Auxiliary Selection in Italo-Romance:
A *Nested Agree* Approach

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Abstract

In this dissertation, I develop an analysis of auxiliary selection couched in Minimalism (Chomsky 1995, 2000, 2001) and Distributed Morphology (Halle and Marantz 1993; Harley and Noyer 1999). The term *auxiliary selection* refers to the alternation between BE and HAVE as auxiliaries in the Romance and Germanic periphrastic perfect constructions (Perlmutter 1978; Burzio 1986; Sorace 2000; Bjorkman 2011). The problem of auxiliary selection is important because the distribution of the perfect auxiliaries exhibits impressive variation among closely related varieties, although limited to two main types: argument-structure-based (as in Italian), or person-driven (as in many Southern Italian dialects), with the possibility of some further interactions (additional person restrictions, tense/aspect/mood restrictions). Crucially, in both systems auxiliary selection is sensitive to the features of the arguments. For instance, in Standard Italian unaccusative verbs select for BE, and transitive verbs require HAVE. However, if a transitive verb selects for a reflexive or impersonal pronoun, then the perfect auxiliary is BE.

The main claim of this dissertation is that auxiliary selection is the result of Agree for the person feature both in argument-structure-driven systems and in person-driven systems. Moreover, traditionally called "auxiliary switch" is the emergence of the unmarked auxiliary, due either to failed Agree or to Agree with defective items. I assume a cross-linguistically uniform syntax, where the differences between languages are only due to a syntactic parameter (the order of the features on the head Perf) and to different inventories of Vocabulary Items. The cross-linguistic variation stems via reordering of features (Heck and Müller 2006; Müller 2009; Georgi 2014).

I also extend this analysis to restructuring, showing that these cases can be accounted for with the same "tools" as for root clauses. I argue that true optionality in auxiliary selection does not exist, but rather the optionality with respect to different complement sizes determine different search domains for Agree. Moreover, I also provide an analysis of past participle agreement as a morphological reflex of A-movement.

To the best of my knowledge, there is no other theory of auxiliary selection that has provided an explicit and coherent analysis of the whole distribution of auxiliaries in root clauses and in restructuring, has sketched a typology of other varieties, and is compatible with other phenomena such as participle agreement. This suggests that the inventory of the principles of grammar must be somehow enlarged with new tools. For this reason, I introduce the principle of *Nested Agree*. Nested Agree is essential to derive the distribution of auxiliary selection in argument-structure-driven systems, because it allows the probe on the perfect head to get past the subject of transitive verbs (leading to BE insertion in the case of a reflexive argument), and to skip the subject of unaccusative verbs (causing BE insertion). This principle states that, if the features on a head are ordered, the domain of each operation is reduced by the application of the previous operation triggered by the

same head. The locality domain of each operation depends both on the syntactic structure itself and on the accomplishment of previous operations. Nested Agree stems from the combination of already proposed principles of syntactic theory, such as feature ordering, downward Agree and Agree-Link. It contributes to the ongoing debate on multiple probing and on locality, with a special focus on minimality. Minimality violations do not arise (despite superficial appearance) if the higher, alleged intervener actually lies outside the search domain of the probe, as determined by Nested Agree.

Acknowledgments

ξυνὸν γὰρ ἀρχὴ καὶ πέρας ἐπὶ κύκλου περιφερείας.
'Comune è infatti il principio e la fine nella circonferenza.'

Eraclito, frammento 103

I am sitting on a train, looking at the German landscape out of the window. Everything is moving so fast, and I myself am moving through it, like on the circumference of a circle. I am happy that I got on this train, and that I am now arriving at a destination, a point of the circle like any other, from which I can move again.

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Ai miei genitori

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List of abbreviations and symbols

aux	auxiliary		
cl	clitic	1	first person
cl cl	clitic climbing	2	second person
EF	edge feature	3	third person
NA	Nested Agree	π	person feature
MLC	Minimal Link Condition	γ	gender feature
PIC	Phase Impenetrability Condition	#	number feature
ppa	past participle agreement	ϕ	person, number
SCC	Strict Cycle Condition		and gender features
TAM	tense, aspect, mood		

