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Agreement-based approaches to binding phenomena: the case of Russian

Supervisor

Ch. Prof. Iliana Krapova

Assistant supervisor

Ch. Prof. Alessandra Giorgi

Graduand

Matteo Gozzi

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Abstract

In the present work I review some approaches to binding phenomena, namely those of Heinat 2006, Rooryck and Vanden Wyngaerd 2011 and Antonenko 2012. They share the idea that the fundamental syntactic relation behind what the version of Binding Theory developed in the GB framework calls binding phenomena is Agreement. I investigate the theoretical implication of these approaches and propose my own contribution to the analysis of anaphors and pronouns. Then, the conclusions I draw are tested on data from Russian language.

В настоящей работе я рассматриваю некоторые подходы к Связыванию и его феноменам, а именно те Гейната 2006, Роорыка и Ванден Вынгаерда 2011 и Антоненка 2012. Они разделяют идею, что основная синтаксическая связь за тем, что Теория Связывания развита в области генеративной лингвистике называется феноменами связывания, является Согласованием. Я исследую теоретические выводы этих подходов и предлагаю свой вклад в анализ анафоров и прономиналов. После этого, я тестирую свои выводы пользуясь данными из русского языка.

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Вступление

Настоящая работа посвящена рассмотрению Теории Связывания и её применению к русскому языку.

Теория связывания рождалась в области хомской генеративной грамматики в 60-ые годы, и с тех пор продолжает развиваться. Ранние концепции этой теории, однако, неизбежно изменились.

Согласно формулировке Теории Управления и Связывания, представленной Хомским в 1981-ом году, языковая способность каждого человека является врождённой: определённый язык, развивающийся в мозгу каждого говорящего, имеет биологическую основу и происходит из когнитивных устройств, которые являются свойственными человеческому роду. Эта врождённая способность называется Универсальной Грамматикой. Тем не менее, на свете существуют многочисленные языки. Это объясняется тем, что Универсальная Грамматика обеспечивает новорождённого набором принципов, которые остаются одинаковыми во всех языках, и набором параметров, которые могут быть установленными неодинаково в разных людях, в зависимости от того, какой у них родной язык. Поэтому, языковая способность каждого человека вытекает из взаимодействия Универсальной Грамматики с языковым контекстом, окружающим его. Тот факт, что принципы обеспечивают говорящих самых разных языков одинаковыми языковыми средствами, даёт возможность лингвистам генеративной грамматики предлагать объяснения для языковых явлений, учитывая сходства устройств языков. На этом фундаменте лингвисты генеративного направленияⁱ строили Теорию Связывания.

‘Классическая’ версия Теории Связывания, разработанной в области Теории Управления и Связывания, *«содержит принципы и параметры, касающиеся референциальной интерпретации именных групп в связи с их антецедентами»*ⁱⁱ.

Она разделяет именные группы на три типа:

- *Анафоры*: ИГ, которые должны быть связаны в пределах своего локального составляющего. Например, рефлексивы.

ⁱ Особенно Н.Хомский и Т.Рейнхарт.

ⁱⁱ Я.Тестелец 2001, 594.

- *Прономиналы*: ИГ, референция которых определена дейктически; они не могут быть связаны в пределах своего локального составляющего. Например, личные местоимения.
- *Референциальные выражения*: ИГ, которые ни в коем случае не могут быть связаны: полные ИГ.

Составляющий - в котором анафоры должны быть связаны антецедентом, а прономиналы не могут быть связаны антецедентом - называется областью связывания или областью непрозрачности. Эта область определена присутствием или отсутствием “фактора непрозрачности”, который в русском языке является финитным подлежащимⁱⁱⁱ. Если анафор не находит подходящего антецедента в своей области связывания, или если прономинал находит антецедент в такой же области, результат деривации является неграмматичным. В системе Теории принципов и параметров связывание происходит с помощью индексов и командования: «ИГ α называется связанной антецедентом β , если β командует α и обе эти ИГ помечены одинаковым Референциальным индексом»^{iv}. Соответствующим образом, суть Теории связывания составляется из трёх принципов:

Принцип А: Анафор связан в своей непрозрачной области.

Принцип В: Прономинал свободен в своей непрозрачной области.

Принцип С: Референциальное выражение свободно.

Несмотря на то, что эта версия Теории Связывания позволяет объяснить значительное количество данных, существуют причины, оправдывающие её переработку. Среди этих причин находятся и неспособность теории объяснить природу тех именных групп, которые она описывает, и наступление Минималистической Программы в генеративной грамматике.

Минималистическая Программа, фундаментальные понятия которой были

ⁱⁱⁱ Точнее, фактор непрозрачности является финитным подлежащим для рефлексивов, а для реципроков любым подлежащим

^{iv} Я.Тестелец 2001, 597.

представлены самим Хомским в 1995-ом году, основывается на мысли, что языковая способность и её структуры отвечают критериям оптимальности^v и совершенства. Поэтому постулируется, что синтаксис строит свои деривации из некоторых выбранных лексических элементов с помощью таких операций, главным образом, как *соединения*, *передвижения* и *согласования*, в последовательностей шагов, названных “фазами”. После момента “озвучивания” (Spell-Out), каждая деривация отправлена на два “интерфейсных” уровня: на фонологическую форму (ФФ), которая сообщается с артикуляторно-перцептивной системой, и на логическую форму (ЛФ), связанную с семантико-концептуальной системой. Если деривация удовлетворяет интерфейсные условия, она “сходится”, в противном случае она “терпит неудачу”. Удовлетворение интерфейсных условий происходит посредством проверки признаков, введенных в деривацию в лексикальных элементах. Деривация сходится только тогда, когда в моменте озвучивания все признаки деривации проверены. Более того, устройство и процессы связаны с языковой способностью и характеризованы принципами экономии: принципами “кратчайшего передвижения”, “осрочки”, “жадности” и “крайнего случая”.

Тем не менее, версия Теории Связывания, разработанная Хомским в 1995-ом году, только превращает предыдущую теорию на процедуру для толкования ИГ, но понимание синтаксических явлений, регулирующих анафорические отношения, вместе с уяснением статуса анафоров, прономиналов и референциальных выражений в деривационной модели синтаксиса ещё отсутствует.

Несмотря на это, в области Минималистической Программы были разработаны теоретические приёмы, которые позволяют новые и многообещающие рассуждения явлений связывания.

Первый из них является новой версией широко признанного синтаксического отношения: согласования. Песетки и Торрего предлагают версию согласования, характеризованную возможностью для признаков на вершинах быть одновременно интерпретируемыми и неоценёнными или неинтерпретируемыми и оценёнными:

Согласование (версия разделения признаков)^{vi}

- (i) Неоценённый признак П (*зонд*) на вершине В в синтаксической позиции α (P_α) сканирует свою область командования за однородный признак П

v Согласно предложению Принс и Смоленски 1993.

vi Песетки и Торрего 2007, 268.

(цель) в позиции β (Γ_β), с которым он согласуется.

- (ii) Заменить признак Γ_α признаком Γ_β , чтобы тот же признак находился в обеих позициях.

Во-вторых, система Распределённой Морфологии позволяет объяснить междязычное варьирование по отношению к выражению анафоров и прономинатов. В самом деле в Распределённой Морфологии лексикон не является ёмкостью, включающей в себя все лексемы и снабжающей ими вычислительную систему в начале деривации. Скорее он разделен на три части:

1. Морфемы: они являются пучками синтаксических и семантических признаков, без фонологического содержания. Они также разделяются на корневые морфемы, синтаксическая категория которых не определена, и функциональные морфемы..
2. Словарные единицы: пары, объединяющиеся пучки признаков с соответствующим фонологическим содержанием. Этот процесс называется “Экспонированием”.
3. Энциклопедия: она содержит операции для семантического истолкования составляющих дериваций, включая особенные, неконфигурационные виды значения.

Морфемы, как правило, введены в деривацию уже в её ранних этапах. Словарные единицы, наоборот, подвергнуты так названному “позднему вставлению”: их связь с синтаксическими составляющими деривации создаётся только после озвучивания^{vii}. Разумеется, также элементы энциклопедии воздействуют на деривацию после озвучивания.

Вставление словарных единиц регулируют особые правила вставления. В частности, применение этих правил подчиняется принципу поднабора^{viii}, который устанавливает, что словарную единицу можно вставить в морфему, если она имеет все признаки или поднабор признаков, находящихся в той морфеме. Если слово включает в себя признак, отсутствующий в морфеме, то вставление запрещено. Когда больше одного слова удовлетворяет условия для вставления, выбирается

vii Между озвучиванием и ФФ ещё могут осуществляться некоторые морфофонологические операции. См. раздел 1.2.3. настоящей работы.

viii Халле 1997. См. примечание 47 в первой части настоящей работы.

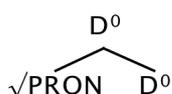
словарная единица с самым большим количеством соответствующих признаков.

Вдобавок в Распределённой Морфологии синтаксис и морфология подчиняются тем же правилам. Другими словами, морфология является “синтаксисом под V^0 ”.

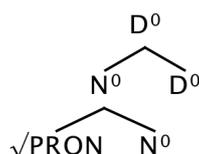
В настоящей работе я рассматриваю три теоретических предложения для переработки Теории Связывания, а именно Гейнат 2006, Роорык и Ванден Вынгаерд 2011 и Антоненко 2012.

Гейнат объясняет разницу между референциальными поведением анафоров и прономинатов, пользуясь разными морфосинтаксическими структурами для этих двух Детерминантных Групп: по его мнению, анафоры и прономинаты вытекают из той же корневой морфемы, но прономинаты соединяются с именной словоизменяющей морфемой, а анафоры - с детерминаторной словоизменяющей морфемой:

a.



b.



Поскольку ϕ -признаки (лицо, число и род) являются оценёнными в именной морфеме, а не оценёнными в детерминаторной морфеме, синтаксические поведения анафоров и прономинатов расходятся. Дело в том, что не оценённые признаки надо проверить перед озвучиванием. Синтаксическим отношением, позволяющим анафорам получить ценность для своих ϕ -признаков, является согласование. В деталях - анафор должен стать целью какого-то зонда (другой ДГ), командующего им, который называется antecedentом. Благодаря согласованию анафора с antecedentом, ϕ -признаки анафора получают ценность ϕ -признаков antecedента. Это позволяет деривации сходиться, и к тому же в логической форме анафор получает референцию своего antecedента. Наоборот, так как прономинаты не нуждаются в ценностях для своих ϕ -признаков, они не согласовывают с другими ДГ и не могут иметь antecedента. Словарные единицы, использованные для выражения этих двух типов ДГ, варьируют в зависимости от лексического набора разных языков. Например, в определённом языке те же словарные единицы могут быть

использованы для выражения и анафоров, и прономиналов, а в другом существуют и словарные единицы, предназначенные для анафоров, и словарные единицы, предназначенные для прономиналов.

Эта интуиция, вместе с понятием о том, что не только вершины, но и максимальные проекции могут служить зондами, позволяет Гейнату создать систему, в которой соактантная кореференция получает строгое синтаксическое объяснение. Вдобавок его предложение позволяет отказываться от областей непрозрачности, потому что локальность анафорических отношений зависит от того, доступный ли анафор для антецедента в данном этапе деривации. Другими словами, составляющий, в котором анафорические отношения данной деривации могут осуществляться, определён фазами той деривации.

Вопреки всем достоинствам подхода Гейната, однако, он не включает в себя объяснения о рефлексивных протяжательных местоимениях, главным образом потому что кажется, что они не нуждаются в командовании антецедента и могут находиться далеко от него в предложении.

Подход, разработанный Роорыком и Ванден Вынгаердом, представляет много сходств с предложением Гейната, но отличается от него относительно синтаксического поведения анафоров. Авторы поддерживают мысль, что антецедент и анафор связываются с помощью согласования, но, по их мнению, для того, чтобы связывание между этими двумя ИГ осуществлялось, анафор должен командовать антецедентом в каком-то этапе деривации. Они откровенно отказываются от понятия синтаксической кореферентности, основанной на рефлексивности, которое является семантическим результатом синтаксических операций. Это утверждение поддерживает гипотезу о том, что интерфейсный уровень ЛФ может различать признаки, входящие в деривацию уже оценённые, от признаков, получающих ценность в курсе деривации. Пологая, что набор словарных единиц определённого языка включает в себя и единицы, предназначенные для анафоров, и единицы, предназначенные для прономиналов, в первом случае ФФ выбирает прономинальную словарную единицу (обычно, это местоимение), а во втором, анафорическую словарную единицу (т.е. рефлексив). Кроме того, Роорык и Ванден Вынгаерд разделяют анафоры на два типа: простые и сложные.

Простые анафоры отличает непереходный синтаксис (а), а сложные анафоры – переходный (b).

a. ____ [гг глагол [рг [дг анафор] [Р [дг antecedent]]]]

b. [гг [дг antecedent] г [гг глагол [дг анафор]]]

Простые анафоры соединяются с деривационной структурой в качестве спецификаторов в сложном состоявшем РГ (Релаторная Группа), занимающем позицию комплемента непереходного глагола. Так как antecedent занимает комплемент того же составляющего, согласование происходит как только анафор сканирует вниз. Сложные анафоры, наоборот, соединяются со структурой в позиции комплемента переходного глагола, но они не могут сразу согласоваться со своим antecedentом. *Гипотеза низкого именительного*, предложенная Сигурдссоном в 2006-ом году, предусматривает, что именительный составляющий соединяется со структурой перед всеми другими ДГ и получает свой падеж автоматически. Поэтому, вначале именительный antecedent недоступен для анафора, находящегося ниже. Чтобы получить ценность для своих φ -признаков, сложный анафор должен передвигаться в сторону спецификатора лёгкой глагольной группы (Spec-vP). Оттуда он может согласоваться с antecedentом.

Этот подход к Теории Связывания позволяет объяснить и так названные “возвратные глаголы”, и рефлексивные притяжательные местоимения, и логофоры, которые являются анафорами, входящими в деривацию с оценёнными φ -признаками при определённых речевых причинах.

Третий подход, проанализированный в настоящей работе, был разработан Антоненком в 2012-ом году. В отличие от предыдущих подходов, Антоненко не применяет концепции Распределённой Морфологии. В этом анализе рефлексивность является примитивным синтаксическим фактором, так что существует особый, предназначенный для неё, ρ -признак. P -признак представляется оценённым в рефлексивах, а не оценённым в выше фазовых вершинах. Его оценивание происходит с помощью согласования и приводит к введению λ -оператора на вершине не оценённого признака, а тот оператор связывает рефлексивную переменную, создавая кореферентность. Области непрозрачности опять совпадают с фазами, о которых Антоненко представляет деривационный отчёт. Точнее говоря, данная фаза может закрыться только после того, как некоторые из её признаков, названных Д-признаками, получили ценность.

Опять полагается, что анафоры разделяются на два типа: простые и сложные.

Разница между ними не лежит в их синтаксическом контексте, а касается ценности их φ -признаков. Сложные анафоры входят в деривацию с оценёнными φ -признаками, а простые – с неоценёнными.

Автор анализирует разные явления связывания в русском языке, предлагая, что ориентирование к подлежащему, показанное русским рефлексивом себя, объясняется тем, что φ -признаки в простых анафорах не могут получать ценности до соединения со структурой вершины В (Время, Tense).

Этот подход позволяет объяснить разные ограничения на связывание в разных мировых языках: всё зависит от того, оценены ли φ -признаки в анафорах, входящих в деривацию, и каково их взаимодействие с фазами.

Мой анализ основывается на мысли, что кореферентность (и впоследствии рефлексивность) не представляет собой примитивный грамматический фактор, а является эпифеноменом, вытекающим из синтаксических процессов. Подробнее, она является результатом синтаксического согласования между Детерминаторными Группами. Связь между согласовывающими ДГ сохраняется после озвучивания и определяет действие интерфейсов: ФФ предоставляет анафорические словарные единицы тем ДГ, в которых находятся φ -признаки, оценённые в курсе деривации, а тем ДГ, входящим в деривацию с оценёнными φ -признаками, ФФ предоставляет прономинальные словарные единицы. Если в наборе словарных единиц данного языка нет анафорических словарных единиц, тогда используются те же словарные единицы для обоих синтаксических контекстов. Истолкование в ЛФ первого типа ДГ является анафорическим (т.е. рефлексивным), а в ЛФ второго типа ДГ – бессвязным.

Первым последствием этого подхода является отказ от предложения Антоненка: постулировать предназначенный признак для выражения рефлексивности - несовместимо со строгой минималистической гипотезой, потому что в данном случае требуется введение в синтаксическую деривацию признака, отражающего семантическое явление, которое можно объяснить с помощью более элементарных синтаксических процессов. Поэтому я думаю, что различия между синтаксическим и семантическим поведением анафоров и прономиналов нужно искать в их внутренней структуре.

Следовательно, анализ Гейната служит отличной отправной точкой для новых исследований, поскольку он предлагает обстоятельный отчёт синтаксической

разницы между прономиналами и анафорами. Однако, подход Гейната не объясняет эмпирических наблюдений о том, что анафорические элементы разнообразны в одном и том же языке, и что они встречаются в разных синтаксических контекстах. Об этих фактах, с другой стороны, дают отчёт Роорык и Ванден Вынгаерд в своём анализе, предлагая, что простые анафоры соединяются с деривационной структурой в сложном составляющем РГ, вместе с именительным актантом, в комплементе непереходного глагола (Compl-V). Сложные анафоры ведут себя по-другому: в начале они занимают позицию комплемента переходного глагола, а потом передвигаются в спецификатор лёгкого глагола (Spec-v), чтобы командовать антецедентом и получить ценность для своих φ -признаков.

В настоящей работе проверяется присутствие в русском языке некоторых структур, аналогичных тем, которые описали Роорык и Ванден Вынгаерд. Для того чтобы достичь этой цели, я анализирую распределение рефлексивного местоимения *себя* и рефлексивного суффикса *-ся* в разных синтаксических контекстах, а именно, в сочетании с глаголами телесного вреда (например, *ранить*) и физического нарушения (например, *сломать*), с психическими глаголами (например, *удивить*) и другими. Мой анализ, который фокусируется на возможность получить речевой фокус через ударение, перенести пассивизацию, получить психологическое истолкование и, вдобавок, строгое истолкование в случае ГГ-эллипса, показывает что *себя* и *-ся* не находятся в одинаковых контекстах. Поэтому я утверждаю, что русский суффикс *-ся* является простым анафором, соединяющимся с деривационной структурой в сложном составляющем РГ, и превращающимся в глагольный суффикс благодаря морфофонологическим процессам. Рефлексивное местоимение *себя*, наоборот, является сложным анафором, входящим в деривации в комплемент переходного глагола и вынужденным передвигаться вверх, чтобы командовать антецедентом.

Таким образом ограничения локальности, действующие на явления связывания, получают синтаксическое объяснение. Антецедент в главной клаузе не может связываться с анафором в зависимой клаузе изъявительного или сослагательного наклонения, потому что Комплементарная Группа этих двух сортов клауз является всегда закрытой фазой, так что, если анафор не получает ценности для своих φ -признаков перед соединением комплементаризера, деривация неизбежно терпит неудачу. Когда они находятся в главных клаузах, русские анафоры всегда связаны с подлежащим. В случае суффикса *-ся* этот факт следует

из того, что в составляющем РГ согласование с именительным актантом осуществляется рано в деривации, и оно исключает все другие возможности согласования. Местоимение *себя*, с другой стороны, вынуждено передвигаться, но его точка приземления - несмотря на то, сколько актантов имеет переходная ГГ - всегда находится в спецификаторе лёгкого глагола. Поэтому, и когда анафор входит в деривацию как прямое дополнение глагола, и когда он входит как косвенное дополнение, он согласовывается всегда с подлежащим в спецификаторе л.г. В инфинитивных конструкциях показываются самые интересные явления связывания, а именно, вид зависимого глагола может определять референтное поведение рефлексива *себя*. Это происходит при объективном контроле ПРО (нулевого подлежащего инфинитивной клаузы): когда вид инфинитивного глагола является несовершенным, antecedентом анафора может быть только прямое дополнение главной клаузы, а когда вид глагола совершенный, зависимый анафор может отсылаться и к главному подлежащему.

Рефлексивное притяжательное местоимение *свой* показывает подобные ограничения локальности, но его деривация отчасти отличается от деривации рефлексива *себя*. Дело в том, что *свой* находится внутри ДГ, но он не может получать ценности для своих ϕ -признаков от ИГ внутри того же самого ДГ. Чтобы оценить ϕ -признаки анафоров (которые являются соединением корневой морфемы с детерминаторной словоизменительной морфемой), нужно согласование с другим ДГ. Опять, это получается с помощью передвижения ДГ, содержащего притяжательное местоимение, в позицию, от которой возможно командовать antecedентом, т.е. в позицию спецификатора л.г.

Реципрок *друг друга*, разумеется, всегда требует множественного antecedента. Кроме того, он имеет свойства, похожие на свойства рефлексива *себя* относительно ограничений локальности, но при объективном контроле ПРО в инфинитивной клаузе он ни в коем случае не может отсылаться к главному подлежащему. В главном клаузе с косвенным дополнением глагола реципрок *друг друга* может связываться и с прямым дополнением.

Настоящая работа показывает, что применение синтаксического подхода к явлениям связывания является не только основанным на твёрдых теоретических предположениях, но и эффективным для объяснения эмпирических данных русского языка. Конечно, требуются ещё исследования для точного описания этих

феноменов, в частности относительно их взаимодействия с явлениями так названной левой периферии. Этот вопрос может служить хорошей темой для будущих работ.

Binding theories within the generative framework

1.1. Binding in Government and Binding theory

In the following chapters I briefly review binding theory as it is formulated in Government and Binding theory (henceforth GB) and described in Chomsky 1981, 1982, 1986a,b. Beside being an overview of the phenomena binding theory has to deal with, this presentation will also be a useful introduction to the terminology that will be used throughout the present dissertation, part of which has been subsumed into more recent versions of the theory.

1.1.1. Government and Binding theory: fundamental concepts

The sets of rules Government and Binding theory uses to describe natural languages rely on precise theoretical assumptions.

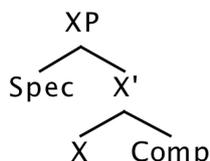
First, the faculty of language is common to every human being and it is a separate module with its own characteristics in the brain/mind system. What is identical throughout speakers of all languages (without considering physiological structures) is the Universal Grammar (UG), a set of common grammatical principles every man is equipped with. What changes depending on the specific language one is exposed to during the period of first language acquisition are the parameters of UG, whose different setting is the source of linguistic variation. Thus, a specific setting of these parameters corresponds to the rules of a natural language. If a sentence of a given language conforms to these rules, then it is said to be grammatical, otherwise it is ungrammatical.

Sentences are formed through derivations: lexical elements are taken from the lexicon and put together to form a D(eep)-structure, then they undergo a series of syntactic transformations which results in a S(urface)-structure: the syntactic object that is

phonetically uttered. Syntactic transformations affect syntactic constituents, which are called phrases and differ from each other in terms of the categorial specification (either lexical or functional) of their principal element: the head¹.

