized

       '(lit.) While Venusians got exhausted [**with** yesterday's attack by Martians], Mercurians criticized [today's Δ by Saturnians]'

   b. *Kinseizin-ga   [kaseizin-no   subete-no koogeki**-de**] hiheisita
       Venusians-Nom   Martians-Gen all-Gen   attack-with   got.exhausted

       ippou, suiseizin-ga   [doseizin-no   hotondo Δ**-o**]   hihansita
       while   Mercurians-Nom Saturnians-Gen most   -Acc   criticized

       '(lit.) While Venusians got exhausted [**with** all attacks by Martians], Mercurians criticized [most Δ by Saturnians]'

The contrast between the a-examples and the b-examples indicates that N'-deletion is blocked only when a quantifier functions as a remnant. The examples in (26) and (27) show the same point with a different pair of Case-marker and postposition.

(26) a. Kinseizin-ga　　[kaseizin-no　 kinoo-no　　　 koogeki**-ga**] husegi-takatta ippou,
　　　 Venusians-Nom Martians-Gen yesterday-Gen attack-Nom　stop-wanted　　while

　　　 suiseizin-ga　　[doseizin-no　　 kyoo-no　**Δ-kara**] nige-takatta
　　　 Mercurians-Nom Saturnians-Gen today-Gen　 -from　 escape-wanted

　　　 '(lit.) While Venusians wanted to stop [yesterday's attack by Martians], Mercurians
　　　 wanted to escape [**from** today's Δ by Saturnians]'

　 b. *Kinseizin-ga　　[kaseizin-no　　 subete-no koogeki**-ga**] husegi-takatta ippou,
　　　 Venusians-Nom　 Martians-Gen all-Gen　　 attack-Nom　stop-wanted　　while

　　　 suiseizin-ga　　[doseizin-no　　　 hotondo　Δ**-kara**] nige-takatta
　　　 Mercurians-Nom Saturnians-Gen most　　　 -from　 escape-wanted

　　　 '(lit.) While Venusians wanted to stop [all attacks by Martians], Mercurians wanted
　　　 to escape [**from** most Δ by Saturnians]'

(27) a.　Kinseizin-ga　　[kaseizin-no　　 kinoo-no　　　 koogeki**-kara**] nige-takatta
　　　 Venusians-Nom　 Martians-Gen yesterday-Gen attack-from　　 escape-wanted

　　　 ippou, suiseizin-ga　　　[doseizin-no　　　 kyoo-no　Δ**-ga**]　 husegi-takatta
　　　 while Mercurians-Nom Saturnians-Gen today-Gen　 -Nom　stop-wanted

　　　 '(lit.) While Venusians wanted to escape [**from** yesterday's attack by Martians],
　　　 Mercurians wanted to stop [today's Δ by Saturnians]'

　 b. *Kinseizin-ga　　　[kaseizin-no　　 subete-no koogeki**-kara**] nige-takatta
　　　 Venusians-Nom　 Martians-Gen all-Gen　　 attack-from　　 escape-wanted

　　　 ippou, suiseizin-ga　　　[doseizin-no　　　 hotondo　Δ**-ga**]　 husegi-takatta
　　　 while Mercurians-Nom Saturnians-Gen most　　　 -Nom　stop-wanted

　　　 '(lit.) While Venusians wanted to escape [**from** all attacks by Martians],
　　　 Mercurians wanted to stop [most Δ by Saturnians]'

　 These observations also fall within what is predicted by the proposed analysis. Taking
(24) as a representative, we claim that the relevant parts of have the following structures:

(28) a.　Antecedent: [$_{KP}$ *kaseizin-no*$_i$ *kinoo-no*　[$_{NP}$ t$_i$ *koogeki*] [$_K^0$ *o*]]

　　　 Target:　　 [$_{KP}$ *doseizin-no*$_j$ *kyoo-no*　 [$_{NP}$ t$_j$ *koogeki*] [$_K^0$ *de*]]　　　 (= (24a))

b. Antecedent: [$_{QP}$ *kaseizin-no*$_i$ *subete-no* [$_{KP}$ [$_{NP}$ t$_i$ *koogeki*] t$_K$^{0}] Q^0+[$_K$^{0} ***o***]]

Target: *[$_{QP}$ *doseizin-no*$_j$ *hotondo* [$_{KP}$ [$_{NP}$ t$_j$ *koogeki*] t$_K$^{θ}] Q^0+[$_K$^{0} ***de***]]   (= (24b))

In (28a), what is elided is NP, and no head is extracted from the NP, so that ellipsis is allowed. On the other hand, what is elided (28b) is KP. Since the postposition *de* 'with' have moved to Q^0, the rigid identity requirement dictates whether the elided KP is semantically identical to the antecedent KP. In this case, the antecedent KP is semantically equivalent to its complement NP, due to the semantic-vacuity of the accusative Case-marker. On the other hand, the elided KP has the meaning of its complement NP *and* that of *de* 'with', so that the elided KP does not count identical to the antecedent. Therefore, ellipsis is blocked, giving rise to the ungrammaticality of (24b).

To sum up, the proposed analysis can accommodate the intricate patterns of N'-deletion within PPs. In particular, we argued that the idea that the rigid identity requirement demands semantic identity between the elided element and its antecedent plays a crucial role.

5. Conclusion

In this paper, we provided a novel set of data regarding N'-deletion within PPs. Specifically, we showed that N'-deletion within PPs is blocked, although it is generally possible, if a quantifier functions as the N'-deletion remnant, *and* the postposition following the deleted noun is different from the corresponding postposition in the antecedent. Then, proposing that certain postpositions in Japanese belong to the category Kase, we argued that our observations can be captured as an instance of the rigid identity requirement found in V-stranding VP-ellipsis, based upon Takahashi's (2011) analysis of N'-deletion. We then examined the cases involving Case-markers, and argued for the idea that claims the rigid identity requirement is essentially semantic. Finally, we offered sets of further data which support the proposed analysis.

Let us conclude this paper by discussing the implications of our analysis. First, our analysis supports Takahashi's (2011) analysis with a wider empirical coverage. Second, it follows that not only lexical heads like V^0 but also functional ones like K^0 are subject to the rigid identity requirement, as long as they are contentful (see also Takita 2010 for the argument that T^0 is subject to the rigid identity requirement). Finally, N'-deletion can serve as a new diagnostic test that distinguishes Case-markers from postpositions: From a broader perspective, this further implies that the distinction between Case-markers and postpositions is necessary (Kuroda 1965, Miyagawa 1989, Sadakane & Koizumi 1995), which is sometimes overlooked in traditional and/or descriptive Japanese linguistics.

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