ABS	absolutive		
ACC	accusative	NOM	nominative
APPL	applicative	NS	nonsubject voice
AUX	auxiliary	OBJ	object
COND	conditional	PASS	passive
CONJ	conjunctive	PFV	perfective
DAT	dative	PL	plural
ERG	ergative	POSS	poss
F	feminine	PRF	perfect
FOC	focus	PRS	present
FUT	future	PRTC	participle
GEN	genitive	PST	past
GER	gerund	REFL	reflexive
IMPERS	impersonal	REL	relative
IMPF	imperfect	SG	singular
INF	infinitive	SBJ	subject
M	masculine	TOP	topic
NEG	negation		

1 The problem of auxiliary selection

1.1 Introduction

This dissertation deals with the problem of auxiliary selection in natural languages. An *auxiliary* is a verb that expresses functional meaning, such as person specification, tense or aspect features, rather than lexical meaning. Differently from lexical verbs, it also does not have an argument structure of its own. An auxiliary is part of the present perfect tense, which is a periphrastic form used for expressing events occurring at some indeterminate time in the past as having direct implications in the present.[1] Morphologically, it is constituted by an auxiliary in the present tense that bears person and number inflection, and a lexical verb in the form of a past participle. The perfect auxiliary contributes grammatical rather than lexical meaning, it being the morphological realization of the tense and aspect value of the clause.

(1)   *Present perfect tense*
        I   have   eaten
        subject perfect auxiliary past participle

The term *auxiliary selection* refers to the alternation between BE and HAVE as auxiliaries in the perfect (Bjorkman 2011: 126).[2] The discussion of this phenomenon goes back to Perlmutter (1978). For the perfect auxiliary, some languages have at disposal either only HAVE (English, Spanish, Swedish, Portuguese, some varieties of Catalan, some Italo-Romance dialects), only BE (Scottish Gaelic, Welsh, an Italo-Romance variety called Terracinese, some Slavic languages, Shetland English) or both forms in complementary distribution (McFadden 2007: 2-12). In this case the grammar presents a split system, where the choice of the auxiliary may depend on different factors, such as argument structure (Italian, German, Dutch, French and many other Romance and Germanic varieties) (Sorace 2000; McFadden 2007) or the person specification of a verbal argument,

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[1]The *perfect* shares properties with both temporal and aspectual forms, differently from the *perfective*. As a tense category, the perfect temporally locates an eventuality relative to some reference point, expressing anteriority (Iatridou, Anagnostopoulou, and Izvorski 2012: 153). As an aspectual category, it describes a state that follows from a prior eventuality (Iatridou, Anagnostopoulou, and Izvorski 2012: 154). The perfective aspect, instead, conveys the meaning that the eventuality in question is completed, whereas the imperfective aspect presents a situation as ongoing (Iatridou, Anagnostopoulou, and Izvorski 2012: 170). Hence, the perfect is expressed by a higher head than the perfective, it being a higher aspect or a relative tense. Although the two should be semantically distinguished, in Romance languages such as Italian, the perfect always involves perfective morphology and there are no combinations of the perfect with imperfective morphology, as is instead possible in English (Pancheva 2012). Therefore, in this dissertation I will refer to the periphrases as in (1) as *perfect*, without entering any discussion about their semantics. For the difference between perfect and perfective, cf. Bjorkman (2018: 326) and references therein.

[2]With capital letters I indicate the abstract morpheme corresponding to the root of the verb. The label *HAVE* stands for each possible occurrence of the verb 'to have'. I use also this notation in the lexical entries in (10).

eventually in interaction with tense and aspect properties of the clause (several Southern Italian dialects, such as Ariellese, Neapolitan) (Tuttle 1986; Kayne 1993; Manzini and Savoia 2005). An example of the former type is German, where the auxiliary of a transitive verb is different to the one of an unaccusative verb (a verb whose single argument bears the thematic role of patient, such as 'to fall'). In (2) we see that a change of location verb such as *ankommen* 'to arrive' selects BE, whereas a verb that indicates a controlled process with agentive subject such as *arbeiten* 'to work' selects HAVE.

(2)   a.   Der Zug ist   spät angekommen.
           the train be.PRS.3SG late arrive.PRTC
           'The train arrived late.'   (Sorace 2000: 864)
      b.   Kurt hat   den   ganzen   Sonntag
           Kurt have.PRS.3SG the.ACC.SG.M all.ACC.SG.M Sunday.ACC.SG.M
           gearbeitet.
           work.PRTC
           'Kurt worked all day Sunday'   (Sorace 2000: 874)

An example of person-based split is a language where the form of the auxiliary depends on the person features of the subject. Such a language is Ariellese, an Italo-Romance variety spoken in Southern Italy, where first and second person subjects are always associated with BE, whereas a third person subject determines the use of HAVE. Example (3) shows that auxiliary selection is not dependent on the type of predicate.