Sentence structure in GB theory is top-down and it is regulated by X-bar theory, which predicts the following fundamental structure:

(1)

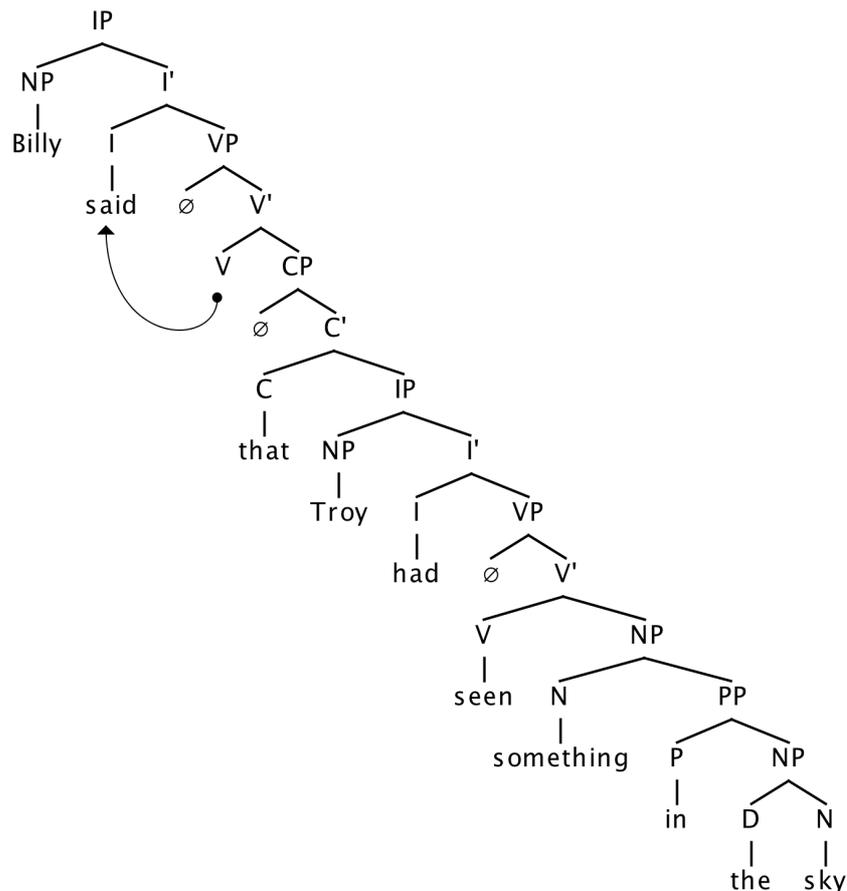


The constituent order(s) allowed in specific languages is a matter of parametric variation. Head (X), Complement (Comp) and Specifier (Spec) are purely configurational concepts and the latter are categorially restricted only with respect to specific heads. A phrase whose head possesses both a complement and a specifier is called a maximal projection and the relationships established within it are local relationships. In addition, if the XP or the X' levels are recursive, they are said to be adjuncts.

This is an example of a GB phrase marker (or syntactic tree):

¹ Lexical heads are Nouns (N), Verbs (V), Adjectives (A) and Prepositions (P); functional heads are Inflections (I), which at a late stage of the theory contains Tense (T) and Agreement (AGR), and Complementizers (C).

(2)



Government and the other relationships between the nodes of the same syntactic tree (i.e. between the different phrases and inside maximal projections) are summarized by Epstein 1999² in “the unifying construct” government:

(3) *Government.*

- a. *X governs Y* iff
 - i. *X m-commands Y* and
 - ii. There is no *Z*, *Z* a barrier for *Y*, such that *Z* excludes *X*.
- b. *X m-commands Y* iff the minimal maximal projection dominating *X* dominates *Y*
- c. *X excludes Y* iff no segment of *X* dominates *Y*.
- d. *X* dominates *Y* only if every segment of *X* dominates *Y*
- e. *Z* is a *barrier* for *Y* iff
 - i. *Z* immediately dominates *W*, *W* a blocking category for *Y*, or

² Epstein and Hornstein 1999, 322.

- ii. Z is a blocking category for Y and $Z \neq IP$.
- f. A maximal projection X *immediately dominates* a maximal projection Y iff there is no maximal projection Z such that X dominates Z and Z dominates Y.
- g. Z is a *blocking category* for Y iff
 - i. Z is not L-marked *and*
 - ii. Z dominates Y
- h. X L-marks Y iff X is a lexical category that θ -governs Y.
- i. X θ -governs Y iff
 - i. X is a zero-level category and
 - ii. X θ -marks Y and
 - iii. X and Y are sisters

Although in the analysis carried out in the present work I am not going to use most part of the notions just mentioned, the definition clearly shows that government is a fundamental relationship in GB theory. In fact, it is found in every subsystem of it: bounding theory, government theory, θ -theory, binding theory and control theory.

Now I will take a closer look on binding theory.

1.1.2. Noun phrases, coreference and indices

The goal of binding theory is to give a thorough account of the structural conditions on coreference between different noun phrases. In Government and Binding theory, according to how they are assigned reference, noun phrases are divided into three groups:

- *R-expressions*: expressions whose reference is fixed or only partially determined by the context. Ex: *Mary, animals, that boy*.
- *Pronominals*: elements which do not have an inherently specified reference and get reference from the context or deictically, i.e. from a pointing gesture; usually they are specified for gender, person and number or for a subset of them. Ex: in English, *I, you, she, they*.

- *Anaphors*: they do not have inherent reference and rely on other linguistic elements (*antecedents*) to get their reference. Ex: in English, *herself*, *each other*.

Since anaphors receive their reference from a linguistic antecedent, they are said to be coreferent with it. Indices are used to signal coreference:

- (1) a. Mark_i loves himself_i.
 b. *Mark_i loves him_i.
 c. Mark_i loves him_j.

As we see, coindexation between an R-expression and an anaphor (1a) is considered grammatical, whereas coindexation between the same R-expression and a pronominal (1b) is not, but grammaticality can be restored if we give the pronominal a different index (1c).

It has to be noticed that the indices signaling coreference (or disjoint reference) are not real syntactical objects and their use is exclusively notational³.

1.1.3. Binding and c-command

The first condition the antecedent and the anaphor have to satisfy is *c-command*: the antecedent must c-command the anaphor. We adopt the following definition of c-command⁴:

- (2) α c-commands β iff α does not dominate β and every phrase γ dominating α also dominates β .

³ In some theories within the GB framework indices are claimed to be real syntactic objects. See for example, Fiengo and May, 1994. As I will discuss later in this work, this is not the view adopted in the present work and within the Minimalist Program in general.

⁴ See Reinhart, 1981.

The c-command requirement explains the difference of grammaticality between (3a) and (3b)-(3c): in the first grammatical example the subject-antecedent is in a c-command configuration with the anaphor. In the other two examples the antecedent either follows the anaphor (3b) or occupies an embedded position in the subject noun phrase (3c), resulting in ungrammaticality.

- (3) a. Mark_i loves himself_i.
b. *Himself_i loves Mark_i.
c. *Mark_i's sister_j loves himself_i.

Furthermore, the notion of c-command is included in the classical definitions of free and bound constituent⁵:

- (4) a. α is X-bound by β iff α and β are coindexed, β c-commands α and α is in an X-position
b. α is X-free if and only if it is not X-bound

1.1.4. Binding domains

One of the most controversial problems during the formulation of binding theory in the GB framework was the definition of the domains in which binding relations could take place. According to Chomsky 1981, these domains are defined by the following principles:

- (5) a. **Principle A:** an anaphor is bound in its governing category
b. **Principle B:** a pronominal is free in its governing category
c. **Principle C:** an R-expression is free

⁵ See Chomsky, 1981.

These principles rely on the notion of *governing category* (GC), which in turn makes use of the notions of SUBJECT, accessibility and *i*-within-*i* condition. Harbert 1995 proposes the following unified definition:

- (6) a. β is a Governing Category for α iff β is the minimal category containing α , a governor for α , and a SUBJECT accessible to α .
- b. SUBJECT = AGR where present, a subject NP otherwise
- c. α is accessible to β iff α is in the c-command domain of β and the assignment to α of the index of β would not violate *i*-within-*i* condition, (18-d).
- d. *i*-within-*i* condition: * $[\delta \dots \gamma \dots]$, where δ and γ bear the same index.

1.1.5 Binding theory in GB: the case of Russian

Russian language poses serious problems for the version of binding theory just outlined, especially concerning binding domains. In that respect, Rappaport 1986 presents a thorough analysis.

He identifies three types of anaphor in Russian language: the reciprocal *drug druga*, the reflexive pronoun *sebj*, and the reflexive possessive pronoun *svoj*.

The reciprocal *drug druga* does not have person, gender, nor number specification, but its second term takes case endings (except nominative). Moreover, it is possible to insert a preposition between its two elements. See (7)⁶:

- (7) a. Det_i $ljubjat$ $drug\ druga_i$.
children-NOM love each other-ACC
 The children_i love each other_i.

⁶ In this section I present Rappaport's analysis, therefore the examples presented are mainly his.

- b. Det_i dumajut drug o druge_i.
children-NOM think each about other-LOC
 The children_i think about each other_i.

Similarly, the reflexive pronouns *sebj* is not sensitive to person, gender nor number and although it takes case endings, it does not appear in nominative form. The possessive reflexive *svoj* does appear in nominative form, and it shows in addition gender and number inflections. It always appears as the Specifier of an NP:

- (8) a. $Volodja_i$ očen' ljubit sebj_i.
Volodja-NOM very-much loves self-ACC
 Volodja_i loves himself_i very much.
- b. $Volodja_i$ rasskazyval o svoej_i žizni.
Volodja-NOM talked about self's life-LOC
 Volodja_i was talking about his own_i life.

The first deviation from the predictions of classical binding theory comes from the c-commands requirement: once the presence of an accessible SUBJECT is verified, c-command does not suffice for the creation of a binding relationship. This is shown by the unacceptability of the interpretation in which the anaphor is coreferent with the direct object in (9):

- (9) a. $Milicioner_i$ rassprašival arestovannogo_j o sebe_{i/*j}.
policeman-NOM questioned suspect-ACC about self-LOC
 The policeman_i questioned the suspect_j about himself_{i/*j}.
- b. My_i dovezli rebenka_j do svoego_{i/*j} doma.
we-NOM took child-ACC to self's home-GEN
 We_i took the child_j to our_i/*his_j home.

Note that in the case of the reciprocal both the subject and the direct object are eligible as coreferent of the anaphor:

- (10) Milicionery_i rassprašival ix_j drug o druge_{i/j}.
policemen-NOM questioned them-ACC each about other-LOC
 The policemen_i questioned them_j about each other_{i/j}.

The second anomaly with regard to classical binding theory involves locality, thus binding domains. A preliminary distinction is made by Rappaport following Giorgi 1983: those anaphors which must have an antecedent in their governing category are *strict anaphors*, whereas *long distance anaphors* can be bound by noun phrases outside their GC. The next chapters are dedicated to the behaviour of Russian subject-external and subject internal anaphors

1.1.5.1. Subject-external anaphors

When the anaphor is outside the minimal clause governing it, the reciprocal and the two reflexive pronouns behave like strict anaphors, as it is visible from the impossibility of the matrix clause subject in (11) to bind the anaphor in the embedded clause (angle brackets mark the governing category):

- (11) a. Roditeli_i dumali <čto deti_j ljubjat drug druga_{*i/j}>.
parents-NOM thought that children-NOM love each other-ACC
 The parents_i thought <that the children_j loved each other_{*i/j}>.
- b. Vanja_i znaet, <čto Volodja_j ljubut sebja_{*i/j}>.
Vanja-NOM knows that Volodja-NOM loves self-ACC
 Vanja_i knows <that Volodja_j loves himself_{*i/j}>.
- c. Vanja_i znaet, <čto Volodja_j ljubit [svoju_{*i/j} sestru]>.
Vanja-NOM knows that Volodja-NOM loves self's-ACC sister-ACC
 Vanja_i knows <that Volodja_j loves *his_i/his own_j sister>.

However, the behaviours of reciprocals and pronouns differ in the context of infinitive clauses: only reciprocals maintain their binding domain unaltered, pronouns' binding domains seem to enlarge up to the minimal finite clause:

- (12) a. My_i poprosili ix_j <PRO_j nalit' drug drugu*_{ij} čajku>.
we-NOM asked them-ACC to pour each other-DAT tea-ACC
 We_i asked them_j <PRO_j to pour each other*_{ij} tea>.
- b. On_i ne razrešacet mne_j <PRO_j proizvodit' opyty nad soboj_{ij}>.
he-NOM not permit me-DAT to-perform experiments-ACC on self-INST
 He_i does not allow me_j <PRO_j to perform experiments on
 himself_i/myself_j>.
- c. $Professor_i$ poprosil assistenta_j <PRO_j čitat' svoj_{ij} doklad>.
professor-NOM requested assistant-ACC to read self's report-ACC
 The professor_i asked his assistant_j <PRO_j to read his own_{ij} report>.

The same difference of behaviour is found when the Specifier of the NP containing the anaphor is filled by a possessive personal pronoun⁷: the reciprocal (13) cannot be bound by an antecedent outside its GC, whereas the reflexive pronoun (14) can⁸.

- (13) a. <On_i čitali [žaloby drug na druga_i]>.
they-NOM read complaints-ACC each against other-ACC
 <They_i were reading [complaints against each other_i]>.
- b. *On_i čitali <moi žaloby drug na druga_i>.
they-NOM read my complaints-ACC each against other-ACC
 They_i were reading <my complaints against each other_i>
- (14) a. Ja_i čital <ego_j stat'ju o sebe_{ij}>.
I-NOM read his article-ACC about self-LOC
 I_i read <his_j article about myself_i/himself_j>.
- b. Ja_i čital <ego_j stat'ju o svoej_{ij} rabote>.
I-NOM read his article-ACC about self's work-LOC
 I_i read <his_j article about my_i/his_j work>.

⁷ Or by an adnominal genitive NP, which Rappaport considers a form of NP Specifier, at least within the boundaries of the present analysis.

⁸ Note that in both cases ambiguity arises.

At this point we could affirm that the Russian reflexive, being able to be bound by an antecedent from outside its GC, is a long distance anaphor, and that its local domain is the minimal finite clause containing it. If we assume that the notion of governing category is subject to parametric variation, however, we lose some important generalizations. In fact, beside reciprocals, all NP-traces⁹ in GB theory are taken to be anaphors, and their binding domain does not pattern with that of reflexive pronouns as well. Also, among world languages long distance anaphora of subject-external pronouns is sensitive to different clausal boundaries¹⁰. An explanation of this variation in terms of different governing categories tells us nothing about its deep motivations, therefore it is to be rejected.

1.1.5.2. Subject-internal anaphors

As for subject-internal anaphors, three types of anomalies call for an appropriate explanation: *i-within-i* effect, theta effect, and arbitrary reference.

The *i-within-i* effect consists in the binding of an anaphor internal to the subject of an embedded clause by a superordinate element in the matrix:

(15) The men_i knew that [pictures of each other_i where on sale].

This is motivated by the impossibility of the anaphor to be bound by the NP in which it is contained, due to the accessibility requirement in (6c). Contrary to expectations, no Russian subject-internal anaphor exhibits the *i/i* effect:

(16) a. *Dissidenty dumali, čto [[stat'i drug o druge] pojavilis' v
dissidents-NOM thought that articles-NOM each other-LOC appeared in
zapadnoj presse].
Western press-LOC
 Dissidents_i thought that [[articles about each other_i]had appeared in the
 Western press].

⁹ i.e. empty categories which result from the movement of an NP to a non-argument position.

¹⁰ For a detailed discussion on this matter, see Rappaport 1986, Rooryck and Vanden Wyngaerd 2011, Antonenko 2012.

- b. *Vanja znaet, što [[stat'ja o sebe/ svoej žene]
Vanja- NOM knows that article-NOM about self-LOC/self's wife-LOC
 pojavilas' v gazete].
appeared in newspaper-LOC
 Vanja_i knows that [[an article about himself_i/his own_i wife] appeared in
 the paper].

The second anomaly concerns theta effect, which is the c-command violating coreference between a subject-internal anaphor and the direct object NP of the same clause, given that the object NP designates the Experiencer of a cognitive state, i.e. a specific semantic role (theta-role). See (17a-c) vs (17b-d):

- (17) a. [The jokes about each other_i] amused the neighbours_i.¹¹
 b. *[Rumors about each other_i] had preceded them_i.
 c. [Pictures of himself_i] please John_i.¹²
 d. *[Pictures of himself_i] hit John_i in the face.¹³

In Russian we find theta effect with reciprocals, but not with reflexives:

- (18) a. [Spletni drug o druge] nas udivili.
rumors-NOM each about other-LOC us-ACC surprised
 [Rumors about each other_i] surprised us_i.
 b. *[Spletni o sebe/ svoej žene] udivili Vanju.
rumors-NOM about self-LOC/self's wife-LOC surprised Vanja-ACC
 [Rumors about him_i/his_i wife] surprised Vanja_i.

The third and last anomaly we examine in this chapter is arbitrary reference:

11 Reinhart 1983.

12 Lebeaux 1983.

13 *Ibid.*

Russian reflexive *svoj*¹⁴ (but not reciprocals) can have arbitrary reference when they occupy the Specifier position of a subject or predicate nominal NP¹⁵. Both cases are shown in (19):

- (19) U drugix, možet, deti i polučše, i poumnee, a
by others-GEN perhaps children-NOM both better and smarter but
 <*svoj vse ravno vsex dorože*>, potomu čto <(on)- *svoj*>.
self's-NOM nevertheless all more-dear because it-NOM self's-NOM
 Others, perhaps, have better and smarter children, but <one's own is
 nevertheless more dear>, because <it is one's own>.

Following Rappaport, what makes arbitrary reference possible is the absence of a suitable antecedent for the anaphor, so that the phenomena is not exhibited when the reflexive is in the complement of the subject NP: in these cases the antecedent is a PRO¹⁶ Specifier in Spec-NP¹⁷ and the interpretation of the anaphor is consequently bound. Nonetheless, why *svoj* in a predicate nominal cannot have the subject NP as an antecedent as in (19) remains to be explained, along with the impossibility of arbitrary reference in impersonal constructions (20a), the violation of the c-command requirement (20b) and the oddity of (20c):

- (20) a. **Svoju ženu vseгда tošnit.*
self's wife-ACC always nauseated
 One's own wife is always nauseated.
- b. *Na vse svoi pravila.*
to everything self's rules
 Everything has its own rules.
- c. ?*On svoj vrag.*
he-NOM (is) self's enemy-NOM
 He_i is his own_i worst enemy.

14 Occurrences of *svoj* in fixed phrases are excluded from the present analysis.

15 Note that *sebjá* cannot occupy such position.

16 See section 3.1.3.3.

17 In Russian the PRO subject of infinitive clauses can bind an anaphor, as we will see in detail later in this work.

The fact that in some syntactic contexts the control on PRO is not obligatory and also results in arbitrary reference¹⁸ cannot be overlooked and it is likely to impact on binding phenomena as well.

I conclude this section with a consideration. Classical binding theory does not account for the phenomena just reviewed. Nevertheless, it provides the material whose correct interpretation will lead to a theoretical advancement. Any new valid theoretical proposal must find a satisfying explanation for them.

18 Ex: [PRO_i to leave] would be my_i pleasure.

1.2. Binding in the Minimalist Program

1.2.1. The Minimalist Program

As the denomination suggests, the Minimalist Program (henceforth MP) is more a global approach towards the study of the language faculty than an organic and strict theory. Nevertheless, since this approach was introduced in the framework of generative grammar (by Chomsky 1993, 1995), its basic concepts continue and are reworked from GB theory.

A major source of differentiation between GB theory and the MP is the theoretical assumption that the design of language faculty should be perfect, optimal¹⁹, and respond to principles of economy of representation and of derivation²⁰. Such view yields that many notions widely used in GB (government, first among all), in the MP are treated as epiphenomena and therefore excluded from the group of fundamental forces acting in language processing (and as a consequence, from the descriptive tools dedicated to it).

1.2.1.1. MP's fundamental concepts

In the MP the notions of D-Structure and S-Structure²¹ are replaced by the more refined notion of phase²² of a derivation (D), which proceeds as follows. Lexical elements (LIs) are selected from the Lexicon and enter D with features which need to be properly processed in order for the derivation to converge at Spell-Out, the stage in which the syntactic representation, coded into both a Phonological Form (PF) π and a Logical Form (LF) λ , is sent to the Articulatory-Phonological interface A-P and the Conceptual-Intentional interface C-I respectively. The interfaces do not communicate with each other and once Spell-Out has sent them the properly encoded information, their work proceeds separately. If features are not properly processed before Spell-Out, the derivation crashes. If there are elements in D which do not receive an appropriate interpretation at PF or LF, the derivation crashes²³. The scheme in (21) shows a simple version of the minimalist T-

19 Optimal in the sense of Prince and Smolensky 1993.

20 See Chomsky and Lasnik 1993.

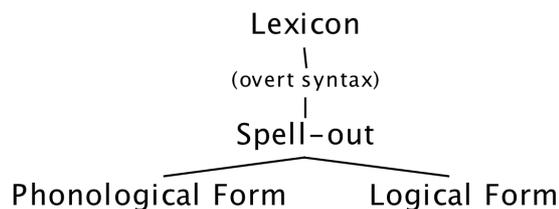
21 See section 1.1.1.

22 Phases will be discussed in details in section 2.3.1..

23 *Full Interpretation Principle*, Chomsky 1986a.

model²⁴:

(21)



It is important to underline that lexical features are to all intents and purposes what triggers syntactic operations, to the extent that «*the lexical entry provides, once and for all, the information required for further computations*»²⁵. There are various types of lexical features in Chomsky's 1995 proposal. To begin with, all Lexical Items come from the Lexicon with an edge-feature (EF)²⁶ which grants their connection with the syntactic representation currently processed: two separate derivations sent to Spell-Out at the same time would inevitably lead to a crash. Apart from this, the first distinction we ought to make is between two disjoint sets: the set of phonological features interpretable exclusively by the PF interface and the set of features interpretable exclusively by the LF interface. In turn, the features interpretable only at LF (and therefore deleted by PF) include semantic features, which are not accessible in the course of the derivation, and formal features FF(LI), which are. Formal features are further divided in intrinsic (present at lexical insertion) and optional (added as LI enters the derivation). Formal features are:

- categorial features (Noun, Verb, Adjective, etc.)
- ϕ -features (person, gender, number)
- Case-features (Nominative, Accusative, etc.)
- Strong F (EPP-feature, etc.)

The [\pm strong] dimension is narrowly restricted to features of nonsubstantive categories checked by a categorial feature. Strong features always trigger an overt operation and induce cyclicity. The only formal features interpretable at LF are categorial

24 For a more refined version of the T-model see Hornstein, Nunes and Grohman 2005, 73.

25 Chomsky 1995, 219.

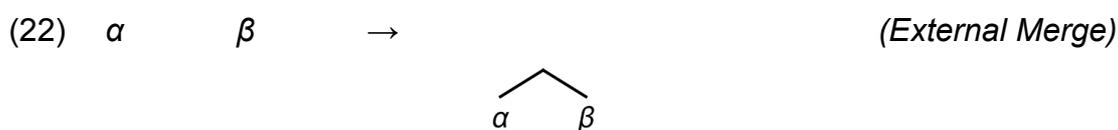
26 This theoretical solution is presented in Chomsky 2008.

features and \varnothing -features of nouns, whereas all the others are uninterpretable. By proper processing of features is meant that at Spell-Out all the unvalued uninterpretable features have been given a value (checked) and deleted, so that only interpretable valued features remain.

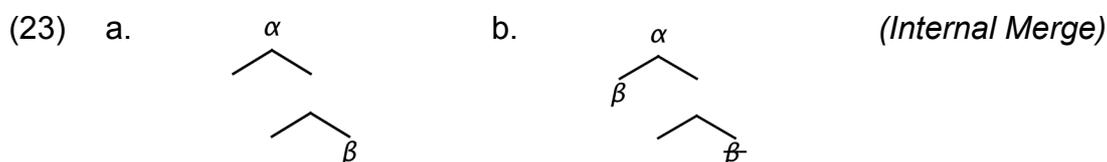
How do unvalued features on syntactic objects get valued? In order to answer to this question, first we have to introduce the operation Merge.

The operation Merge is the most important syntactic operations in the MP. It «takes two syntactic objects α and β and forms a new object $\gamma=\{\alpha,\beta\}$ »²⁷, where γ is the label containing the relevant information for the computation and usually corresponds to α or β . In addition, the *No-tampering Condition*²⁸ guarantees that Merge of α and β leaves the two syntactic objects unchanged by the process, while the *Inclusiveness Condition* states that «any structure formed by the computation (in particular π and λ) is constituted of elements already present in the lexical items selected for N (Numeration, i.e. initial lexical array)»^{29,30}.

Merge can be external or internal. The difference between these two operation is that External Merge combines two distinct rooted objects into one:



Internal Merge, on the other hand, «takes a subpart of an existing structure as one of the two internal objects. Internal Merge thus yields the effect of syntactic movement»³¹:



27 Chomsky 1999, 2.

28 «Merge of X and Y leaves the two SOs unaltered». Chomsky 2008, 138.

29 Chomsky 1995, 228.

30 The *Inclusiveness Condition* renders illegitimate indices, traces of movement and X-bar structures.

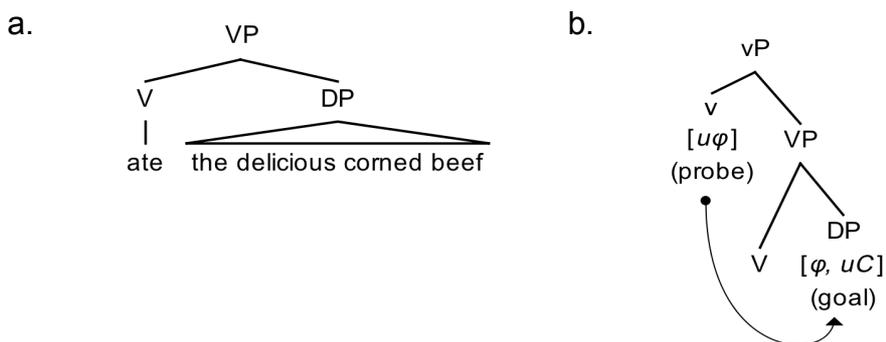
31 Citko 2005, 1.

In an object $K=\{\alpha\{\alpha,\beta\}\}$ produced by Merge, α projects, expanding the structure, and it is therefore the Head. The notions of Complement and Specifier do not change in the MP. Adjunction, on the other hand, is restricted to $X^{0\max}$ nodes (see below), and never to one of its constituents. These are the basic nodes in minimalist phrase markers:

- XP : maximal projection (not projecting further)
- X^{\min} : terminal element
- X' : intermediate node, invisible to computation and interfaces
- X^0 : head, or category formed through adjunction to a head
- $X^{0\max}$: zero-level maximal projection of X

Movement of constituents in the MP is described in Chomsky 1995 as Internal Merge: it can be seen as an attraction of a feature F_α by K : once merged to the existing structure, the new syntactic object acts as a probe in search of a goal. More precisely, the new object needs to value its unvalued feature instances, and in order to do that it searches its c-command domain^{32,33} for a valued instance of the same feature on another syntactic object³⁴. If a valued instance of the same feature is found, then a checking relationship is established, and the unvalued instance on the probing syntactic object becomes valued through an Agreement relationship. See (24)³⁵:

(24) The farmer [ate the delicious corned beef].



32 The definition of c-command remains the one presented in 1.1.

33 For a refined concept of probing domains, see Chapter 2 of the present work.

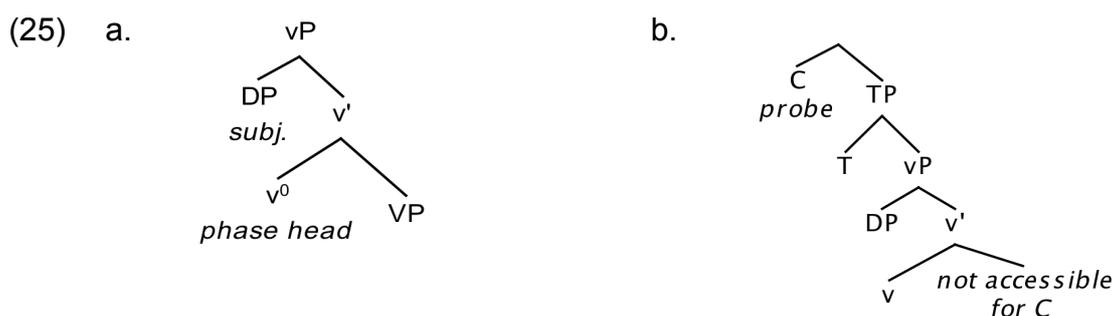
34 The exact nature of the syntactic objects which can probe and be probed will be discussed in section 2.1.1.

35 From Heinat 2006, which will be widely reviewed in 2.1.

In (24) the head v^{36} needs to value its ϕ -features and probes down its c-command domain (the VP). It finds the DP³⁷ with valued interpretable ϕ -features³⁸ in direct object position and it checks its unvalued ϕ -features against it, establishing Agreement. From this moment of the derivation, the ϕ -features instance on v have the same value of the ϕ -features of the DP.

If the checking relation involves the entire Lexical Item α containing F_α , then α is pied-piped³⁹ and the movement is explicit, otherwise the movement is covert. In both cases, a copy⁴⁰ of the moved syntactic object remains in base position. The probe-goal relationship is strictly two-membered: the intrinsic features of one goal value those of one probe at a time, but if the goal has an unvalued instance of a feature whose valued counterpart is possessed by the probe, Agree applies as well. The probe-goal relationship, and consequently c-command, is fundamental in order for syntactic operations to take place.

In conclusion of this section, I provide an initial definition of phase. Phases are essentially Spell-Out stages, in which part of the syntactic representation is sent to the interfaces. CP and vP are phases, and consequently C and v are phase heads. When the next phase head is merged to the structure, only the sister of the phase head is sent off to Spell-Out. So when vP is formed, VP is not yet sent to Spell-Out, but when C is merged and probes its domain, only v and its Specifier(s), the edge of v , are available as possible goals. This locality restriction is called *Phase Impenetrability Condition (PIC)*⁴¹. See (25)⁴²:



36 v is a 'light verb' supporting the meaning of V . See Larson 1988.

37 Determiner Phrase, following Abney's 1987 analysis of noun phrases.

38 It is of no relevance at this point of the exposition whether the ϕ -features belong to the DP or to N within it.

39 See Ross 1967.

40 «The trace of an overtly moved element is a copy of the moved element that is deleted in PF, but available for interpretation in LF». Chomsky 1993.

41 Chomsky 2001, 13-14.

42 Heinat 2006, 7.

Phases not only defines locality domain, but also introduce cyclicity in the derivation.

1.2.1.2. Redefining binding theory

As we have seen in the previous section, in a MP approach many of the concepts adopted by GB in order to give an account of binding phenomena need radical revision. The *Inclusiveness Condition* forbids indices and binding domains cannot be defined in terms of Government anymore. Chomsky 1995, concluding that binding principles apply at LF, reformulates them as interpretative procedures:

- (26) a. *Binding Principle A*
If α is an anaphor, interpret it as coreferential with a c-commanding phrase in D.
- b. *Binding Principle B*
If α is a pronominal, interpret it as disjoint from every c-commanding phrase in D.
- c. *Binding Principle C*
If α is an R-expression, interpret it as disjoint from every c-commanding phrase.

This solution leaves many question unanswered. There is no mention of binding domains, which need a new definition, no explanation for the different statuses of anaphors, pronominals and R-expressions, nor for the mechanisms ruling their syntactical and interpretative behaviour. Before looking into these issues, however, other assumptions about features and syntax in general need to be introduced.

1.2.2. On Agreement and feature classification

Chomsky 2000's definition of Agreement states what follows:

(27) Agree (Assignment version)

- (i) An unvalued feature F (a *probe*) on a head H scans its c-command domain for another instance of F (a *goal*) with which to agree.
- (ii) If the goal has a value, its value is assigned as the value of the probe.

Agreement is central in the MP: uninterpretable features need to be deleted before Spell-Out in order for the derivation to converge, but the unvalued ones cannot be deleted before receiving a value. Agree allows uninterpretable unvalued features to receive a value, therefore to be deleted. This Agreement relation is such that no link remains after it between the two instances of the involved feature; in fact, both syntax and the semantic interface have access only to the information about feature valuation, and not about the means it was achieved through. Furthermore, a correlation is stipulated between (un)interpretability and valuation: all uninterpretable features enter the derivation unvalued, all interpretable features are valued (*Valuation/Interpretability Biconditional*).

Pesetsky and Torrego 2007 proposes a new definition of Agreement:

(28) Agree (Feature sharing version)

- (i) An unvalued feature F (a *probe*) on a head H at syntactic location α (F_α) scans its c-command domain for another instance of F (a *goal*) at location β (F_β) with which to agree.
- (ii) Replace F_α with F_β , so that the same feature is present in both locations.

They also reject the *Valuation/Interpretability Biconditional* correlation, and instead proposes that features, with respect to interpretability and valuation, come from the lexicon in four types⁴³:

43 Feature sharing is signaled by the insertion of a number into the square brackets:

... $F_\alpha[]$... $F_\beta[]$... \rightarrow ... $F_\alpha[3]$... $F_\beta[3]$...

- $uF\ val$ uninterpretable, valued
- $uF\ []$ uninterpretable, unvalued
- $iF\ val$ interpretable, valued
- $iF\ []$ interpretable, unvalued

Following Pesetsky and Torrego, we use the term *instance of F* to refer to a feature-location pair, and the term *occurrence of F* to refer to distinct features that might undergo Agree.

The feature sharing version of Agreement inevitably demands that a link be preserved between F_α and F_β . Moreover, if the same feature can be present in more than two positions, nothing forbids the valued goal F_β , which has replaced the unvalued probe F_α , to act as a goal once again. As a consequence, Agreement between two unvalued occurrences of a feature is permitted, because both these instances can be valued later in the derivation by a third (valued) occurrence of the same feature. In other words, interpretability has no bearing on probing, valuation does.

At last, it becomes improper to talk about deletion of uninterpretable features: we rather ought to refer to this process as to deletion of uninterpretable instances of features. In fact, according to Brody 1997's *Thesis of Radical Interpretability*⁴⁴, every feature has at least an interpretable instance in the full derivation.

The implementation of these conclusions will prove fruitful in the investigations carried out in the next chapters, but before looking into them, another theoretical perspective on grammatical phenomena will be introduced.

1.2.3. Distributed Morphology

In Distributed Morphology (DM) the fundamental syntactic operations of MP (Merge, Move, Agree) and the Spell-Out mechanism are maintained. The innovations are nevertheless substantial and consist in the following properties⁴⁵:

44 *Thesis of Radical Interpretability* (Brody 1997)

Each feature must receive a semantic interpretation in some syntactic location.

45 See <http://www.ling.upenn.edu/~rnoyer/dm/>

I. *Late insertion*: the phonological expression of syntactic terminals is always provided in the mapping to PF, i.e. at Spell-Out. There is no unified Lexicon and its functions are distributed among other components of the grammar, namely:

- Formative list: all the bundles of semantic and syntactic features that can enter the syntactic computation; they are roots (ex: $\sqrt{\text{root}}$) without any categorial specification, nor phonological content.
- Vocabulary list: its members are the phonological counterpart of the formatives, to whom they are associated postsyntactically, at Spell-Out, in a process called exposition. A vocabulary item is a relation between a phonological string and the context in which this string may be inserted. For example:

(29)⁴⁶ *signal* ↔ *context of insertion*

/i/ ↔ [__, +plural]

Vocabulary items compete for insertion to syntactic nodes at Spell-Out following the *Subset Condition*⁴⁷ (or Elsewhere Principle): if two items have a similar set of features, the one that is more specific win.

- Encyclopedia: this component specifies interpretive operations that realize in a semantic sense the terminal nodes of a complete syntactic derivation, also associating syntactic units with special, non-configurational aspects of meaning.

II. *Underspecification of vocabulary items*: phonological expressions need not to be fully specified for syntactic positions where they can be inserted. Consequently, the phonological pieces of a word need not to supply the morphosyntactic features of

46 From Halle 1997.

47 «*The phonological exponent of a Vocabulary Item is inserted into a morpheme in the terminal string if the item matches all or a subset of the grammatical features specified in the terminal morpheme. Insertion does not take place if the vocabulary item contains features not present in the morpheme. Where several vocabulary items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal morpheme must be chosen*» (Ibid.)

that world. In cases where the featural content or the context of insertion are devoid of information, a default/elsewhere vocabulary item is inserted.

III. *Syntactic hierarchical structure all the way down*: elements within syntax and within morphology enter the same type of constituent structures. DM is piece-based in the sense that these elements are understood as discrete instead of as (the results of) morphophonological processes.

Morphemes in DM are the atoms of morphosyntactic representation and contain syntactico-semantic features; there are two types of morphemes:

- *F-morphemes*: their content suffices to determine a unique phonological expression, so that their Spell-Out is defined as deterministic. The vocabulary items associated to F-morphemes compete for insertion following the *Subset Principle*, but this is the only case in which they can be considered disjunctive.
- *I-morphemes*: they allow choices at Spell-Out, so that they are always considered as idioms. Roots are I-morphemes, and in certain local relations with category-defining F-morphemes (categorizers, or licensors) they give birth to categories. For example, a root whose nearest c-commanding F-morpheme is a determiner is a noun.

In a derivation, combinations of features and category-neutral roots enter the computation and establish structural relations through Merge, Move and Agree. The resulting configuration of terminal nodes is then sent to Spell-Out, which encodes it for the PF and LF components. However, certain morphological operations take place between syntax and Spell-Out:

- Morphological merger: a relation between the lexical heads X and Y may be replaced by the affixation of X to Y⁴⁸.
- Fusion: two morphologically merged nodes or two nodes adjoined through

⁴⁸ «At any level of syntactic analysis (*d-structure, s-structure, phonological structure*), a relation between X and Y may be replaced by (expressed by) the affixation of the lexical head of X to the lexical head of Y» (Marantz 1988, 261).

syntactic head movement can become a single vocabulary item.

- Fission: one terminal node is split into two distinct vocabulary items.
- Impoverishment: a change in the featural content on a terminal node that results in a less marked featural content
- Lowering: a head X is lowered to the head Y of its complement.
- Local dislocation: the order of two string-adjacent vocabulary items is reversed⁴⁹.

In DM the relation between morphosyntactic structures (morphemes) and their phonological realization (vocabulary items) is not always one-to-one, and this fact provides a powerful tool for the interpretation of cross-linguistic variation.

The next chapter deals with three proposals within the MP framework. They aim to give an account of binding phenomena without any dedicated stipulation, relying on the Agreement relationship.

⁴⁹ Note that for Embick and Noyer 2001 this operation takes place after the insertion of vocabulary items.

Three feature-based proposals for binding

2.1. Heintz 2006

Heintz's proposal about the nature and functioning of binding relations in the MP originates from two (inter)related issues, namely the nature of probes and goals and the nature of anaphors and pronouns.

2.1.1. The nature of probes and goals

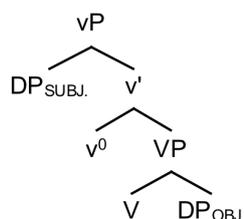
Heintz shows that there is a syntactic system where heads can probe and phrases cannot lack both theoretical and empirical bases. There are three areas where heads and phrases behave differently: phrase structure, movement and selection.

From the point of view of phrase structure, it is impossible to connect the ability to project to the ability to probe. In fact, probing relies on the c-command relation and works downwards, while projecting involves dominance¹ and works upwards. Furthermore, defining probing domains in terms of domination (the big square in (1)) instead of c-command (the small square in (1)) would result in an unexplicable relation through m-command between the subject DP² and v. Both the ascertained relationship between v and the object DP, to whom it assigns accusative case, and the suppression of m-command in the MP, persuade us to reject such an hypothesis.

1 Node N1 dominates node N2 if N1 is above N2 in the tree and one can trace a path from N1 to N2 moving only downwards in the tree. See Haegeman 1994.

2 Which is first merged within the vP. See Koopman and Sportiche 1991.

(1)



Then, the distinction in terms of probing between objects merged directly to the structure (or 'first merged') and objects already formed by Merge and successively merged to the structure, does not seem to be motivated anywhere else in the grammar and it is therefore unnecessary. Even more so considering that also heads can be seen as the result of syntactic operations in Distributed Morphology³.

Instead, from a phrase structure point of view there are good reasons to assume that phrases do probe.

In fact, the list of nodes of section 1.2.1.1. contains both phrases (XPs) and heads (X⁰s), but their definitions holds only with respect to whether they project or not⁴. The distinction has no meaning from the point of view of the computational system, because the derivational history is opaque for it. Considering that we need to maintain the distinction head-phrase⁵, a possible solution is that heads and phrases differ in terms of feature valuation⁶: features which are unvalued in D may be valued in DP thanks to N(P). In this way there is actually no difference of phrasal status between XPs and X⁰s.

Head-movement and phrasal movement are triggered by different factors, and therefore they are expected to show different properties. However, probing happens before movement, when the objects are merged, so that it is hard to see how these differences could have any impact on the ability of probing. Furthermore, Pesetsky and Torrego 2001 claims that the apparent difference between head movement and phrasal movement is just an effect of distance between the attractor and the attractee⁷. This view is shared also by Matushansky 2002, who claims that the two types of movements are

3 See section 1.2.3.

4 «there are no such entities as XP (X^{max}) or X^{min} in the structures formed by C_{HL} [Computation Human Language], [...]. A category that does not project any further is a maximal projection XP, and one that is not a projection at all is a minimal projection X^{min} ; any other is an X' , invisible at the interface and for computation.» (Chomsky 1995, 242)

5 As Heinat points out, VP corresponds to [_{VP} V DP], not to [_{VP} V D].

6 See Pesetsky and Torrego 2007 and section 1.2.2.

7 *Head Movement Generalization*, Pesetsky and Torrego 2001, 363.

caused by the same factor: Agree.

Heads select their complement and phrases can only act as selectees. This is easily explained by the fact that phrases are formed in narrow syntax and cannot be marked with selectional restrictions in the Lexicon. If we manage to tie the ability to probe with the ability to select, we would acquire a convincing evidence against probing phrases. One of the problems, however, is that there are heads (V, for example) which do select their complement, but do not probe it. Although this does not present particular problems, inasmuch the lack of probing can be explained by the absence of unvalued features in V, it nevertheless breaches the perfect unification of probing and selecting. Another argument against the unification we consider the behaviour of the expletive in Chomsky's 2001 analysis: the expletive is merged to satisfy the EPP-feature⁸ of T and it probes down its domain, but it does not select T.

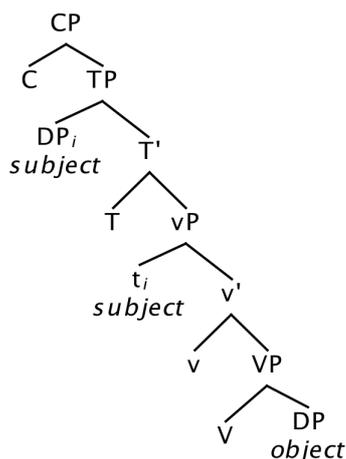
Even in our very brief overview, the arguments against the unification of probing and selecting seem sufficient to consider probing and selecting as two different phenomena.

2.1.2. Probing phrases

In order to demonstrate that probing phrases exist, Heinat uses the following clausal structure for transitive sentences, where the subject DP is first merged in Spec-v and then moved to Spec-T, assuming that not only probes, but also goals are active only when they have at least one unvalued feature.

⁸ *Extended Projection Principle*: All clauses must have a subject. See Chomsky 1981.

(2)



Furthermore, DP has valued ϕ -features and unvalued Case-feature, T has unvalued ϕ -features and v has unvalued ϕ -features. All three of them can act as probes or as goals.

From these premises, Heintz's analysis shows that a theory which allows phrases to probe does not result in empirical complications. The complete analysis, which include active main clauses, double object constructions, embedded finite clauses, passive constructions, raising constructions and ECM constructions, will not be reported in this work, but to follow Heintz's account of binding phenomena we will tentatively assume that there is nor theoretical, nor empirical reason to forbid phrases to probe. Therefore, both heads and phrases with unvalued feature probe as soon as possible in the course of the derivation, which is when they are externally merged to the structure.

2.1.3. Personal pronouns and reflexives

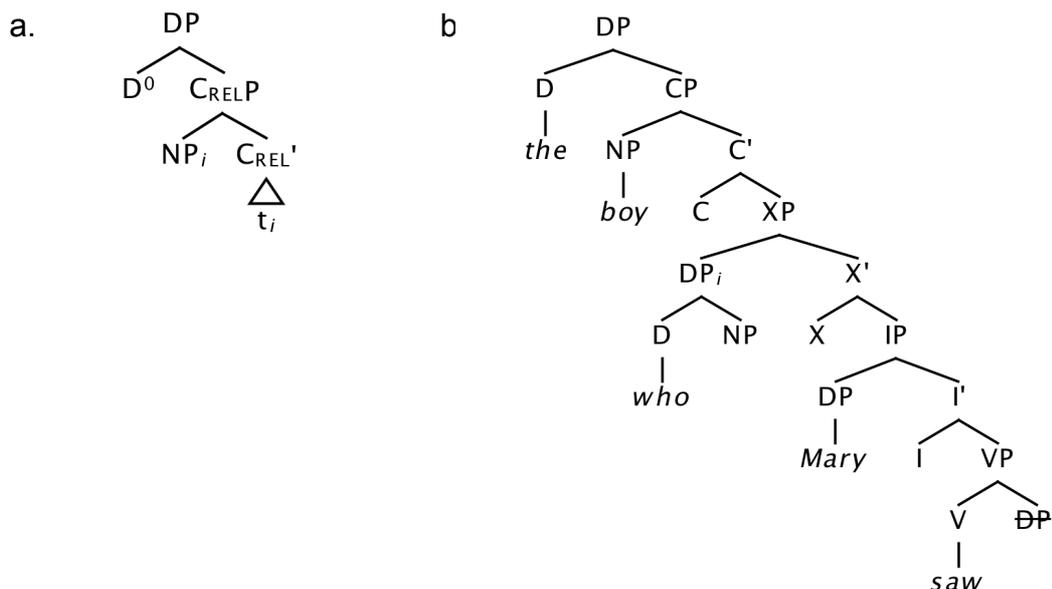
2.1.3.1. Personal pronouns

The denomination 'pronoun' is somehow misleading, in that what pronouns really substitute seem to be definite NPs⁹. Therefore, it would seem safe to state that pronouns are merged as D⁰ heads in the Spec-position of the DP, but there are other factors indicating that they are not determiners and that their merge position is lower in the

9 See Postal 1969.

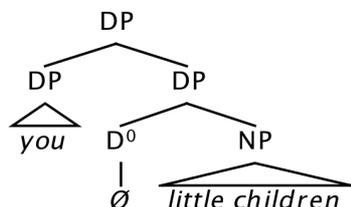
structure: in Heintz's data from Swedish language¹⁰ they can appear in DPs with determiners. Also, personal pronouns cannot be merged as determiners in relative clauses: if we adopt Kayne 1994's raising analysis¹¹ (3a), they are merged within the relative clauses and then raised, but the determiner position of the raised constituent is occupied by the relative pronoun (3b)¹²:

(3) the boy who Mary saw.



Further support to the NP-internal-generation of pronouns is provided by their interaction with adjectives: the only case where pronouns seem to occupy a position higher than adjectives can easily be accounted for in terms of adjunction:

(4) you little children



Finally, there are cases like (5a-b) where pronouns behave like nouns; virtually any

10 Heintz 2006, 3.2.2.1.

11 *Ibid.* Adopting an adjunction-based analysis does not allow pronouns to be merged as D-heads as well.

12 Bianchi 2000, 130.

category can function as a noun (5c), but putting aside their metalinguistic use (5d), pronouns seem to maintain a weak portion of their meaning (for example, semantic gender and type of discourse participant).

- (5) a. There will never be another you.
 b. Is it a *he* or a *she*?
 c. The *off* in turn off does not mean the same as the *off* in sod off, or does it?
 d. How many *mes* did you find in the text? More than *yous*?

According to Cardinaletti 1994, this is possible only on the condition that at some stage of the derivation the pronoun occupies N^0 .

Heinat's proposal conciliate all these claims: pronouns are not D-heads, they are generated NP-internally and occupy N^0 position, they are in fact roots¹³. More specifically, a root morpheme m^0 without any categorial specification is merged with an inflectional morpheme, in this case N^0 , which provides the categorial status of the resulting head:



The inflectional morpheme triggers feature valuation, resulting in assignation of reference, yet not all pronouns taking part in word formation processes are assigned reference in the same way. In a situation like (6) reference is assigned to the pronoun either anaphorically or deictically, taking into account its poor semantic content (7a). However, when the pronoun is not the root to whom the inflectional morpheme is merged to, it is not centered on the speaker of the sentence, but rather self-centered (7b). Also, when the pronoun is used as a noun (7c), it is the determiner that assign reference to the whole DP, even if the inflection is on the pronoun.

- (7) a. Troy is always lying. I don't believe him.
 b. He is trapped in the me-decade/we-decade.

13 See section 1.2.3.

c. The *mes* and *yous* of this world.

The fact that pronouns can be inflected inside words, together with the change in the meaning of the word at varying pronouns like in (7c), points out that, disregarding deictic/anaphoric assignment of meaning, every pronoun has its own particular semantic content. In fact, if we see the specification for number, gender and case as a contribution provided by the inflectional morpheme, then the variation of meaning in compounds like those of (7b) is hard to explain. Instead, Heinat claims that the form we see in compound words is the actual root. As a consequence, there are many roots with different person-related semantic specification. Reuland 2001 gives the following characterization of personal pronouns:

- (8) 1st [+ speaker] [- addressee]
2nd [- speaker] [+ addressee]
3rd [- speaker] [- addressee] = [other]
- 1st pl. inclusive [+ speaker] [+ addressee]
1st pl. exclusive [+speaker] [other]
2nd pl. [- speaker] [+ addressee] [other]
3rd pl. [other]

Since the composition in terms of speech act participants features suffice to specify lexically 1st and 2nd person forms, they can all appear in compound words, The 3rd plural person instead, needing a plural inflection in order to be distinguished from the 3rd singular person, does not appear in compounds.

Finally, for Heinat the case specification of word-internal pronouns depends on the zero case marking specified for a particular pronoun in a specific language, to whom the compound-form is homophonous.

2.1.3.2. Reflexive pronouns

Heinat adopts the following definition of reflexive pronouns (from Reuland 2001):

- (9) A reflexive is a (pronominal) form that express co-argument reference and the possibility of bound variable interpretation.

According to Reinhart 1983, all anaphors are bound variables. Among other characteristics, bound variables allow for 'sloppy' readings in VP-ellipsis:

- (10) The pianist_i said that she_i was busy. And so did Greg.
a. Greg said she was busy.
b. Greg said he was busy.

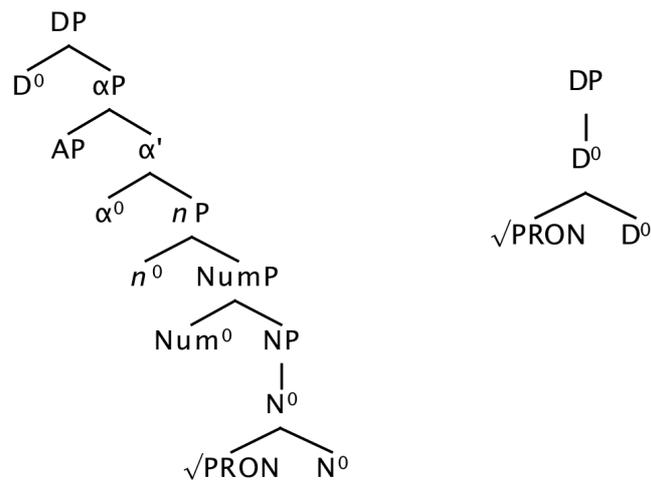
Reflexives, however, are always interpreted as bound variables:

- (11) The pianist praised herself. And so did Greg.
a. *?Greg praised her.
b. Greg praised himself.

The definition in (9) also exclude reflexives in non-argument position, such as *himself*, *yourself*, etc. with adverbial or emphatic use.

'Reflexivity', from a purely syntactic point of view, is a matter of what category forming head is merged to the pronominal root. The difference between a pronominal DP and a reflexive DP is that the common pronominal root $\sqrt{\text{PRON}}$ is merged as the complement of either N or D. Then, its morphophonological form is determined post-syntactically, in accordance with the availability of lexical elements. In most cases the new object moves up to D⁰ (or Spec-DP):

- (12) a. pronominal DP¹⁴ b. reflexive DP



The structures in (12a) and (12b) support the following predictions about the distribution of pronominal and reflexive DPs:

- Predicates do not operate any selectional restriction related to the 'reflexivity' of their arguments.
- We do not find reflexives, nor pronouns, with determiners.
- Reflexive cannot be modified by adjectives, pronouns can.
- Reflexives cannot be modified by relative clauses, pronouns can.

Heinat shows that these predictions are borne out for the languages on which he conducts his analysis: English and Swedish¹⁵.

2.1.3.3. The featural composition of personal and reflexive pronouns

In Heinat's system, in order to get reference, a definite DP must have a full set of φ -features and occupy an argument position. Pronominal DPs possess a set of uninterpretable valued φ -features and an interpretable unvalued T-feature for case. Assuming that, according to Josefsson 1998, inflectional features are generated in the category forming head, adopting the configuration in (12b) for reflexives means that they

¹⁴ For a complete description of the extended projection of the English DP see Abney 1987.

¹⁵ Heinat 2006, 3.3.2.

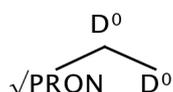
do not have a set of valued φ -features, because φ -features in D^0 , the category forming head of reflexives, are interpretable and unvalued.

Unvalued features need to be valued before Spell-Out¹⁶, therefore, in order for the unvalued φ -features of the reflexive DP to get a value, a probe-goal relation must take place to establish an Agreement relation between the reflexive DP and a DP with valued φ -features (the antecedent).

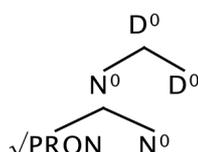
2.1.3.4. Insertion of vocabulary items

After narrow syntax, structure (13a) will get the form of a reflexive, (13b) the form of a personal pronoun:

(13) a.



b.



Vocabulary items are 'inserted' on the two structures of (20). In the case of English, I will omit the straightforward process of insertion of personal pronouns (which is a trivial mapping of φ -features and case) and briefly examine English reflexives. They are complex reflexives by virtue of the presence of the morpheme *self*, but this morpheme does not contribute to their meaning, which is determined partly by the agreement with the antecedent, partly by the antecedent's valuation of the φ -features of D^0 (the bound variable interpretation)¹⁷. This lack of semantic contribution allows the morpheme *self* in the reflexive to be inserted post-syntactically¹⁸: without this insertion there would be no differentiation between the reflexive form and the forms of the possessive pronoun (for 1st and 2nd person) and the personal pronoun (3rd person). The insertion of *self*, therefore, seem to be motivated by the lack of a dedicated item for the syntactic terminals in the lexical inventory of the language.

Cross-linguistically, however, we found different lexical means to express reflexivity,

¹⁶ See section 1.2.1.1.

¹⁷ Any 'reflexivizer' function of the morpheme *self* is therefore to reject in the present analysis. Reinhart and Reuland 1983, among others, support the opposite.

¹⁸ See section 1.2.3.

among which we list body part names, nominal sources denoting person, self, owner, etc., emphatic pronouns and object personal pronouns¹⁹. They can all be explained in terms of lexical inventory; more specifically, the lexical inventory a language dedicates to reflexives depends on the roots this language allows to merge with D^0 . The morphophonological realization of the φ -features agreement is also language specific.

2.1.4. The valuation of reflexive DPs' φ -features

Taking advantage of the conclusions on probing phrases reviewed in section 2.1.2. and of those concerning the syntactic structure and morphophonological form of pronouns of section 2.1.3., I can now depict how reflexive DPs' φ -features are valued in the derivation. Also, I adopt the classification of features of Pesetsky and Torrego 2007 as reviewed in section 1.2.2. Their definition of Agreement is taken into account as well, but Heinat proposes a slight, though fundamental modification:

(14) *Value Sharing Agree*

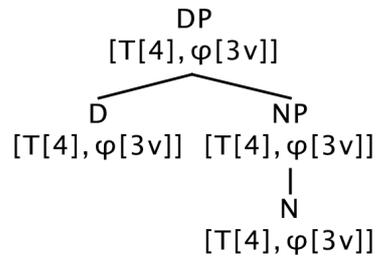
The features F_α of a probe α and the feature F_β of a goal β share the same value if they match and Agree (Agreement can be vacuous). All active/unvalued features F that share a value with β in the c-command domain of α share the value of F_α and F_β .

The modified definition prevents interpretable and uninterpretable features from substituting each other, limiting the sharing relation to feature values; also, it prevents goals from giving unvalued features values inside a probing phrase.

Concerning the structure of DPs, all its elements agree with each other and share an uninterpretable unvalued T-feature, that will receive a value in the derivation by v or T , and φ -features, which are not necessarily interpretable for all elements and can either be morphologically expressed or not, depending on the language:

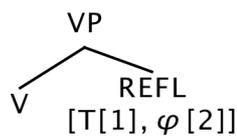
¹⁹ Schladt 1999, 105-106.

(15)²⁰

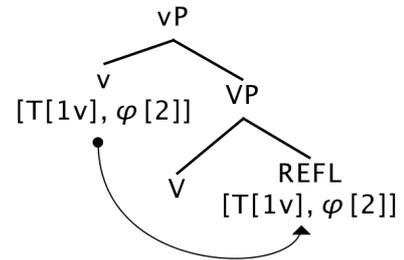


For a reflexive DP, whose ϕ -features are not valued at the moment it is merged to the VP, the derivation proceeds as follows²¹:

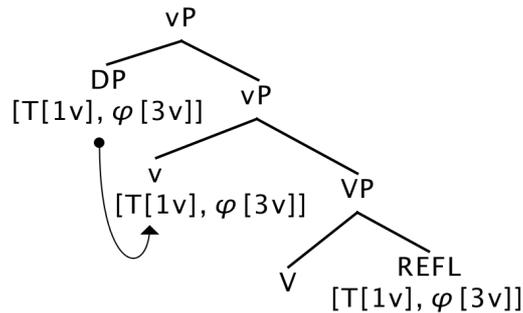
(16) a.



b.



c.



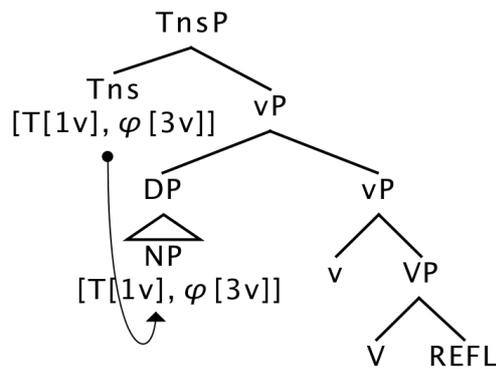
At this point, it is important to note that after the DP in Spec-vP has probed its c-command domain, its internal elements (N and D in (22)) do not receive a value for their T-feature, because they do not c-command v and so the value sharing version of Agreement in (21) cannot be established. Only the T-feature of DP becomes valued.

20 Notation for value sharing:

- the numbers are arbitrary, what matters is whether they are the same on different instances of the feature or not. Even in that case they are not, nothing prevents them to be identical to each other.
- the letter 'v' indicates that the feature is valued.

21 Arrows indicate probe-goal relationships and consequent valuation of features.

d.



When Tns is merged, it probes its domain for an active goal. REFL in the VP is not accessible anymore due to the *Phase Impenetrability Condition*²². The only active goal is the DP (or NP) in subject position, with whom the probe establishes an Agreement relation, valuating its own ϕ -features and the T-feature inside the DP. It may seem odd that the same DP takes part in two different 'feature value chains', but assuming that the values of the two Ts on DP are the same, there seem to be no clash between them, even more so considering that both instances are uninterpretable and will be deleted at Spell-Out.

The present analysis also explains why reflexives cannot be subjects without resorting to independently motivated binding domains. In fact, if a subject reflexive DP was merged to Spec-vP, it would immediately probe down. There are two options: if the object DP was a full DP with valued ϕ -features, then it would be inactive due to the fact that all its features would already have been valued after the Agreement relation with v; if, on the other hand, the object DP was reflexive as well, it would remain active, but the two DPs would not be able to receive a value for their ϕ -features before Spell-Out. The derivation would crash in both cases.

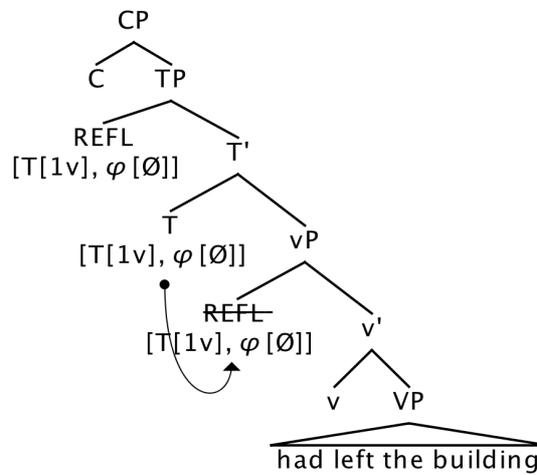
Different types of clauses are tested by Heinat:

In finite embedded clauses the conclusion that reflexives cannot be subjects holds. In fact, the only DP which could establish a probe-goal relation with the embedded subject reflexive DP in a sentence like (17) is prevented to do so by the *PIC*: the when the matrix subject is merged, the embedded subject is not available as a goal anymore, because as V has been merged to embedded C, the phase is close. And since the phase has been

²² See Note 41 of Chapter 1.

close without the reflexive DP receiving a value for its ϕ -features, the derivation crashes.

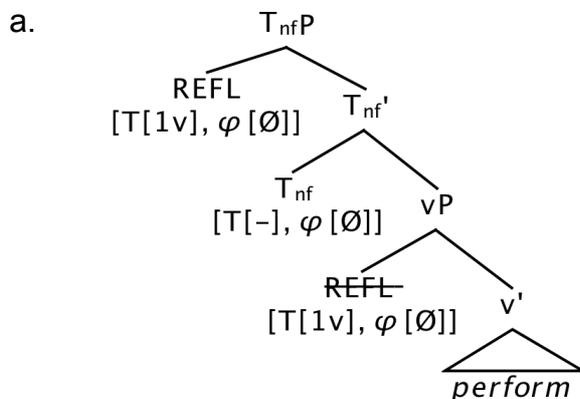
(17) *Elvis claimed [_{CP}that himself had left the building.]

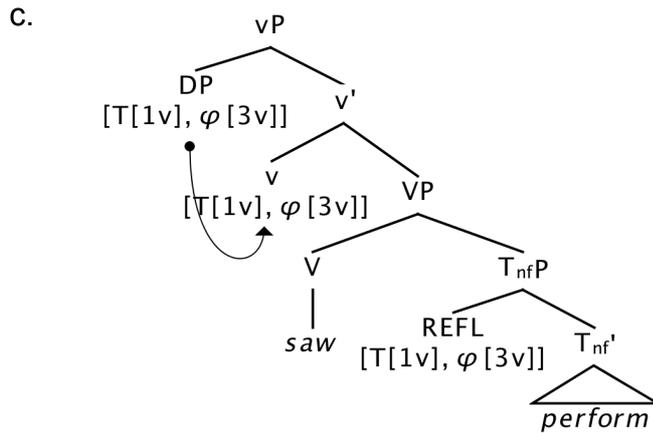
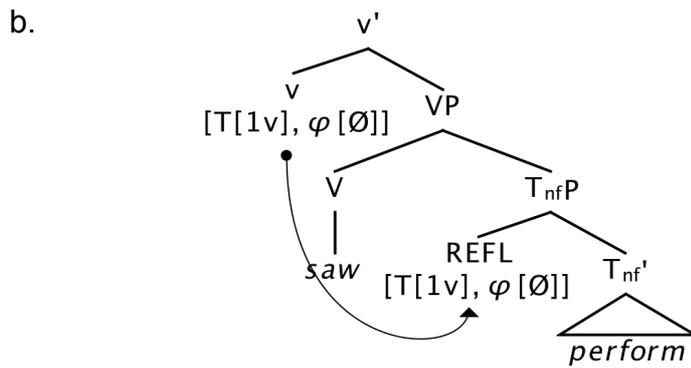


In different types of non-finite embedded clauses:

- In ECM structures, T_{nf} of the embedded clause is defective, and therefore it lacks the T feature necessary for nominative case assignment, although it has the EPP-feature; it is also different from a finite T for the fact that it is not selected by C (which is absent in the embedded clause), but by matrix v. In ECM structures we find subject reflexives:

(18) The king saw himself perform (on video).





Since there is no C head between matrix *v* and the reflexive in embedded subject position, nothing prevents the first to probe down and find the second, establishing an agreement relation in order to share feature values (18b). Then, the φ -features of both matrix *v* and REFL receive a value when the matrix subject DP is merged to the structure with its valued set of φ -features (18c); in fact, the matrix subject DP probes down on *v*, but the value of the $[\varphi[1]]$ on *v* is shared with the ones on REFL.

This situation is similar to the one involving non-finite passive clauses with reflexive subjects, only, this time also *v* is defective and lacks the case assigning T feature (and it does not constitute a phase head):

- (19) a. $[_{VP} \ v \ [_{VP} \ V \ REFL \]]$
 $[\varphi[1]] \quad [T[\emptyset], \varphi[1]]$
- b. $[_{T_{nf}P} \ REFL \ T_{nf} \ [_{VP} \ v \ [_{VP} \ V \ REFL]]]$
 $[T[\emptyset], \varphi[1]] \quad [\varphi[1]] \quad [\varphi[1]]$

- c. $[_{VP} DP \quad v \quad V [_{TnP} REFL \quad T_{nf} \quad [_{VP} \dots$
 $[T[9v]] \quad [T[9v]] \quad [T[9v]] \quad [\varphi[5v]]$
 $[\varphi[5v]] \quad [\varphi[5v]] \quad [\varphi[5v]]$

In (19), the φ -features of REFL (and embedded v , and T_{nf}) do not receive a value until the matrix subject DP is merged, but as nor embedded v , nor embedded C are able to close the respective phases, this does not constitute a problem.

Thus, in English (and Swedish²³) it is possible to explain the following data without making use of the traditional notion of binding domains:

- (20) a. Bart saw Lisa_i hurt herself_i.
 b. *Lisa_i saw Bart hurt herself_i.
 c. *Bart saw herself_i hurt herself_i.
 d. Lisa_i saw herself_i hurt Bart.
 e. Lisa_i saw herself_i hurt herself_i.

In fact, according to the rules developed in GB binding theory, the contrast between (20a) and (20b) shows that the matrix subject cannot be included in the domain. Moreover, since a reflexive cannot bind another reflexive, there is no explanation for the acceptability of (20e).

In the present analysis, instead, these fact are well accounted for and descend from the value sharing definition of agreement: a probe can value multiple goals, on the condition that there are no intervening factors²⁴. One problem with this approach is that in ECM structure like (18) a non-defective v is present, which is considered a strong phase head. The phase should close before REFL has the possibility to get its φ -features valued and the derivation should crash. Yet, it is not so. Heinat supposes that either the PIC does not hold for v , or that «*v does not spell-out items that share feature values with items*

23 The Swedish data show that the phenomena being described are not altered by the use of simplex reflexive instead of a complex one. See Heinat 2006, 123.

24 Intervening factors are other heads and phases.

outside v»²⁵. In section 2.3. I review another solution that reworks the definition of phase itself.

- In raising constructions, nothing prevents the antecedent from moving after the agreement relation with the reflexive has been established. The only restriction on distance between the antecedent and the reflexive are restrictions on movement.

(21) Lisa_i seem to be likely to [_{VP} t_i see herself].²⁶

In (21), when the DP '*Lisa*' is merged into Spec-vP, it checks the ϕ -features of v and the reflexive, then it is moved upwards in the configuration.

- Double Object Constructions (DOC) raise some problems: the intervening effect of DPs shown in ECM constructions does not seem to arise in this case:

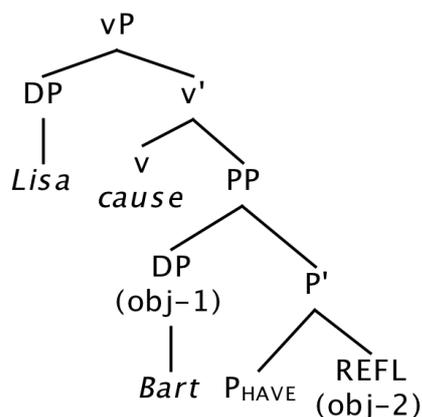
- (22) a. Lisa showed Bart himself.
b. *Lisa showed himself Bart.
c. Lisa showed Bart herself.
d. *Lisa showed Bart her.
e. Lisa showed herself herself.
f. *Lisa showed herself her.

According to Harley 2002 (among others), DOC have the following structure:

25 Heintz 2006, 125.

26 In this example indices indicate movement, not coreference.

(23)



What needs clarification is what happens to obj-1, whether it be an direct or an indirect object. It is reasonable to suppose that if obj-2 is a full DP, it will have its T feature valued in its base position and will therefore be inactive as a goal (22b-d-f). If obj-2 is a reflexive (22a-e), on the other hand, it can be bound by obj-1, and if obj-1 is inactive, the subject has the possibility to bind obj-2 (22c). It remains to determine what makes obj-1 active or inactive. Heinat proposes that obj-1 has the possibility to be merged without T feature or with a valued T feature, but this introduces into the analysis an optionality which is difficult to motivate.

- DP-internal reflexives fall slightly outside the definition we gave in (9), but they are nonetheless central in binding theory and need to be accounted for. The first problem connected to DP-internal reflexives is that they do not show complementarity with personal pronouns:

(24) a. Maggie_i saw Lisa's_j picture of her_{i/*j}.

b. Maggie_i saw Lisa's_j picture of herself_{ij}.

How can the reflexive in (24b) be coreferential with the subject when another DP can intervene between them? The second problem is connected to movement: under *wh*-movement it seems that the reflexive can form a relation with a new antecedent:

(25) Which picture of herself_{ij} did Lisa_i say [_{CP} ~~which picture of herself_{ij}~~ that Maggie_j liked ~~which picture of herself_{ij}~~?

For some reason the subject of the most embedded clauses does not value the ϕ -features of the reflexive in (25). Heinat explains both phenomena in terms of logophoric use of reflexives²⁷: the reflexive forms in (24b) and (25) enter the derivation with valued ϕ -features; thus, they need not be c-commanded by an antecedent²⁸ and behave like pronominals.

2.1.5. Beyond GB binding principles

The present analysis predicts that once Agree takes place between the reflexive and the antecedent, the reflexive should be able to move to a position where it is not c-commanded by the antecedent; put in GB theory terms, Principle A needs to hold only once in a derivation²⁹. Topicalized and scrambled examples bear out the prediction³⁰.

GB theory Principle C³¹, i.e. R-expressions are free, does not explain examples like (33):

- (26) a. A: Everyone I know likes Mary.
B: Yes, I know.
Even Mary likes Mary
- b. Even Mary likes her.

In fact, if we take the structures of pronominal DPs and reflexive DPs to be the ones presented in (12), «*since any root can be merged with an N^0 head, there is no difference between R-expressions and personal pronouns*»³². In (26) it is possible to use a personal pronoun or an R-expression which is coreferential with 'Mary', but neither of them has a bound variable interpretation: they cannot establish an agreement relation with other pronouns or R-expressions. Principle C, therefore, is deprived of its syntactic authority and

27 In case of non-anaphoric use of a reflexive, the reference of the pronoun is governed by discourse factors to a bigger extent than syntactic factors (Büring 2005)

28 While the logophoric use of the English complex reflexive is permitted, simplex reflexives like Swedish *sej* and Dutch *zich*, instead, cannot behave like pronominals (Zwart 2002).

29 Epstein et al. 1998.

30 Scrambling is defined in Bailyn 2012 as «*a range of surface word order altering operations*», while Topicalization is a phenomenon related to the left periphery of the sentence (See Rizzi 1997).

31 See section 1.1.4.

32 Heinat 2006, 133.

the treatment of personal pronouns and R-expressions in this respect is unified.

Heinat provides further evidence in support of these conclusion. To begin with, under the copy theory of movement introduced by Chomsky 1995, every moved object leaves a trace which is identical in all respects (referential property included) to the original object. Maintaining Principle C, every sentence with a moved DP would incur violations of the Principle, but this does not happen. Then, if Principle C involves long distance relations that stretch over phases, there should be a way to calculate violations across indefinitely many phases. It seems easier to give up Principle C as a syntactic requirement. Also, there are cases where reconstruction do not cause Principle C violations. The choice between introducing new distinctions in order to amend these case and giving up syntactic Principle C is easily resolved by the second option. Finally, from an empirically point of view, R-expressions seem to be constrained by pragmatic/discourse factors, rather than syntactic factors:

- (27) [A linguist working on binding theory]_i was so devoided of any moral sense that he_i forced [a physicist working on particles]_k to hire [the linguist's]_i girlfriend in his_k lab.

In (27) *'the linguist'* has a disambiguating discourse value which seems to trespass the requirements imposed by Principle C, yet the result does not show heavy ungrammaticality. In addition, we find languages where names and DPs can be c-commanded by coreferential names or DPs from a non-co-argumental position³³.

We have sufficient evidence to confine the action of Principle C to pragmatics and to treat R-expressions and personal pronouns as identical syntactic objects, whose structure is given in (12a).

2.1.6. Reciprocals, possessive reflexives, bound variables

In GB reciprocals are thought to share the same licensing conditions as reflexives. In this case, their structure would correspond to the one of reflexives in (12b), but with a different root $\sqrt{\text{RECIPROCAL}}$. However, they seem to have a different distribution from

³³ The languages presented by Heinat 2006 are Thai (from Larsson 2006), Kadiwéu (from Sandalo and Gordon 1999), Nuuh-chah-nuhlt (from Davis and Wojdak 2007), San Lucas Quiavini Zapotec (from Lee 2003).

reflexives:

- (28) a. John and Mary didn't know what each other had done.
b. John and Bill were deciding what each other should do.

Since between the reciprocals in the embedded clauses in (28) and the matrix subject there are two strong phase heads, it is impossible for an agreement relation to be established between them. In addition, the connection between the two elements of the reciprocal seems to be looser than that of reflexives:

- (29) a. The girls trusted each other.
b. The girls each trusted the others.
c. Each girl trusted the others.

Instead, *'each'* can be analyzed as a quantifier binding *'the other'*³⁴, and the conditions on quantifier binding are different from those on antecedent binding of reflexives³⁵.

Possessive reflexives are not to be considered antecedent-bound through a probe goal relation as well. In fact, the relation between the personal possessive and its antecedent does not require c-command and can be long-distance, and thus resembles what happens in control phenomena.

Finally, not only reflexive DPs, but also personal pronouns and R-expressions allow a bound variable interpretation. Also in this case, however, the c-command requirement is not necessary in order for the binding to take place. Therefore, the binding in (30a) is not syntactic and has a different, perhaps discourse-related nature.

- (30) a. Every tennis player's_i coach supports her_i, as long as she's winning.

34 The Swedish reciprocal, however, cannot form a relation with the matrix subject from an embedded clause.

Together with the fact that it is possible to find the Swedish reciprocal in subject position of non-finite clauses, this indicates that it is rather to be analyzed as a reciprocal.

35 Quantifier, among other things, involves number specification and are considered as a particular type of determiners.

b. Someone_i persuaded every kid_j that they_{i+j} should tell each other a story.

The nature of the probe-goal relation, and more precisely the fact that it can take place only once, suggest that the split binding³⁶ occurring with the bound pronoun in (30b) has a different nature.

³⁶ Split binding takes place when a plural reflexive has more than one referent in a given syntactic context.

2.2. Rooryck and Vanden Wyngaerd 2011

2.2.1. Simplex and complex anaphors

Rooryck and Vanden Wyngaerd develop an approach which is similar to the one outlined in the preceding chapter under many aspects.

To begin with, for them lexical items are inserted post-syntactically. As a consequence, the variation in the morphological expression of binding relationships is determined by what is available in the lexical inventory of a language.

Following the Strong Minimalist Thesis, they claim that both binding principles and reflexivity are just epiphenomena, in that they violate the *Inclusiveness Condition*. The fundamental fact, again, is the feature sharing agreement relation established after probing between anaphors and their antecedents. Differently from Heinat, however, they claim that it is the anaphor that must c-command the antecedent at a certain stage of the derivation.

This is possible assuming that, according to Sigurðsson 2006's *Low Nominative Hypothesis*⁵⁰, the nominative argument is merged with the verb before the Complement of VP. Then the reflexive pronoun, a DP with unvalued ϕ -features, establishes an agreement relationship with its antecedent from a c-commanding position. Non-reflexive personal pronouns, instead, do not need to value their ϕ -features and therefore no agreement relation is established between them and other DPs.

Furthermore, they assume that the distinction between ϕ -features which enter the derivation already valued (31a), and ϕ -features which are valued after a probe-goal relation (31c) survives until lexical insertion takes place⁵¹. In fact, the distinction is relevant to both phonological and semantic interface: PF needs it in order to choose between bound and unbound lexical items, and LF needs it to discriminate between a coreferential and a disjoint interpretation⁵². ϕ -features on nominals are interpretable, therefore there is no reason to believe they undergo deletion at Spell-Out⁵³.

50 In Sigurðsson 2006 Nominative case is the first case assigned and it comes for free, or, in other words, without licensing by syntactic heads (like T).

51 In Rooryck and Vanden Wyngaerd's notation: P = Person, N = number, G = genre, _ = unvalued, * = shared.

52 Although this idea seems to be implied in Heinat 2006's analysis, it is never made explicit.

53 The recoverability of other features, such as uninterpretable T, instead, follows from the fact that feature valuation and Transfer to Spell-Out happen simultaneously when a phase closes.

- (31) a. {P:3, N:sg, G:m} valued (goal)
 b. {P:_, N:_, G:_} unvalued (probe)
 c. {P:3*, N:sg*, G:m*} valued (probe)

(32) shows the partial derivation of a transitive sentence with a reflexive and a personal pronoun respectively:

- (32) a. [_{XP} [_{DP2} {P:_, N:_, G:_}] [_{YP} [_{DP1} {P:3, N:sg, G:m}]]]

Agree →

[_{XP} [_{DP2} {P:3*, N:sg*, G:m*}] [_{YP} [_{DP1} {P:3, N:sg, G:m}]]]

- b. [_{XP} [_{DP1} {P:3, N:sg, G:m}] [_{YP} [_{DP2} {P:3, N:sg, G:m}]]]

Certain types of simplex anaphors like Dutch *zich* enter the derivation in a position higher than their antecedents, as in (32a), while complex anaphors such as English *himself* need to move from their base position in order to c-command their antecedents..

The fact that Transfer takes place at phase closure explains the unpredictable referential behavior of DPs in different phases: since the DPs are sent to the interfaces separately, no binding relation can exist between them.

- (33) John_i thinks [that he_{ij} is smart.]

In the German example (34), however, after the phase head *v* is merged, its complement VP is not available anymore for further computation. How is the disjoint reference reading between the two DPs derived? As can be seen from (34b)⁵⁴, the ϕ -features of the object are visible in the higher phase, because they appear on *v*. As a consequence, DP1 and DP2 are in the same syntactic domain at the edge of *vP*.

- (34) a. [_{VP} [_{DP1} {P:3, N:sg, G:m}] *v* [_{VP} V [_{DP2} {P:3, N:sg, G:m}]]]
- Johannes_i liebt ihn_{*ij}

⁵⁴ Double strikethrough signals a phase sent off to the interface.

- b. $[_{VP} [_{DP1} \{P:3, N:sg, G:m\}] [_v \{P:3^*, N:sg^*, G:m^*\}] [_{VP} V [_{DP2} \{P:3, N:sg, G:m\}]]]$
 Johannes_i liebt ihn^{*_{i/j}}

Lexical insertion in the DM framework associates lexical items to the respective feature bundles according to the *Subset Principle*⁵⁵. Every language has its own lexical inventory to express binding relationships which, if the very theoretical base adopted here holds, are common to all of them. Therefore, whenever dedicated anaphors are missing from the paradigm, pronouns fill in for them. This leads to what the authors call Absence of Principle B Effect (APBE), i.e. a pronoun can be bound in its domain:

- (35) a. He_i likes [_{DP} his_{i/j} dog].
 b. Jean_i prend soin de lui_{i/j}.
 Jean takes care of himself/him.

In (35a), the non-reflexive pronominal form *his* can be bound by the subject of the sentence because English lacks a dedicated reflexive possessive pronoun; in (35b), the French personal pronoun *lui*, which normally cannot be used as a reflexive, is 'forced' to do so because the nonclitic reflexive pronoun *soi* (oneself) can only be bound by impersonal or quantified antecedents.

Obviously, APBE does not occur in languages with a rich dedicated lexical inventory, but is nonetheless essential to acknowledge that such a relaxation of Principle B undermines the validity and the descriptive power of the principle; even more so considering that the cause of APBE, i.e. the lack of specific lexical items, is, at least potentially, common to all languages.

2.2.2. Φ -features and the semantic interface

At this point, comparing Rooryck and Vanden Wyngaerd's analysis with Heintz's, two important considerations need to be pointed out.

The first is the treatment of the possessive reflexives. For Heintz they are not to be

⁵⁵ See note 47 of Chapter 1.

considered antecedent-bound through a probe-goal relationship, the reason being that they do not require c-command and can be long distance⁵⁶; of course, these considerations hold if we assume that the antecedent is the probe and the pronoun is the goal. In Rooryck and Vanden Wyngaerd's analysis the probe-goal relationship is reversed, so that the possessive reflexive pronoun⁵⁷ needs to c-command the antecedent in order to establish Agreement. They present evidence from Swedish, a language with dedicated possessive reflexive pronouns:

- (36) a. Hon_i ser sin_{i/*j} man.
 She_i sees her_i husband.
- b. Hon_i ser hennes_{*i/j} man.
 She_i sees her_j husband.

While in (36b) the possessive pronoun does not need to check its own ϕ -features with the subject, in (36a) the situation is more complicated. The possessive reflexive and all its DP needs to adjoin to the specifier position of vP, but it seems that the pronoun cannot c-command the antecedent even after this movement:

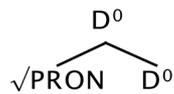
- (37) a. [_{VP} [_{DP1} {P:3, N:sg, G:m}] [_{VP} V [_{DP2} [_{D2} {P:_, N:_, G:_}] NP]]]
 hon ser sin man
- b. [_{VP} [_{DP2} [_{D2} {P:_, N:_, G:_}] NP] [_{VP} [_{DP1} {P:3, N:sg, G:m}]
 sin man hon
 [_{VP} V [_{DP2} [_{D2} {P:_, N:_, G:_}] NP]]]]]
 ser

Rooryck and Vanden Wyngaerd resolve the impasse with the idea from Kayne 1994 that specifiers are adjoined like adjuncts, and therefore the specifier X of a specifier Y of a head Z does c-command Z and the complement of Z. For Kayne this implicates that quantifiers can bind pronouns outside their DP. Rooryck and Vanden Wyngaerd extend this idea to possessive reflexives, so that in (37b) the possessive reflexive *sin* probes

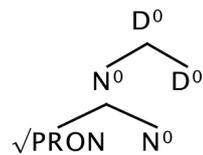
⁵⁶ See section 2.1.6.

⁵⁷ In those languages having dedicated ones.

(38) a.



b.



Also, as Rooryck and Vanden Wyngaerd show over their analysis, there is no reason preventing an insertion rule assigning the same lexical item to pronouns and reflexives whenever dedicated reflexive pronoun forms are missing from the lexicon:

(39) {P:3(*), N:sg(*), G:m(*)} ↔ signal / context

The two different structures in (38) can be maintained because they give birth to the different featural compositions (valued-unvalued ϕ -features of DPs), which are what ultimately determine which lexical item is inserted, according to the lexical inventory of a specific language.

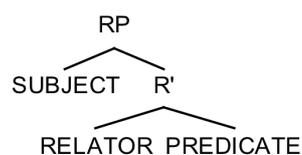
2.2.3. The derivation of simplex and complex anaphors

For Rooryck and Vanden Wyngaerd simplex and complex reflexives involve different syntactic structures. As English lacks simplex reflexives, they show these different structures using the Dutch forms *zich* and *zichzelf*.

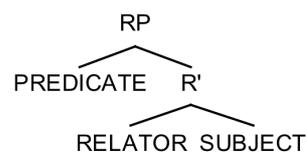
The idea is that the complex reflexive *zichzelf* is merged as the internal argument of a transitive verb, whereas the simplex reflexive *zich* is merged as the possessum in a possessive constituent that also hosts its antecedent, i.e. the possessor⁶⁰. The initial

⁶⁰ This complex constituent is named RP (Relator Phrase), and according to the analysis of Den Dikken 2006, it is highly pervasive in the grammar. In fact it represents the very basic structure of predication. Its head R is not a lexical category and the order of subject and predicate within it is non-directional:

(i) a.



b.



syntactic stage for the two cases is shown in (40b) and (41b) respectively:

(40) a. Milo heeft zichzelf bezeerd.

Milo has REFL.self hurt

Milo hurt himself.

b. [_{DP} Milo] [bezeren [_{DP} zichzelf]]

Milo hurt REFL.self

(41) a. Milo heeft zich bezeerd.

Milo has REFL hurt

Milo hurt himself.

b. ____ [bezeren [_{RP} [_{DP1} zich_{possessum}] [R [_{DP2} Milo_{possessor}]]]]

hurt REFL Milo

As the anaphor enters the derivation with unvalued ϕ -features, it must establish an agreement relation with another DP in order to get them a value. As we explained earlier, fo Rooryck and Vanden Wyngaerd it is the anaphor that probes down to the full DP, so it must reach a higher position in the structure than the antecedent. For simplex reflexives this is achieved without further movements:

(42) a. [_{VP} V [_{RP} [_{DP1} {P:_, N:_, G:_}_{possessum}] [_{DP2} {P:3, N:sg, G:m}_{possessor}]]]]

bezeer zich Milo

Agree →

b. [_{VP} V [_{RP} [_{DP1} {P:3*, N:sg*, G:m*}_{possessum}] [_{DP2} {P:3, N:sg, G:m}_{possessor}]]]]

bezeer zich Milo

Complex reflexives, on the other hand, need to raise to a vP adjoined position in a manner that equates them with floating quantifiers⁶¹:

It is important to note that although R is not a lexical category, several lexical category (T, v, etc.) can act like R.
61 See Koopman and Sportiche 1991.

- b. POSSESSOR T HAVE_{BE+D/P} [_{D/PP} POSSESSOR-D/P POSSESSUM]
 {NOM} {ACC}

In (45a) the possessum raises to subject position and receives nominative case and the D/P head of the possessive small clause assigns dative case to its specifier. In (45b) the D/P head incorporates into *be*, which as a result lexicalizes as *have* and acquires accusative case-assignment potential; the possessor receives nominative case from T and the possessum accusative case from *have*.

Following Den Dikken's analysis, Rooryck and Vanden Wyngaerd adopt an RP structure in which the order of possessor and possessum is reversed:

- (46) a. _____ T BE [_{RP} POSSESSUM R [_{PP} P_{DATIVE}
 POSSESSOR]]
- b. POSSESSOR T HAVE_{BE+R+P} [_{RP} POSSESSUM R+P [_{PP} P_{DATIVE}⁻
 POSSESSOR]]

In this way, assuming that it is the anaphor that probes down its antecedent, the agreement between them can be established within the possessive phrase as described in (47), both for reflexive pronouns and reflexive possessives⁶⁵:

- (47) a. Jan bezeert zich/zijn voet.
 Jan hurts REFL/his foot
 Jan hurts himself/his foot.
- b. ____ T [_{VP} bezeer [_{RP} [_{DP} zich/zijn voet] R [_{PP} P [DP Jan]]]]
- c. Jan bezeert+R+P+T [_{VP} bezeer+R+P [_{RP} [_{DP} zich/zijn voet] R+P [_{PP} P
 [_{DP} Jan]]]]

- the complex anaphor *zichzelf* (and also English *himself*) behaves rather differently,

⁶⁵ Assuming, following Kayne 1994, that specifiers are adjoined like adjuncts and therefore the specifier X of a specifier Y of a head Z c-commands Z and the complement of Z.

in a way that patterns after the syntactic behaviour of floating quantifiers⁶⁶ and *self-intensifiers*^{67,68}. At first, *self-reflexives* are merged in complement position (48a); then they raise to a vP-adjoined position (48b) from which they can c-command the antecedent and thus establish Agree (48c):

- (48) a. $[_{VP} [_{DP1} \{P:3, N:sg, G:m\}] [_{VP} V [_{DP2} \{P:_, N:_, G:_}\]]]$
 Pete invited himself
- b. $[_{VP} [_{DP2} \{P:_, N:_, G:_}\]] [_{VP} [_{DP1} \{P:3, N:sg, G:m\}] [_{VP} V [_{DP2} \{P:_, N:_, G:_}\]]]]]$
 himself Pete invited

Agree →

- c. $[_{VP} [_{DP2} \{P:3^*, N:sg^*, G:m^*\}] [_{VP} [_{DP1} \{P:3, N:sg, G:m\}] [_{VP} V$
 himself Pete invited
 $[_{DP2} \{P:3^*, N:sg^*, G:m^*\}]]]]]$

However, some *self-forms* seem not to obey to the previously mentioned constraints on binding:

- (49) a. Max boasted that the Queen invited Mary and himself for a drink.
- b. Clara found time to check that apart from herself there was a man from the BBC.

Both (49a) and (49b) show a *self-form* whose antecedent is non-local and non-c-commanding. These forms are in fact logophors and enter the derivation with valued φ -features, so that they do not need to probe for an antecedent in order to value them. Furthermore, they are licensed to substitute for pronouns only under specific discourse

66 See Koopman and Sportiche 1991.

67 In English complex reflexives and intensifiers share their morphological form as well.

68 *Self-reflexives* are also submitted to the same constraints on floating quantifiers and *self-intensifiers*, namely:

- obligatoriness of the antecedent
- c-command of the antecedent by the floating quantifier
- locality of the antecedent
- uniqueness of the antecedent

conditions⁶⁹. Thus, homophony between anaphor and logophor ought to be treated as a case of morphological syncretism.

69 See Rooryck and Vanden Wyngaerd 2011, 146.

2.3. Antonenko 2012

The proposal developed in Antonenko 2012 originates from premises which are partly antithetical to those motivating our previous analysis. In fact, contrary to the approaches developed in the other works presented in this work, Antonenko considers reflexivity to be a primitive of grammar and formalizes this intuition⁷⁰ by means of a dedicated feature ρ for reflexivity. This feature is valued on reflexives and unvalued on a higher phasal head, which needs to check its unvalued occurrence through Agree, thus introducing a λ -operator, which binds the reflexive variable establishing coreference between anaphor and antecedent.

Moreover, Antonenko reduces the notion of binding domain to that of phase.

2.3.1. Phases reworked

The fundamental claim in Antonenko's new version of phasal domain is that they become closed «*just in case certain features within the domain are either valued or shared with an element outside of this domain*»⁷¹. As in Chomsky 2008, the general idea about phases is that they permit to minimize the computational load: the initial Lexical Array⁷² is not sent to the interface all at once, rather, it is divided in 'lighter' subarrays processed in different cycles. The accessibility of material within phases is subject to the *PIC*⁷³.

Once again, the foundations on which the new analysis is built are constituted by the rejection of the *Valuation/Interpretability Biconditional* correlation introduced by Pesetsky and Torrego and their feature sharing version of Agreement, repeated here:

- (50) Agree (Feature sharing version)
- (i) An unvalued feature F (a *probe*) on a head H at syntactic location α (F_α) scans its c-command domain for another instance of F (a *goal*) at location β (F_β) with which to agree.
 - (ii) Replace F_α with F_β , so that the same feature is present in both locations.

70 First presented in Reinhart and Reuland 1993.

71 Antonenko 2012, 46.

72 See section 1.2.1.1.

73 See Note 41 of Chapter 1.

The phasal status of a domain originates from the properties of the elements contained within the domain. In other words, phases are not defined by stipulation, but they can be derived. More specifically:

(51) Phasal domain:

A domain D is phasal if for every D-relevant feature F within D,

- a. F is valued, or
- b. a head H merged with D has an instance of a feature F that entered a sharing probe-goal relationship with an instance of a feature F within D.

(52) D-relevant features:

Assume that D is a domain, such as VP, vP, TP, or CP. Then, D-relevant features are the following⁷⁴:

- a. If D=VP, VP-relevant features are: ϕ - and Case-features of the nominals within V-complement and VP specifier.
- b. If D=vP, vP-relevant features are: ϕ -features of the Spec,vP, i.e. ϕ -features of the subject, interpretation related features on v, i.e. Definiteness feature.
- c. If D=TP, TP-relevant features are: T-features of T and ϕ - and T-features of the element in Spec,TP.
- d. If D=CP, CP-relevant features are: Clause-type feature on C and wh- and Q-features of C and Spec, CP.

Under this new definition of phasal domains (which ultimately correspond to binding domains), we can describe several syntactic constructions by ascertaining the 'phasalness' of their domains, thus determining whether they are open for probing or not. Assuming those constructions do not contain anaphors, the following characterizations hold:

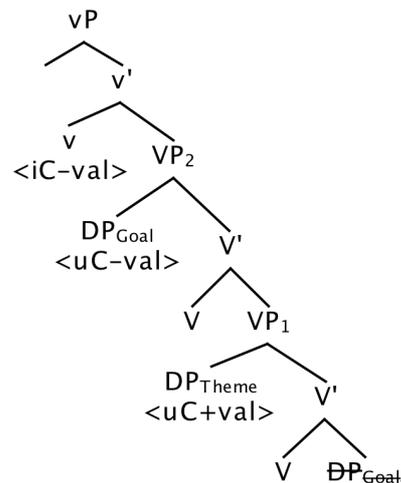
- In transitive embedded sentences and in the respective matrix all domains (CP, TP, vP and VP) are phasal.
- In embedded control clauses, whose infinitival verb come with an unvalued T-

74 Omitting defective heads.

feature, embedded vP and VP are phasal, as well as matrix CP and TP, whereas embedded CP and TP and matrix vP and VP are open until the matrix T/C is merged.

- In ECM clauses, which lack an embedded CP layer, all domains are phasal.
- Ditransitive vPs, according to Antonenko, conform to the description given by in Larson 1988, shown in (53):

(53)



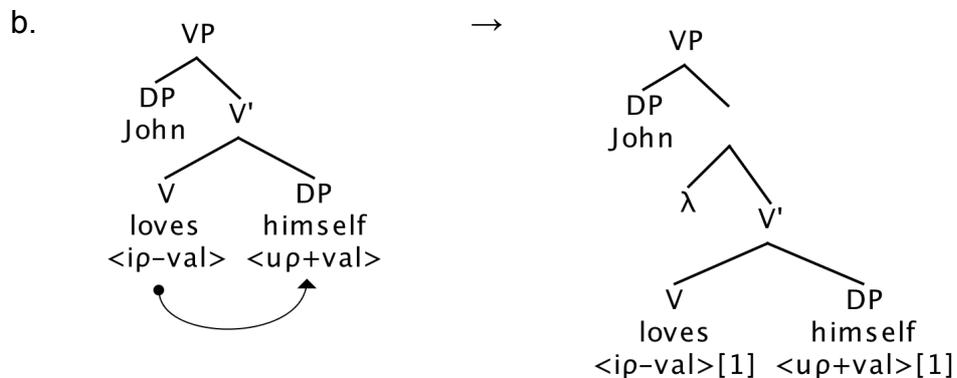
VP₁ cannot be considered phasal under the definition in (51) because Case feature of the goal DP is not valued, nor shared with a higher head when the V head of VP₂ is merged. Conversely, VP₂ is phasal because v shares with the goal DP the Case feature it gains from the probing relationship with the theme DP.

2.3.2. The ρ -feature and reflexive pronouns

According to Antonenko 2012, locality of binding is thus reduced to locality of agreement under the phasal theory we previously outlined: binding relations can only be evaluated at the moment when domains become phasal. Binding relations are obtained when two instances of the formal reflexive feature ρ , which is interpretable and unvalued on v/V or T and uninterpretable and valued on reflexives, establish an agreement relation. The result of the agreement relationship is that the interpretable instance of the ρ -feature introduces a λ -operator immediately above the position where the ρ -feature is present. The

λ -operator at LF marks the predicate with reflexive meaning.

(54) a. John loves himself.



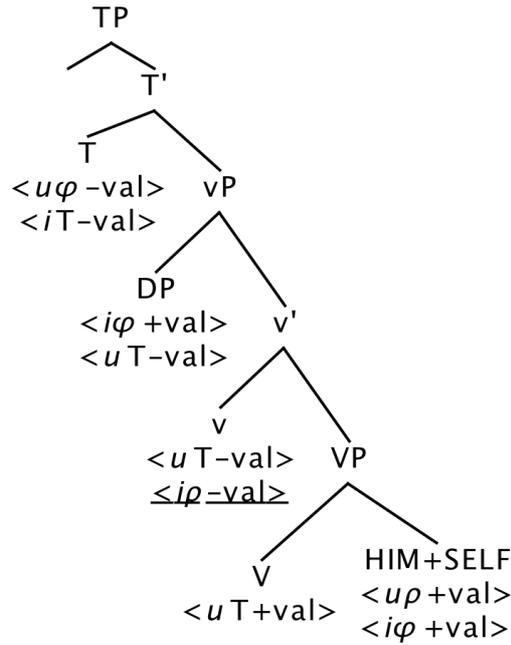
In addition, for Antonenko the subject-orientation of monomorphemic anaphors can be explained by the different featural composition between simplex and complex anaphors: complex anaphors come from the lexicon with valued φ -features, while simplex anaphors need to value them in the course of the derivation, therefore they prevent the insertion of the λ -operator immediately above VP (VP cannot close because its D-relevant features are still not valued). Consequently, the interpretable instance of the ρ -feature can be placed on v or V in the case of complex reflexives, but only on T for monomorphemic reflexives.

2.3.2.1. Complex anaphors

Complex anaphors, like English *himself*, have valued φ -features $\langle i\varphi +val \rangle$ and therefore their ρ -feature can be interpreted below v . The derivation of a transitive sentence proceeds in the following way (the two possible instances of the unvalued ρ -feature are underlined):

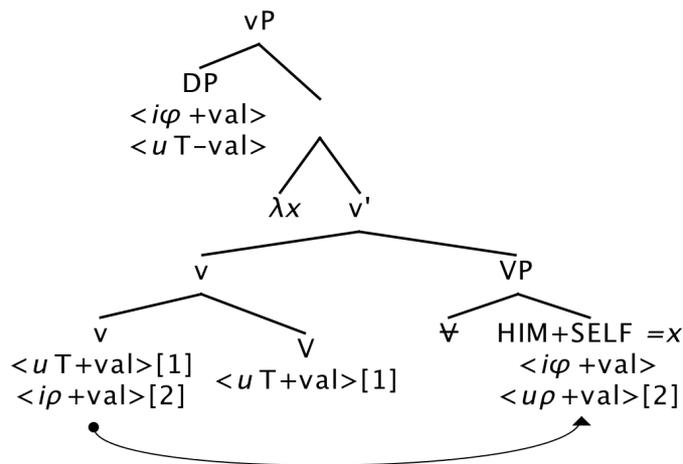
(55) a. John loves himself.

b.



Antonenko assumes the unvalued ρ -feature is located on v , but he does not discard the possibility of its presence on V , instead. As soon as v has probed V for its T-feature, it continues its probing and reaches the complex reflexive, which has the valued instance of the ρ -feature, and establishes an agreement relationship with it. At this point, as all D-relevant feature in VP are either valued or shared, VP acquires phasal status and can be sent to the interface, resulting, when the subject DP is merged, in the λ -operator in (56):

(56)



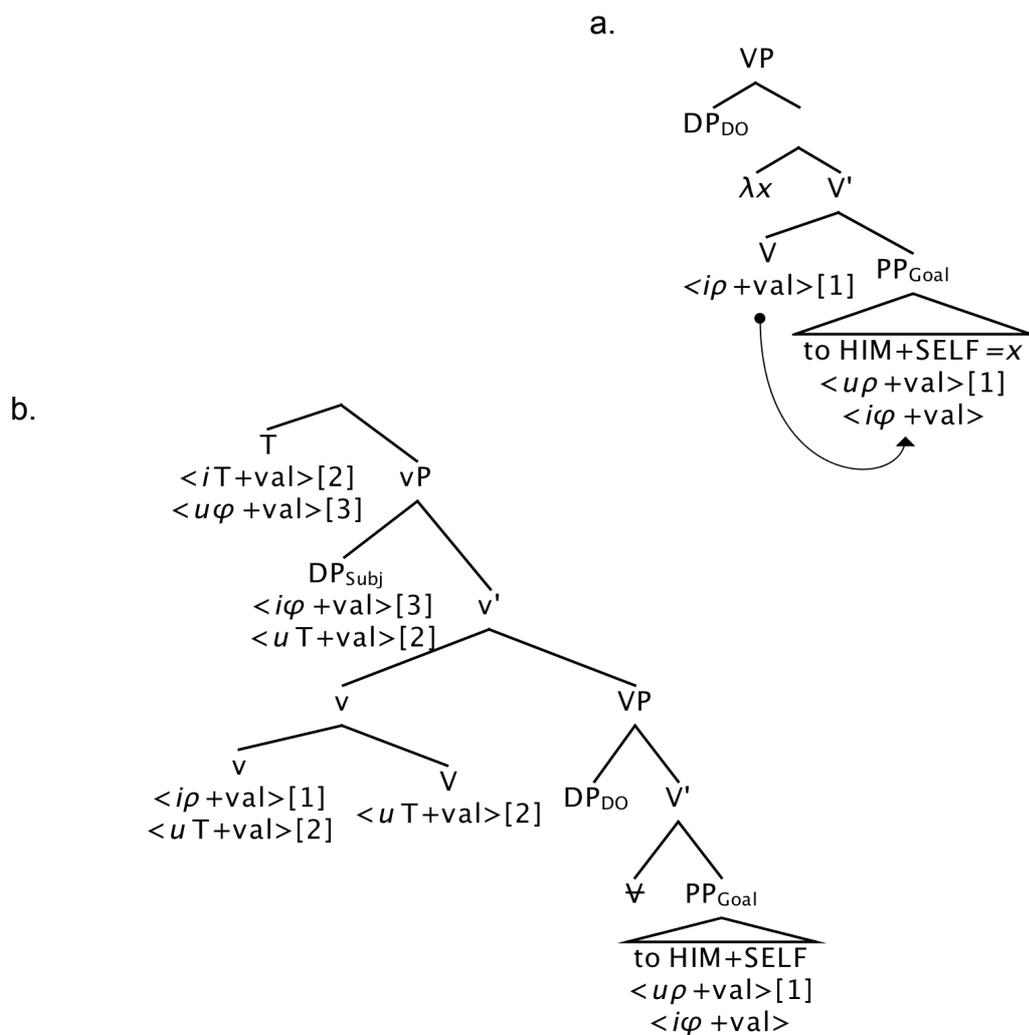
Then, T with unvalued T-feature and ϕ -features is merged, and after it agrees with the subject DP, its probing reaches the [v+V] complex, where the valued T-feature it needs is located.

In ditransitive verbs with a PP argument and in double object constructions, however, it does matter whether the ρ -feature is located on V or v: if it is placed on V, the binder of the reflexive will be the direct object, and if it is placed on v it will be the subject. This accounts for the ambiguity of sentences like (57):

(57) John_i showed Bill_j [to himself_{ij}].

The two possibilities are shown in (58):

(58)

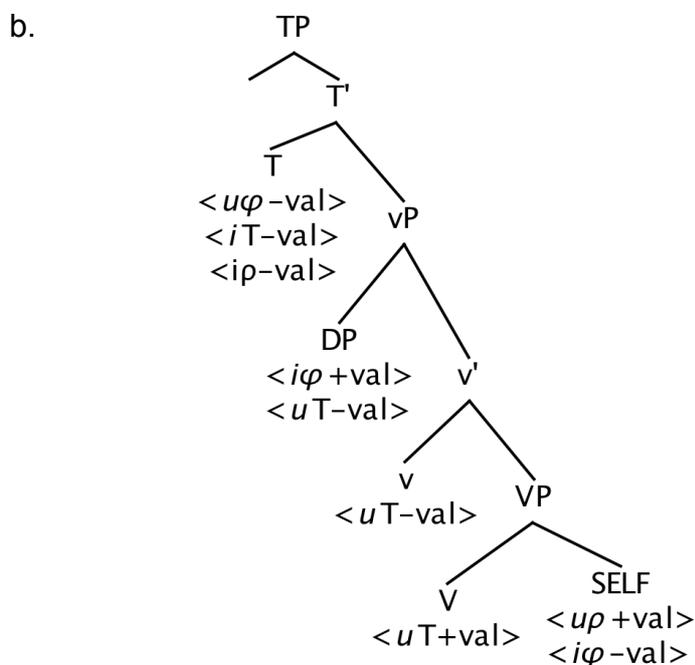


(58b) clearly shows the impossibility for the direct object DP to act as a binder for the DP in the goal PP: as the unvalued ρ -feature is located on v, the λ -conversion takes place at the vP level, preventing the direct object DP, which is inside a domain that has already become phasal, to act as the antecedent of the reflexive. This approach also accounts for the fact that in English ditransitive constructions, if the direct object is an anaphor, only the subject can anteced it. In fact, in that case the only possible position for the unvalued ρ -feature is on v.

2.3.2.2. Simplex anaphors

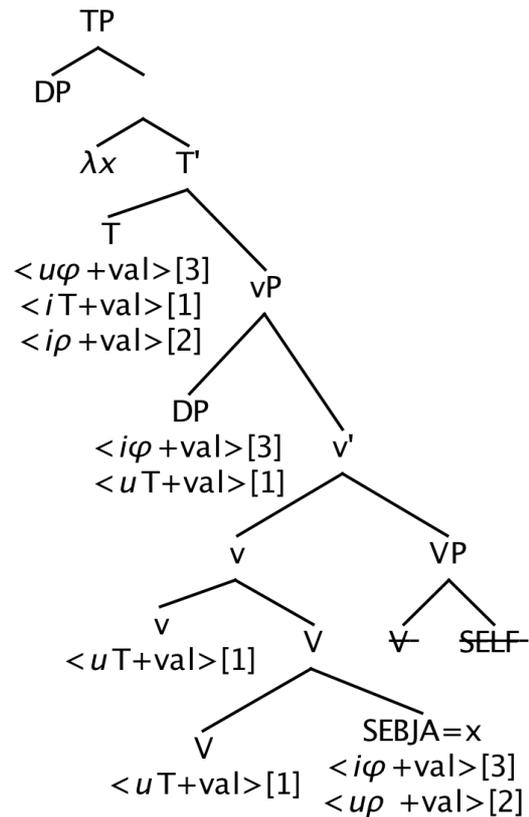
Monomorphemic anaphors, like Russian *sebjja*, lack valued ϕ -features and need to get them valued in the course of the derivation. Assuming that for simplex anaphors the interpretable ρ -feature is located on T, the derivation of a transitive sentence proceeds as follows:

- (59) a. Ivan_i ljubit sebjja_i.
Ivan-NOM loves self-ACC
 Ivan_i loves himself_i.



In (59b) the lack of valued φ -features on the anaphor forbid the VP domain to become phasal until T probes down and reaches the anaphor, checking its φ -features and sharing the values of the φ -features of the subject, previously probed by T in Spec-vP position. As a result, there cannot be ambiguity about the reference of the anaphor: the antecedent of a monomorphemic anaphor is always the subject⁷⁵.

(59) c.



2.3.2.3. Long-distance binding

There are different locality constraints on binding across the languages of the world⁷⁶. Russian is a relatively strict language concerning locality of binding and it forbids binding out of subjunctive clauses and indicative clauses (60a-b). Instead, it allows binding relationships out of infinitival clauses, small clauses and DPs/PPs (60c-d-e):

⁷⁵ This is valid and demonstrated by Antonenko also for ditransitive constructions. See Antonenko 2012, 3.2.2.2.

⁷⁶ Antonenko reports: some languages allow binding out of infinitives (Russian and other Slavic languages), some others out of subjunctives (Icelandic, French, Italian), others even out of indicative clauses (Malay, Chinese, Japanese, Korean).

- (60) a. *Marija_i skazala, čto groza ne volnuet sebja.
Mary-NOM said-FEM that storm-NOM not worry self-ACC
 Mary_i said that the storm doesn't worry *herself_i/her_{i/k}.
- b. *Marija_i xotela, čtoby roditeli ljubili sebja.
Mary-NOM wanted-FEM that parents-NOM loved self-ACC
 Mary_i wanted that the parents loved *herself_i/her_{i/k}.
- c. Marija_i pozvolila Ivanu_j obnimat' sebja_{i/*j}.
Mary-NOM let-FEM Ivan-DAT to-hug self-ACC
 Mary_i let Ivan_j hug her_i/*himself_j.
- d. Marija_i sčitaet Ivana_j pomešannym na sebe_{i/*j}.
Mary-NOM considers Ivan-ACC obsessed-INSTR on self-LOC
 Mary_i considers Ivan_j obsessed about himself_j/her_i.
- e. Marija_i čitaet Petru_j rasskazy o sebe_{i/*j}.
Mary-NOM reads to-Peter-DAT stories-ACC about self-LOC
 Mary_i reads to Peter_j stories about herself_i/*him_j.

Aided by the approach we just outlined, we should be able to give an account of this constraints. Recall that a λ -operator is inserted immediately above the interpretable instance of the ρ -feature, but it cannot be sent off to the interface until its domain becomes phasal. Long-distance binding phenomena, therefore, involve domains which have the possibility to delay their own closure without causing the derivation to crash. In Russian, this is mainly the case of infinitival TPs. Anaphors within indicative embedded clauses and subjunctive embedded clauses, instead, cannot be anteceded by DPs from the respective matrix clauses.

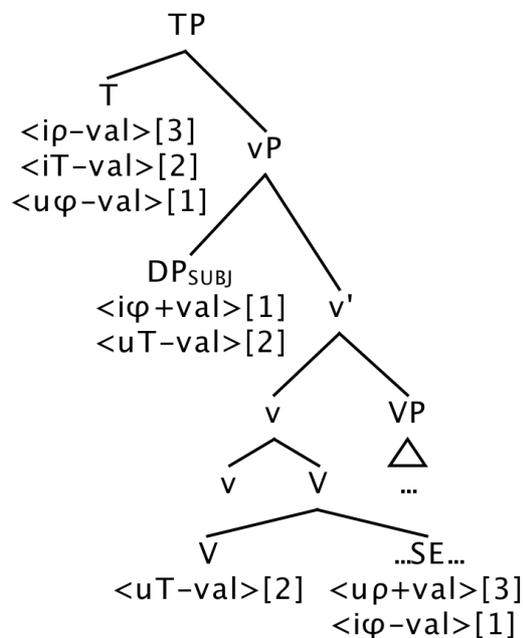
In the case of indicative embedded clauses like (60a) this is due to the fact that the embedded TP domain, having all its D-relevant features valued, becomes phasal independently from the potential DPs with unvalued φ -features (such as monomorphemic Russian anaphors) in lower domains. So, if those DPs do not check their φ -features before

the closure of TP, the derivation crashes.

For subjunctive embedded clauses the situation is slightly different, but the fact that their elements cannot be bound from outside holds. Both the subjunctive complementizer *čtoby* and the embedded subjunctive verb in (60b) (whose T-feature are initially unvalued) are selected from the matrix verb. All the domains of the embedded subjunctive, lacking a valued instance of the T-feature, remain open until an element with such an instance probes down and establishes agreement with the unvalued instance, which is shared between embedded CP, TP, vP and VP. This happens exactly when the matrix [v+V] complex probes down its domain for valued instances of ϕ -features, which are available on the embedded subject. Since no DP can be merged between the embedded CP and the matrix v and all embedded domains become unavailable for further probing after [v+V] checks the embedded unvalued T-feature, it is impossible for a DP within the matrix clause to c-command an anaphor within an embedded subjunctive clause. Thus, the instance of the ρ -feature must be located on the embedded T (61):

- (61) a. Ivan_i xočet čtoby Boris_j narisoval sebja^{*i/j}.
Ivan wants that_{SUBJ} Boris draw self
 Ivan_i wants Boris_j to draw himself^{*i/j}.

b.



Infinitive sentences include raising constructions and control constructions, which ought to be treated separately:

- The valuation of the T feature shared across all the embedded clause in raising constructions is possible only after the embedded subject is raised to matrix Spec-vP. Then, matrix T agrees with the raised subject, but this does not result in the valuation of its T-feature, so T continues the probing until it reaches the matrix [v+V] complex, which finally values the unvalued T-feature of all the construction.
- Control clauses have no overt embedded subject: this position is occupied by PRO⁷⁷. In addition, a CP layer is present. In this case, when embedded T probes the DP in Spec-vP, it fails to obtain a value for its ϕ -features, because PRO does not possess a valued instance of them. Assuming infinitival C is merged with an uninterpretable unvalued T-feature, it is only the probing of the matrix [v+V] complex that provides a valued instance of the T-feature to the embedded clause and ϕ -features for PRO.

Differently from English, reflexives in Russian object control clauses like (62) can be bound either by the matrix object or by the matrix subject:

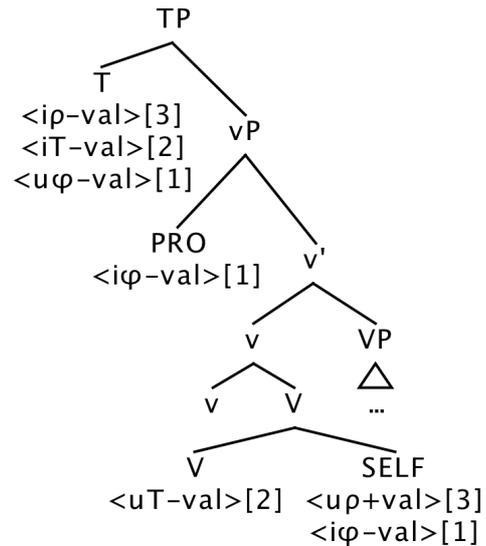
- (62) Ivan_i poprosil Boris_j [PRO_j narisovat' sebja_{i/j}]
Ivan asked Boris draw_{INF} self
 Ivan_i told Boris_j to draw himself_{i*/j}.

This is a result of the different featural composition between the anaphors available in the two languages: Russian *sebja* enters the derivation with unvalued ϕ -features, English *himself* with valued ones.

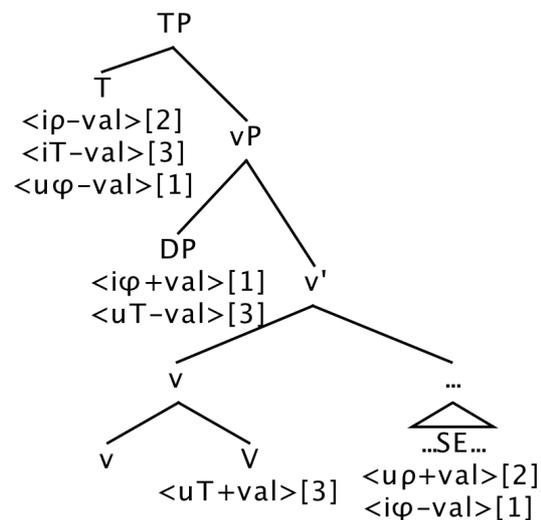
As a result, the vP in the English version of (62) can close before the vP in the Russian counterpart: in the first case binding takes place at the level of the embedded VP or vP by the embedded subject/object, in the second at the level of the embedded (63a) or the matrix (63b) TP by the embedded or the matrix subject:

⁷⁷ See section 3.1.3.3. of Chapter 3. In the current framework PRO lacks a T-feature, it needs to be coreferent with a higher c-commanding element and it enters the derivation with unvalued ϕ -features.

(63) a.



b.



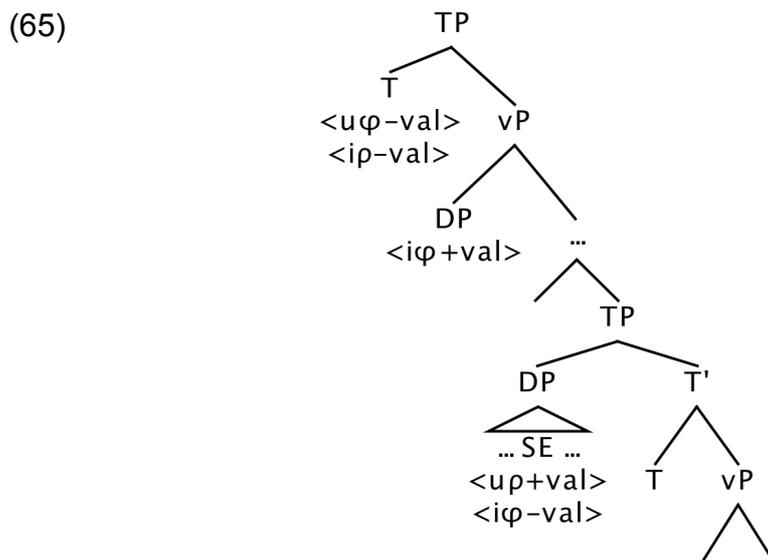
The different featural composition of English and Russian anaphors is also responsible for their different behaviour concerning anaphors within subjects: while the matrix subject of the English example (64a) is able to bind the anaphor within the embedded subject, this is forbidden in the Russian example in (64b):

(64) a. Children_i know that [pictures of themselves_i] are on sale.

- b. *Deti znajut čto [svoi fotografii] budut viset' na stene.
Children know that [SELF'S pictures] will hang on wall
 Children know that pictures of themselves will hang on the wall.

In more detail, the English *himself* enter the derivation with a valued ρ -feature and valued ϕ -features. If we assume that the unvalued counterpart of the ρ -feature is arbitrarily placed higher than the vP level (from which it could not probe the higher anaphor), say on the matrix V, the probing can take place because the subject DP containing the anaphor is at the edge of the TP phase, and therefore it is available before the embedded CP phase is closed. Λ -conversion applies when the next matrix nominal is merged and results in binding.

In the same case the ϕ -features of Russian reflexives, instead, do not obtain a value because no head in the matrix vP probes the embedded subject; only matrix T could, but it is prevented to do so by the unavailability of the material in the embedded TP, which is already a phase:



The Russian reciprocal *drug druga*, however, shows the same behaviour of the English *himself*:

- (64) *Deti_i dumajut čto fotografii drug druga_i visjat na stene.*
children-NOM think that pictures-NOM each other-GEN hang on wall-LOC
The children think that the pictures of each other are hanging on the wall.

Coherently with the model he proposes, Antonenko explains this fact assuming that *drug druga* comes from the lexicon with valued φ -features, so that its binding can take place at the same moment as in the English case.

The merits of this approach include the extension of the idea that reflexivity is marked on predicates⁷⁸ to non-argumental anaphors and a simple explanation of inherently reflexive predicates (which come from the lexicon with a value ρ -feature), but they come at a great theoretical cost. Postulating a dedicated feature for reflexivity, in fact, would inevitably make it a syntactic primitive, which is, in our view, an undesirable conclusion⁷⁹.

78 Formalized in Reinhart and Reuland 1993.

79 See section 3.3. Although the notion of reflexivity in Antonenko 2012 is not restricted to co-arguments of a predicate, it is nonetheless a syntactic counterpart for reflexivity, in that the very existence of the ρ -feature is motivated by the need for formalizing coreference (a semantic fact) without deriving it from independently motivated syntactic phenomena.

Analysis

The analysis developed in this section aims to provide a detailed and principled account of the behaviour of anaphorical elements in Russian.

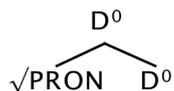
I conform to all the studies reviewed in the present work and adopt Pesetsky and Torrego sharing version of agreement, reported in (1):

(1) *Value Sharing Agree*

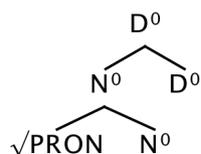
The features F_α of a probe α and the feature F_β of a goal β share the same value if they match and Agree (Agreement can be vacuous). All active/unvalued features F that share a value with β in the c-command domain of α share the value of F_α and F_β .

I will tentatively assume that the internal structure of reflexive pronouns and non-reflexive pronouns conform to the description given in Heinat 2006, repeated here:

(2) a. *reflexive pronoun*



b. *non-reflexive pronoun*



Such structures ultimately determine that all anaphors enter the derivation with unvalued φ -features and need to get them valued in order for the derivation to converge. Differently from Heinat, however, I will support the thesis of Rooryck and Vanden Wyngaerd regarding the probe-goal relationship between anaphors and antecedents: it is

the anaphor that probes down on the antecedent¹. Furthermore, I tentatively agree with Rooryck and Vanden Wyngaerd upon the difference between simplex and complex reflexives: simplex reflexives are merged in a possessive RP in which they c-command their antecedents (3a), complex reflexives are merged as complements of transitive verbs and need to move in order to receive a value for their φ -features in a way that resembles that of floating quantifiers (3b)².

- (3) a. ____ [_{VP} V [_{RP} [_{DP} simplex reflexive] [R [_{DP} antecedent]]]]
- b. [_{VP} [_{DP} antecedent] v [_{VP} V [_{DP} complex reflexive]]]

In the remaining part of this chapter these premises will be tested on the Russian reflexive pronoun *sebjja*, on Russian inherently reflexive verbs (taking the suffix *-sja*), on the Russian possessive reflexive pronoun *svoj*, and on the Russian reciprocal pronoun *drug druga*. In the end, I will draw some conclusions on reflexivity.

3.1. Simplex and complex anaphors in Russian

Having adopted Rooryck and Vanden Wyngaerd's theoretical tools, I will address the following issue: are simplex and complex reflexives both present in the Russian lexical inventory? In order to investigate this matter, I will examine the syntactic and semantic contexts in which, according to the two authors, anaphors can occur. More specifically, I tentatively assume that verbs with the suffix *-sja*³ are lexical items corresponding to an unaccusative configuration of the same kind of (3a). Conversely, the reflexive pronoun *sebjja* can be considered a complex anaphor (3b).

1 This also allow us to avoid probing phrases. In fact, although the evidence in their favour provided in Heinat 2006 are convincing, their use would inevitably make syntactic derivations more complex. If we can build a coherent and economical explanation of the phenomena we are examining without making use of probing phrases, then it is preferable not to adopt them.

2 In both these two structures and all the other considered in this chapter, according to the *Low Nominative Hypothesis*, the nominative DP is the first DP merged with the verb and obtain its case 'for free'.

3 Excluding those corresponding to a transitive configuration. Russian verbs showing the suffix *-sja* and having a transitive meaning usually do not have an untransitive counterpart, and therefore their testing raises problems.

3.1.1. The distribution of the suffix *-sja* and *sebjja*

The Russian reflexive pronoun *sebjja* never appears in the nominative case. It exhibits no person-number-genre specifications, but it takes case inflections:

Nominative	Accusative	Dative	Genitive	Instrumental	Locative
-	sebjja	sebe	sebjja	soboj	o sebe

The verbal suffix *-sja*, instead, characterizes verbs which are loosely referred to as reflexive verbs and changes into *-s'* whenever the last sound of the verb it is attached to is a vowel.

Following Rooryck and Vanden Wyngaerd's analysis, I selected three sets of verbs which correspond to their verbs of bodily harm (*to hurt*), of physical disruption (*to break*), and psych verbs (*to amuse*). As it is customary for Russian language, both the imperfective and the perfective forms those verbs are listed:

- verbs of bodily harm: *raniť* (impf.) - *raniť* (pf.) *to wound*, *žeč'* (impf.) – *cžeč* (pf.) *to burn*, *uvečit'* (impf.) *to maim*, *udarjat'* (impf.) - *udarit'* (pf.) *to hit*, *kalečit'* (impf.) - *iskalečit'* (pf.) *to cripple*, *urodovat'* (impf.) - *izurodovat'* (pf.) *to deform*
- verbs of physical disruption: *lomat'* (impf.) - *slomat'* (pf.) *to break*, *razbivat'* (impf.) - *razbit'* (pf.) *to smash*, *rvat'* (impf.) - *porvat'* (pf.) *to tear*, *rvat'* (impf.) - *razrvat'* (pf.) *to rip up*, *vyvixivat'* (impf.) - *vyvixnut'* (pf.) *to dislocate*, *svertyvat'* (impf.) - *svernut'* (pf.) *to wring*, *carapat'* (impf.) - *ocarapat'* (pf.) *to scratch*
- psych verbs: *razdražat'* (impf.) - *razdražit'* (pf.) *to irritate*, *uspokaivat'* (impf.) - *uspokoit'* (pf.) *to calm*, *unimat'* (impf.) - *unjat'* (pf.) *to calm down*, *udivljat'* (impf.) - *udivit'* (pf.) *to surprise*, *zlit'* (impf.) - *razozlit'* (pf.) *to anger*, *poražat'* (impf.) - *porazit'* (pf.) *to astonish*, *radovat'* (impf.) - *obradovat'* (pf.) *to make happy*, *veselit'* (impf.) - *pazveselit'* (pf.) *to amuse*, *razvlekat'* (impf.) - *razvleč'* (pf.) *to entertain*.
- other verbs: *zaščičat'* (impf.) - *zaščitiť* (pf.) *to defend*, *smotret'* (impf.) - *posmotret'* (pf.) *to look*, *trogat'* (impf.) - *tronut'* (pf.) *to touch*,

Aided by the search engine of the *Nacionalny Korpus Russkogo Jazyka*⁴, I tested the occurrence of each verb with the reflexive pronoun *sebjja*, with the suffix *-sja*, and with a direct object body part DP (plus dative indirect object *sebe*).

	Verb	sebjja	-sja	DO body part DP + sebe
Verbs of bodily harm	ranit'	√	√	√
	cžeč'	√	√	√
	ocarapat'	√	√	√
	izuvečit'	√	√	√
	udarit'	√	√	X
	iskalečit'	√	√	√
	izurodovat'	√	√	X
Verbs of physical disruption	slomat'	X	√	√
	razbit'	X	√	√
	porvat'	X	√	√
	pazorvat'	X	√	√
	vyvixnut'	X	√	√
	svernut'	X	√	√
Psych verbs	razdražit'	√	√	X
	uspokoit'	√	√	X
	unjat'	√	√	X
	udivit'	√	√	X
	razozlit'	√	√	X
	porazit'	X	√	X
	obradovat'	√	√	X
	razveselit'	√	√	X
	razvleč'	√	√	X
Other verbs	zaščitiť	√	√	√
	posmotret'	X	√	√
	tronut'	√	√	X

⁴ <http://www.ruscorpora.ru/search-main.html>. The *Nacionalny Korpus Russkogo Jazyka* (N.K.R.JA) is the biggest corpus for Russian language and it contains more than 600.000.000 words.

	Verb	sebja	-sja	DO body part DP + sebe
	vymyt'	√	√	√

Similarly to the data collected by Rooryck and Vanden Wyngaerd, these verbs show an interesting distribution: the verbs of bodily harm occur in all contexts, the verbs of physical disruption cannot occur with the reflexive pronoun *sebja*, but can occur with the suffix *-sja* and a direct object body part DP, whereas the psych verbs are found with the *-sja* suffix and the reflexive pronoun *sebja*, but not with body part DPs.

A closer look at the phonetical, syntactic and semantic contexts in which these verbs appear reveals a neat separation between verbs taking *-sja* and verbs taking the reflexive pronoun *sebja* and a body part DP as a direct object.

From a phonological point of view, one immediately notice that the suffix *-sja*, differently from *sebja*, cannot be stressed, and therefore it cannot be contrastively focused:

- (4) a. Milicioner ranil SEBJA, a ne vora.
policeman-NOM wounded sebja-ACC, and not thief-ACC.
The policeman wounded himself, not the thief.
- b. *Milicioner ranilsja, a ne vora.
policeman-NOM wounded-REFL, and not thief-ACC.
- c. *Anna slomala SEBJA, a ne podругu.
Anna-NOM broke self-ACC, and not friend-ACC
- d. *Anna slomalas', a ne podругu.
Anna-NOM broke-REFL, and not friend-ACC
- e. Ivan udivil SEBJA, a ne Petra.
Ivan-NOM surprised self-ACC, and not Peter-ACC
Ivan surprised himself, not Peter.
- f. *Ivan udivilsja, a ne Petra.
Ivan-NOM surprised-REFL, and not Peter-ACC

Another evident difference between the sentences in which the above-mentioned verbs are used with *sebjā*, and those in which they are used with *-sja*, is that the first can undergo passivization, whereas the second cannot. (5b) and (6b) are the passive versions of the transitive sentences (5a) and (6a); (6d) and (6d) and (5e) and (6e) parallel (5a) and (6a) and (5b) and (6a), while (5c) and (6c) do not seem to have a biargumental structure, and therefore their passivization is impossible. The verbs in (5c) and (6c) are clearly unaccusative.

- (5) a. Ivan ranil Petra.
Ivan-NOM wounded Peter-ACC
 Ivan wounded Peter.
- b. Petr byl ranen Ivanom.
Peter-NOM was wounded Ivan-INST
 Peter was wounded by Ivan.
- c. Petr ranilsja.
Peter-NOM wounded-REFL
 Peter wounded himself.
- d. Ivan ranil sebjā.
Ivan-NOM wounded self-ACC
 Ivan wounded himself.
- e. Ivan byl ranen samim soboj.
Ivan-NOM was wounded FOC self-INST
 Ivan was wounded by himself.
- (6) a. Oleg udivil professora.
Oleg-NOM surprised professor-ACC
 Oleg surprised the professor.

- b. Professor byl udivlen Olegom.
professor-NOM was surprised Oleg-INSTR
 The professor was surprised by Oleg.
- c. Professor udivilsja.
professor-NOM surprised-REFL
- d. Oleg udivil sebja.
Oleg-NOM surprised self-ACC
 Oleg surprised himself.
- e. Oleg byl udivlen soboj.
Oleg-NOM was surprised self-INSTR
 Oleg was surprised by himself

(5) and (6) display a bodily harm verb and a psych verb respectively, and this contrast is easily detectable because of the availability for both of them of both *sebja* and *-sja*. For verbs of physical disruption, instead, *sebja* is not available, but the contrast is visible with body part DPs as direct objects:

- (7) a. Ivan slomal ruku Petru.
Ivan-NOM broke arm-ACC Peter-DAT
 Ivan broke Peter's arm.
- b. Ruka Petra byla slomana Ivanom.
arm-NOM Peter-GEN was broken Ivan-INSTR
 Peter's arm was broken by Ivan.
- c. Ruka Petra slomalas'.
arm-NOM Peter-GEN broke-REFL
 Peter's arm broke.

- d. Petr slomal sebe ruku.
Peter-NOM broke self-DAT arm-ACC
 Peter broke his arm.
- e. Ruka Petra byla slomana samim im.
arm-NOM Peter-GEN was broken FOC he-INSTR
 Peter's arm was broken by him himself.

Interestingly, verbs of physical disruption cannot refer to individuals, as they lack a psychological interpretation⁵. Therefore, their theme θ -role can only be filled by an inanimante DP (as in (7c)). For the same reason, (7a) and (7d) need an additional dative argument in order to identify the possessor of the body part DP, which in their passive version is represented by a genitive DP.

Further evidence supporting the distinction between the transitive syntax of the summentioned verbs with *sebja* and the unaccusative syntax of the same verbs (whenever possible) with the suffix *-sja* comes from VP ellipsis. In such contexts, sentences with verbs+*sebja* can have a strict and a sloppy identity reading, whereas sentences displaying verbs with *-sja* can only be given a sloppy interpretation:

- (8) a. Ira ranila sebja, a Aleksandr net.
Ira-NOM wounded self-ACC, and Aleksandr-NOM no
 Ira wounded herself, and Aleksandr didn't.
- b. Ira ranilas', a Aleksandr net.
Ira-NOM wounded-REFL, and Aleksandr-NOM no
 Ira wounded herself, and Aleksandr didn't.

While for (8a) are available both the sloppy and the strict interpretations, namely *Ira wounded herself, and Aleksandr didn't wound himself* and *Ira wounded herself, and Aleksandr didn't wound her*, (8b) can only have the sloppy one, that is, *Ira wounded herself, and Aleksandr didn't wound himself*. Assuming Saab's *Condition on formal identity*

⁵ This is also noted in Rooryck and Wanden Wyngaerd 2011. The transitive configuration verb+*sebja*, on the other hand, allows a psychological reading for verbs of physical disruption.

- (16) a. Ivan_i xočet, čtoby Maša_j myla sebja^{*_{i/j}}.
Ivan-NOM wants that Maša-NOM wash-SUBJ self-ACC
 ?Ivan wants that Maša wash *him_i/herself_j.
- b. Ivan_i xočet, čtoby Maša_j mylas'^{*_{i/j}}.
Ivan-NOM wants, that Maša-NOM wash-SUBJ-REFL
 Ivan_i wants that Maša_j wash *himi/herself_j.

In simple sentences, instead, the reflexive pronoun *sebja* is always subject-oriented even when it is contained in the indirect object of the verb. The suffix *-sja*, naturally, cannot stand for an indirect object and it is always subject-oriented⁹.

- (17) a. Milicioner_i zaščitil sebja_{i/*j} ot arestovannogo_j.
policeman-NOM defended-PF self-ACC from suspect-GEN
 The policeman_i defended himself_{i/*j} from the suspect_j.
- b. Milicioner_i zaščitil arestovannogo_j ot sebja_{i/*j}.
policeman-NOM defended-PF suspect-ACC from self-GEN
 The policeman_i defended the suspect_j from him_i/*himself_j.
- c. Milicioner_i zaščitilsja_{i/*j} ot arestovannyx_j.
policeman-NOM defended-PF-REFL from suspects-GEN
 The policeman_i defended himself_{i/*j} from the suspects_j.
- d. ?Devuška_i zaščitila sebja_i ot sebja.
girl-NOM defended-PF self-ACC from self-GEN
 The girl_i defended herself_i from herself_i.

In the next section I will analyse whether the syntactic configurations in (9) and (13) can account for these restrictions on the range of binding phenomena.

⁹ Also, the fact that those verbs with *-sja* lacking a transitive counterpart can take only indirect objects, strengthen our thesis on the syntactic origin of this suffix.

sentence) is moved to the edge of vP (18c). When the phasal head v is merged, V adjoins to it, as it later does to T¹¹. DP1, as the derivation proceeds, will occupy the Spec-T position in order to satisfy the EPP.

For (17a) the situation is rather different: the reflexive pronoun is merged as before as the complement of V, but then it needs to move upwards in order to c-command its antecedent DP:

- (19) a. $[_{VP} [_{DP1} \{P:3, N:sg, G:m\}] [_{VP} v+V [_{VP} \forall [_{DP2} \{P:_, N:_, G:_}\}}]]]$
 milicioner zaščitit' sebja
- b. $[_{VP} [_{DP2} \{P:_, N:_, G:_}\}] [_{VP} [_{DP1} \{P:3, N:sg, G:m\}] [_{VP} v+V [_{VP} \forall DP2]]]]]$
 sebja milicioner zaščitit'
- Agree* →
- c. $[_{VP} [_{DP2} \{P:3^*, N:sg^*, G:m^*\}] [_{VP} [_{DP1} \{P:3, N:sg, G:m\}] [_{VP} v+V [_{VP}]]]]]]$
 sebja milicioner zaščitit'
- d. $[_{VP} [_{PP} P [_{DP3} \{P:3, N:sg, G:m\}]]] [_{VP} [_{DP2} \{P:3^*, N:sg^*, G:m^*\}]]]$
 ot arestovannogo sebja
 $[_{VP} [_{DP1} \{P:3, N:sg, G:m\}] [_{VP} v+V [_{VP}]]]]]]$
 milicioner zaščitit'
- e. $[_{CP} C [_{TP} [_{DP1} \{P:3, N:sg, G:m\}] [_{TP} T+v+V [_{VP} [_{DP2} \{P:3^*, N:sg^*, G:m^*\}]]]]]]]$
 milicioner zaščitil sebja
 $[_{VP} [_{PP} P [_{DP3} \{P:3, N:sg, G:m\}]]] [_{VP}]]]]]]$
 ot arestovannyx

In (19b) DP2 raises to Spec-v in order to value its own \emptyset -features through an

In the examples I do not adopt such a structure whenever the verb considered is not obligatorily ditransitive. If the indirect object is optional, I consider its merging equivalent to PP-adjunction.

11 In Russian, all perfective verbs raise to T (more precisely, to its AspP), while the infinitive form of imperfective verbs raises only to v.

pping the direct object DP¹³.

The present analysis can also account for the odd, though grammatical example (17d)¹⁴: both the DPs containing the anaphors move to the specifier position of v:

(21) a. $[_{VP} [_{DP1} \{P:3, N:sg, G:f\}] [_{VP} v+V [_{VP} \forall [_{DP2} \{P:_, N:_, G:_}\}]]]$
 devuška zaščitit' sebja

b. $[_{VP} [_{DP2} \{P:_, N:_, G:_}\}] [_{VP} [_{DP1} \{P:3, N:sg, G:f\}] [_{VP} v+V [_{VP} \forall DP2]]]]]$
 sebja devuška zaščitit'

Agree →

c. $[_{VP} [_{DP2} \{P:3^*, N:sg^*, G:f^*\}] [_{VP} [_{DP1} \{P:3, N:sg, G:f\}] [_{VP} v+V [_{VP} \forall DP2]]]]]$
 sebja devuška zaščitit'

Agree →

d. $[_{VP} [_{PP} P [_{DP3} \{P:_, N:_, G:_}\}]] [_{VP} [_{DP2} \{P:3^*, N:sg^*, G:f^*\}]$
 ot sebja sebja
 $[_{VP} [_{DP1} \{P:3, N:sg, G:f\}] [_{VP} v+V [_{VP-}]]]]]$
 devuška zaščitit'

Agree →

e. $[_{VP} [_{PP} P [_{DP3} \{P:3^*, N:sg^*, G:f^*\}]] [_{VP} [_{DP2} \{P:3^*, N:sg^*, G:f^*\}]$
 ot sebja sebja
 $[_{VP} [_{DP1} \{P:3, N:sg, G:f\}] [_{VP} v+V [_{VP-}]]]]]$
 devuška zaščitit'

f. $[_{CP} C [_{TP} [_{DP1} \{P:3, N:sg, G:f\}] [_{TP} T+v+V [_{VP} [_{DP2} \{P:3^*, N:sg^*, G:f^*\}]]]]]$
 devuška zaščitila sebja

13 See Note 39 of part I.

14 Attested in the *N.K.R.JA*.

$$[_{VP} [_{PP} P [_{DP3} \{P:3^*, N:sg^*, G:f^*\}]] [_{VP} DP2 [_{VP} DP1 [_{VP} v+V-[_{VP}]]]]]]]]]$$

 ot sebja

I will not examine in depth the difference between the behaviour of verbal adjunct PPs and argument PPs/DPs, but assuming the difference in their syntax lies in their point of merging, adjunct PPs could be merged as specifiers of vP, whereas argument PPs/DPs could be merged lower in the complement of V (see note 10 of this section). In that case, argument PPs/DPs would need to move to Spec-vP in order to get their ϕ -features valued. I will not examine this matter further in this work and conform to the data I presented.

3.1.3.2. Binding into indicative and subjunctive clauses

The syntactic configurations (9) and (13) can also account for the absence of binding relationships from an antecedent in the matrix clause into an anaphor in a subjunctive or indicative embedded clause in Russian:

- (22) a. Ivan_i xočet čtoby Maša_j vymylas'^{*i/j}.
Ivan-NOM wants that-SUBJ Maša-NOM washed-RELF
 Ivan_i wants that Maša_j washed *him_i/herself_j.
- b. Ivan_i xočet čtoby Maša_j vymyla sebja^{*i/j}.
Ivan-NOM wants that-SUBJ Maša-NOM washed self-ACC
 Ivan_i wants that Maša_j washed *him_i/herself_j.
- (23) a. Ivan_i skazal čto Boris_j vymylsja^{*i/j}.
Ivan-NOM said that Boris-NOM washed-REFL
 Ivan_i said that Boris_j washed *him_i/himself_j.
- b. Ivan_i skazal čto Boris_j vymyl sebja^{*i/j}.
Ivan-NOM said that Boris-NOM washed self-ACC
 Ivan_i said that Boris_j washed *him_i/himself_j.

In none of these examples agreement can take place between the matrix subject and the embedded anaphor, because the matrix object always stands between them in the

derivation. In fact, in (22a) and (23a) the embedded subject is merged as the complement of the verb in the complex RP constituent, within which it is probed by the anaphor. The matrix subject, instead, is merged later in the derivation, into matrix Spec-vP, without any possibility to antecede the anaphor. In (22b) and (23b) the situation is very similar, only the anaphor raises to embedded Spec-vP to establish the agreement relationship with the DP in Spec-vP (the embedded subject), but also in this case the matrix subject enters the derivation when the anaphor has already obtained values for its own φ -features.

3.1.3.3. Binding into infinitive clauses

Infinitive clauses display a number of interesting phenomena. Before reviewing them, however, we ought to make some considerations on how infinitive clauses are derived and on the status of PRO, which for GB control theory is their phonologically null subject.

In line with Chomsky and Lasnik 1993 I consider the PRO subject of infinitive clauses a phonologically null pronoun which is assigned a θ -role by the infinite embedded verb and null case by infinitive T. So the merging position of PRO for transitive verbs is the embedded Spec-vP. Then it always raises to Spec-TP in order to get case. Furthermore, although the status in the syntax of both PRO and the control relationship is highly controversial¹⁵, I assume PRO is merged into the syntactic structure with unvalued φ -features, which are valued in the course of the derivation by the closest coargumental c-commanding DP. Those cases involving raising verbs, instead, are different: there is no need of a silent PRO as the recipient of a θ -role in embedded Spec-TP; that position only provides a provisional landing site for the matrix subject.

Assuming verbs taking clausal complements conform to Larson's vP structure (see note 10 of this section), the derivation of infinitive clauses selected by raising verbs (like those in (24)) does not present particular difficulties and does not involve ambiguity. The derivations of (24a) and (24b) are shown in (25) and (26) respectively:

- (24) a. Ivan_i xotel zaščitiť'sja_i.
Ivan-NOM wanted to-defend-PF-REFL
 Ivan_i wanted to defend himself_i.

¹⁵ See Hornstein 1999.

- b. Ivan_i xotel zaščitit' sebj_a_i.
Ivan-NOM wanted to-defend-PF self-ACC
 Ivan_i wanted to defend himself_i.

- (25) a. [_{VP} V [_{RP} [_{DP2} {P:_, N:_, G:_}] [_{RP} R [_{DP1} {P:3, N:sg, G:m}]]]]
 zaščitit' REFL Ivan

Agree →

- b. [_{VP} V [_{RP} [_{DP2} {P:3*, N:sg*, G:m*}] [_{RP} R [_{DP1} {P:3, N:sg, G:m}]]]]
 zaščitit' REFL Ivan

- c. [_{VP} [_{DP1} {P:3, N:sg, G:m}] [_{VP} v+V [_{VP} V [_{RP} [_{DP2} {P:3*, N:sg*, G:m*}]]
 Ivan zaščitit'- REFL
 {_{RP}-}]]]]

- d. [_{TP} [_{DP1} {P:3, N:sg, G:m}] [_{TP} T_{INF}+v+V [_{VP} [_{DP2} {P:3*, N:sg*, G:m*}] [_{VP}
 Ivan zaščitit' - sja
 DP1 [_{VP}-]]]]]

- e. [_{VP} [_{DP1} {P:3, N:sg, G:m}] [_{VP} v+V [_{VP} V [_{TP} DP1 [_{TP} T_{INF}+v+V
 Ivan xotel' zaščitit'-
 [_{VP} [_{DP2} {P:3*, N:sg*, G:m*}] [_{VP} DP1 [_{VP}-]]]]]]]]]
 sja

- f. [_{CP} C [_{TP} [_{DP1} {P:3, N:sg, G:m}] [_{TP} T+v+V [_{VP} DP1 [_{VP} v+V [_{VP} V [_{TP} DP1
 Ivan xočet
 [_{TP} T_{INF}+v+V [_{VP} [_{DP2} {P:3*, N:sg*, G:m*}] [_{VP} DP1 [_{VP}-]]]]]]]]]]]
 zaščitit'- sja

The anaphor at the beginning of the derivation probes and establishes an agreement relationship with DP1. As the temporal features of embedded T_{INF} can only be checked by matrix V, the embedded TP phase remains open until matrix V is merged, allowing the raising of DP1. After matrix T is merged, the v+V complex adjoins to it and DP1 moves to its specifier. In (26), instead, the embedded anaphor needs to move

upwards in order to probe DP1 from a higher Spec-vP:

- (26) a. $[_{VP} [_{DP1} \{P:3, N:sg, G:m\}] [_{VP} v+V [_{VP} \forall [_{DP2} \{P:_, N:_, G:_}\}}]]]$
 Ivan zaščitit' sebja
- b. $[_{VP} [_{DP2} \{P:_, N:_, G:_}\}] [_{VP} [_{DP1} \{P:3, N:sg, G:m\}] [_{VP} v+V [_{VP} \forall DP2]]]]]$
 sebja Ivan zaščitit'
- Agree →
- c. $[_{VP} [_{DP2} \{P:3^*, N:sg^*, G:m^*\}] [_{VP} [_{DP1} \{P:3, N:sg, G:m\}] [_{VP} v+V [_{VP-}]]]]]$
 sebja Ivan zaščitit'

For ECM clauses, instead, the plot thickens: the presence of two DPs in the matrix clause can elicit ambiguity, but only in those cases where the embedded verbal complement is *sebja* and the aspect of the infinitive verb is perfective, like in (27a). If the infinitive verb possesses the suffix *-sja*, the antecedent of the embedded anaphor is always the matrix object (27c-d).

- (27) a. Ivan_i poprosil Mašu_j zaščitit' sebja_{i/j}.
 Ivan-NOM asked Mary-ACC PRO to-defend-PF self-ACC
 Ivan_i asked Mary_j to defend him_i/himself_j.
- b. Ivan_i poprosil Mašu_j zaščiščat' sebja^{*i/j}.
 Ivan-NOM asked Mary-ACC PRO to-defend-IMPF self-ACC
 Ivan_i asked Mary_j to defend *him_i/himself_j.
- c. Ivan_i poprosil Mašu_j zaščitit'sja^{*i/j}.
 Ivan-NOM asked Mary-ACC PRO to-defend-PF-REFL
 Ivan_i asked Mary_j to defend himself^{*i/j}.
- d. Ivan_i poprosil Mašu_j zaščiščat'sja^{*i/j}.
 Ivan-NOM asked Mary-ACC PRO to-defend-IMPF-REFL
 Ivan_i asked Mary_j to defend himself^{*i/j}.

3.1.4. Summary

The distributional analysis of verbs taking the suffix *-sja*, contrasted with the combination verb+*sebja*, provides convincing evidence in favour of the thesis that the nature of these two Russian elements is anaphorical. Later in the section I show that the derivation of different types of sentences (main sentences, embedded indicative sentences, embedded subjunctive sentences, embedded infinitive sentences) containing *-sja* and *sebja* is not only compatible with their anaphoric interpretation, but also, they conform to the structures described in Rooryck and Vanden Wyngaerd 2011, repeated here in (31). (31a) shows the initial configuration of the simplex anaphor *-sja*, whereas (31b) that of the complex anaphor *sebja*.

- (31) a. ____ [_{VP} V [_{RP} [_{DP} simplex reflexive] [R [_{DP} antecedent]]]]
- b. [_{VP} [_{DP} antecedent] v [_{VP} V [_{DP} complex reflexive]]]

3.2. *Svoj* and *drug druga*

3.2.1. The possessive reflexive *svoj*

The syntactic behaviour of the Russian reflexive possessive *svoj* can be accounted for as well in the present analysis.

Differently from the other Russian reflexive pronouns, the reflexive possessive *svoj* shows not only case specification, but also genre and number inflection.

	Nominative	Accusative	Dative	Genitive	Instrumental	Locative
Masculine	svoj	svoj/svoego	svoemu	svoego	svoim	svoëm
Feminine	svoja	svoju	svoej	svoej	svoej	svoej
Neuter	svoë	svoë/svoego	svoemu	svoego	svoim	svoëm
Plural	svoi	svoi	svoim	svoix	svoimi	svoix

The case specification and the genre-number inflection, however, do not originate from the syntactic agreement with the antecedent, but rather from the DP-internal agreement with an NP. In other words, from a semantic point of view these specifications have nothing to say about whom or what the reflexive possessive is referred to: binding through agreement (or better, agreement resulting in binding) is achieved by means of a probe goal relation between two DPs, not one DP and one NP.

3.2.1.1. The derivation of *svoj*

Rooryck and Vanden Wyngaerd propose the following structures for reflexive possessive pronouns (32a) and non-reflexive possessive pronouns (32b):

- (32) a. $[_{VP} [_{DP1} \{P:3, N:sg, G:m\}] [_{VP} V [_{DP2} [_{D2} \{P:_, N:_, G:_}\} NP]]]$
- b. $[_{VP} [_{DP1} \{P:3, N:sg, G:m\}] [_{VP} V [_{DP2} [_{D2} \{P:3, N:sg, G:m\}\} NP]]]$

These structures are shown to provide an explanation also for the Russian data in (33), where (33a) contains a reflexive possessive, and (33b) a non-reflexive one. Their

derivation is described in (34) and (35) respectively.

(33) a. Volodja_i ljubit svoju_{i/*k} sestru.
Volodja-NOM loves self's-ACC sister-ACC
 Volodja_i loves his_{i/*k} sister.

b. Volodja_i ljubit ego_{*i/k} sestru.
Volodja-NOM loves his-ACC sister-ACC
 Volodja loves his_{*i/k} sister.

(34) a. [_{VP} [_{DP1} {P:3, N:sg, G:m}]] [_{VP} V [_{DP2} [_{D2} {P:_, N:_, G:_}] NP]]]
 Volodja ljubit' svoja sestra

b. [_{VP} [_{DP2} [_{D2} {P:_, N:_, G:_}] NP]] [_{VP} [_{DP1} {P:3, N:sg, G:m}]] [_{VP} V [_{DP2}]]]]]
 svoja sestra Volodja ljubit'

Agree →

c. [_{VP} [_{DP2} [_{D2} {P:3*, N:sg*, G:m*}]] NP]] [_{VP} [_{DP1} {P:3, N:sg, G:m}]] [_{VP} V [_{DP2}]]]]]
 svoja sestra Volodja ljubit'

d. [_{CP} C [_{TP} [_{DP1} {P:3, N:sg, G:m}]] [_{TP} T+v+V [_{VP} [_{DP2} [_{D2} {P:3*, N:sg*, G:m*}]] NP]] [_{VP}]]]]]
 Volodja ljubit
 svoju sestru

The reflexive possessive of (33a) is forced to raise to Spec-vP in order to establish agreement with the subject DP. In (35), conversely, the \varnothing -full possessive pronoun does not need raising, and as its \varnothing -features are visible on v (which remains available after the vP phase closes), the semantic reading of the two pronouns is necessarily disjoint:

(35) a. [_{VP} [_{DP1} {P:3, N:sg, G:m}]] [_{VP} V [_{DP2} [_{D2} {P:3, N:sg, G:m}]] NP]]]
 Volodja ljubit' ego sestra

- b. [_{CP} C [_{TP} [_{DP1} {P:3, N:sg, G:m}] [_{TP} T+v+V [_{VP} DP1 [_{VP} v+V [_{VP} V [_{DP2} Volodja ljubiti
[_{D2} {P:3, N:sg, G:m}] NP]]]]]]]]]
ego sestru

3.2.1.2. Svoj across clausal boundaries

As for *sebja* and the suffix *-sja*, the binding of *svoj* is prohibited from a matrix clause into an embedded subjunctive or indicative:

- (36) a. Ivan_i xočet čtoby Volodja_j poceloval svoju_{*i/j} sestru.
Ivan-NOM wants that-SUBJ Volodja-NOM kissed-SUBJ self's sister-ACC
Ivan_i wants that Volodja_j kissed his_{*i/j} sister.
- b. Ivan_i skazal čto Volodja_j poceloval svoju_{*i/j} sestru.
Ivan-NOM said that Volodja kissed self's-ACC sister-ACC
Ivan_i said that Volodja_j kissed his_{*i/j} sister.

Again, this is caused by the impossibility of a syntactic agreement relationship between the matrix subject and the embedded DP containing the anaphor: the embedded subject merged in embedded Spec-vP always 'intercepts' the anaphor's need for valued ϕ -features before the matrix subject is even merged.

Finally, the behaviour of *svoj* in control infinitive clauses patterns with the behaviour of the reflexive pronoun *sebja* in the same syntactic context. Also, with *svoj* the ambiguity arises despite the fact that the aspect of infinitive verb is imperfective:

- (37)¹⁸ Professor_i poprosil assistenta_j čitat'
Professor-NOM asked-PF his assistant-ACC PRO to-read-IMPF
svoj_{i/j} doklad.
self's record-ACC.
The professor_i asked his assistant_j to read his own_{i/j} record.

Despite the fact that it displays an additional agreement with its DP-internal NP,

¹⁸ From Rozental' 1974.

- b. $[_{VP} [_{DP2} \{P:_, N:pl, G:_ \}] [_{VP} [_{DP1} \{P:3, N:pl, G:m\}] [_{VP} v [_{VP} V [_{DP2} \}]]]]]$
 drug druga morjaki ljubit'

Agree →

- c. $[_{VP} [_{DP2} \{P:3^*, N:pl, G:m^*\}] [_{VP} [_{DP1} \{P:3, N:pl, G:m\}] [_{VP} v [_{VP} V [_{DP2} \}]]]]]$
 drug druga morjaki ljubit'

- d. $[_{CP} C [_{TP} [_{DP1} \{P:3, N:pl, G:m\}] [_{TP} T+v+V [_{VP} [_{DP2} \{P:3^*, N:pl, G:m^*\}]$
 morjaki ljubjat drug druga
 $[_{VP} \overline{DP1} [_{VP} v+V [_{VP} _]]]]]]]]]$

Another similarity with *sebja* and *svoj* is that it is impossible for *drug druga* in a subjunctive or indicative embedded clause to corefer with a matrix clause antecedent:

- (39) a. Roditelji_i xoteli čtoby deti_j ljubili
 parents-NOM wanted that-SUBJ children-NOM loved-SUBJ
*drug druga*_{*ij}.
 each other-ACC

The parents_i wanted that the children_j loved each other_{*ij}.

- b. Roditelji_i dumali čto deti_j ljubjat drug druga_{*ij}.
 parents-NOM thought that children-NOM love each other-ACC

The parents_i thought that the children_j loved each other_{*ij}.

With ditransitive verbs, interestingly, the reciprocal *druga druga* does not display the subject-orientation of *sebja* and *svoj*, but rather it can corefer with both the subject and the direct object, if it is contained in the indirect object²¹:

- (40) Milicionery_i rassprashivali arestovannyx_j drug o druge_{ij}.
 policemen-NOM questioned suspects-ACC each-about-other-LOC
 The policemen_i questioned the suspects_j each about the other_{ij}.

²¹ From Rappaport 1986.

Conversely, in control infinitive constructions, where the presence of a perfective infinitive verb make it possible for the embedded anaphor *sebja* to corefer with the matrix subject, the reciprocal *drug druga* can only corefer with the matrix object (and PRO):

- (41) My_i poprosili ix_j nalit' drug drugu* $_{ij}$ čajku.
we-NOM asked them-ACC PRO to-pour-PF each other-DAT tea-ACC
 We_i asked $them_j$ to pour tea to each other* $_{ij}$.

A detailed account on Russian reciprocal pronouns goes beyond the aims of the present work. Nonetheless, I think that the referential and syntactic behaviour of the reciprocal *drug druga* can be explained maintaining the premises and the structures of the analysis I conducted, or at least, this behaviour does not clash with the deductions about anaphoricity and anaphoric elements supported so far.

For this reason, having pointed out some difference and some similarities between the Russian reciprocal *drug druga* and the Russian reflexive pronouns *sebja* and *svoj*, I leave the matter for future research.

3.3. Reflexivity as an epiphenomenon

In the present work I intend to challenge the view that reflexivity is motivated by a property of predicates, and I claim that the only verbal property playing a role in the determination of anaphoric elements and relationships is their transitivity/intransitivity. Both verbs with the suffix *-sja* and verbs occurring with *sebjā* can contribute to a reflexive (anaphorical) interpretation, but their fundamental difference lies in whether they have a transitive or an intransitive syntax. Such a claim is supported by the data from Russian language I analyzed in Chapter 3 of the dissertation and by the related derivations.

In light of this fact, what place does reflexivity occupy in grammar, if any? If, as I tried to show, it is indeed possible to explain the coreference between the so called reflexive pronouns and suffixes by adopting the agreement relationship alone, the notion of reflexivity becomes redundant and it is therefore to be understood as an epiphenomenal label for syntactic-based (agreement-based) coreference.

The factors at play in agreement-based coreference are the following: the internal structure of DPs, the agreement relation and the structural possibilities of its realization, and the interpretation at LF resulting from the interaction of these factors. I call the DPs involved in the syntactic structural possibility of coreference anaphors. More precisely:

- (42) If α is anaphorical, then
- a. α is a DP
 - b. α enters the derivation with unvalued φ -features and receives a value for them through Agreement

The DP-requirement assures that those functional elements (T, v, and C) whose φ -features receive a value during the derivation, are excluded. Furthermore, this definition rejects reflexivity as a syntactic primitive and does not contain the concept of coreference, insofar this concept concerns only the LF interface. The first fact originates from the second: as coreference can be obtained without the aid of syntax (through pragmatic/discourse mechanisms, for example²²), it must be kept separated from anaphoricity. Even more so, reflexivity intended as coreference of predicate arguments²³, being defined in terms of coreferentiality, cannot constitute a syntactic primitive. Instead, I

22 Ex: The miner_i hit her_j and the poor thing_i fell on the ground.

23 That is, the idea of reflexivity in Antonenko 2012 and in Reinhart and Reuland 1983.

claim that anaphorical elements at the interface receive a coreferential interpretation, but they are not syntactically specified for reflexivity.

Conclusion

The aim of the present work is to propose an explanation for Russian binding phenomena based on specific theoretical premises. These premises play a fundamental role in the analysis I conducted and are therefore recapitulated below.

Firstly, the need to surpass the GB account of binding phenomena: under a Strong Minimalist Thesis the government relationship, fundamental in GB, does not have any theoretical justification, and without it the entire system of rules for binding domains collapses. Indices are prohibited by the *Inclusiveness Condition* as well. The number of GB notions the Minimalist Program wiped out renders a rethinking of binding phenomena urgent. Secondly, the theoretical and empirical necessity that the explanation of binding phenomena be founded on universally acknowledged processes, in order to avoid creating a system of rules which does not withstand cross-linguistic analysis and is in continuous need of clumsy modifications. Thirdly, the fundamental assumption of Distributed Morphology: late lexical insertion¹. The idea that the phonetic output of syntactic structures is determined only after all the major syntactic processes have taken place explains that the cross-linguistic differences in the expression of specific syntactic objects are determined by what is available in the lexical inventory of a specific language.

The three approaches I examined are based on syntactic agreement, but beside that they present substantial differences. Antonenko 2012 aims to resolve reflexivity and anaphorical relationships with the aid of a dedicated feature for reflexivity, but the adoption in syntax of the counterpart of a semantic concept fails to capture the purely syntactic nature of the processes relevant for syntactic coreference and the structure of anaphorical and pronominal DPs. Nevertheless, this approach warrants a wide empirical coverage for Russian data. Many of the assumptions proposed by Heinat 2006, instead, seem promising and consistent with a minimalist model of the language. The fact that for anaphors and pronouns the same root is merged to different morphemes allows to explain their different syntactic behaviour without the introduction of an additional feature. Furthermore, late lexical insertion moves the locus of cross-linguistic variation after narrow

¹ Although, in line Sigurðsson 2006, I would use 'translation' instead of 'insertion'.

syntax, thus leaving syntactic processes unaffected by it. What Heintz does not account for is the difference between simplex and complex anaphors and the related syntactic contexts, but this topic is extensively developed in Rooryck and Vanden Wyngaerd 2011. Their approach shares many of Heintz's theoretical assumptions, but it also integrates them with a more convincing derivational mechanism.

My analysis aims to verify the presence of the same structures and mechanisms described by Rooryck and Vanden Wyngaerd in Russian language data and to give a precise description of the data whenever possible. After examining the distribution of Russian anaphors and their syntactic and semantic behaviour, I tried to reconstruct their derivation in different types of clauses and with different verbs. Although there are still phenomena whose explanation requires further work, the Russian data seem to conform to the proposed structures. Therefore, my conclusion is that the fundamental syntactic factors justifying syntactic-based coreference are the composition of DPs and the structural possibility of Agreement. Consequently, the notion of reflexivity, though deeply rooted as a taxonomic device, ought to be rejected as a grammatical primitive.

In order to provide further support for such an account of binding phenomena, however, it is necessary to increase the number of languages for which this analysis can be proven adequate. In addition, in the present work nothing is said about the interaction between binding phenomena and those phenomena involving the left periphery of the sentence². This interaction ought to be analyzed as well and these issues constitute an interesting and promising topic for future research.

² See Rizzi 1997.

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