(3)   a.   Ji   so'   fatte   na torte.
           NOM.1SG be.PRS.1SG make.PRTC a   cake
           'I have made a cake.'
      b.   Esse   a   fatte   na torte.
           NOM.3SG have.PRS.3SG make.PRTC a   cake
           'She has made a cake.'   (D'Alessandro and Roberts 2010: 43)
      c.   Ji   so'   cascate.
           NOM.1SG be.PRS.1SG fall.PRTC
           'I have fallen down.'
      d.   Esse   a   cascate.
           NOM.3SG have.PRS.3SG fall.PRTC
           'She has fallen down.'   (D'Alessandro and Roberts 2010: 44)

Here we see that if the subject is first person, then the perfect auxiliary is always BE, both with transitive predicates (3-a) and with unaccusative verbs (3-c). In contrast, if the subject is third person, then the perfect auxiliary is always HAVE (3-b,d), again without any influence of the argument structure involved.

The aim of this dissertation is to address the following questions: why auxiliaries show these different forms within a single language, what drives the distribution and how cross-linguistic data can be accounted for. The main focus is on the perfect auxiliary in Standard Italian, but I consider also other languages such as German, French and some

Italo-Romance varieties, and more complex contexts, such as restructuring configurations. The interest of the present research question lies in multiple aspects. Firstly, the topic is extremely relevant because of gaps and inadequacies in the previous literature, as I will show in the next section. Consequently, this dissertation aims at filling this gap in the theory, by giving a unified analysis for root clauses and restructuring that is compatible with other syntactic phenomena, such as participle agreement. Secondly, it is clear that auxiliary selection cannot be lexical, but rather it depends on syntax (cf. reflexives and restructuring). This means that its understanding sheds light on the grammar itself and on the interaction between the modules of syntax, morphology, and the lexicon. If we consider that there is no syntactic account that can explain the exact distribution of the auxiliaries neither in root clauses, nor in restructuring, it is certainly worth taking on the challenge and seeing in which respect we have to change our view of syntactic operations and their interactions. Thirdly, this topic is very interesting for the extremely rich cross-linguistic variation it is subject to. Just looking at Standard Italian (*argument-structure-driven auxiliary selection*) and Southern dialects (*person-driven auxiliary selection*) we see how different can the two systems be. The new idea of this dissertation is to consider these different splits as the output of the same syntactic structure. The analysis proposed here for argument-structure-driven auxiliary selection systems such as Standard Italian also accounts for person-driven auxiliary selection as in Ariellese. Syntax is always the same: all these languages (even languages without any split, such as Spanish) have the ability of realizing different feature specifications on the perfect auxiliary. This approach is in line with the research program that reduces language variation to variability in the morpho-phonological features of the lexicon (Chomsky 1995: 204,216). Therefore, this dissertation offers a case study of linguistic variation by keeping syntactic objects or operations cross-linguistically as much similar as possible and contributes to the research on universals and language specific variations.

1.2 Gaps and inadequacies in the previous accounts

The *Unaccusativity Hypothesis* (Perlmutter 1978; Burzio 1986), which distinguishes between unaccusative and unergative verbs, is one of the first attempts to relate different auxiliaries to different syntactic structures. The work of Sorace (2000, 2004) builds on this hypothesis and brings to the identification of contextual and semantic factors for the identification of which auxiliary should be used for which verb, when a language has the choice between two lexical items. Given the hierarchy of auxiliary selection proposed by Sorace (2000: 863), BE is associated with verbs on the left and HAVE with verbs on the right of the cline in (4), the cutting point being different for each specific language.

(4)   change of location > change of state > continuation of a pre-exhisting state > existence of a state > uncontrolled process > controlled process (motional) > controlled process (non motional)

Going back to the examples proposed in the previous section, the example in (2) fits this simple picture. Clearly, example (3) does not conform to the hierarchy in (4). Generally, languages with person-driven splits are considered to involve a different mechanism from what is needed for argument-structure-driven splits. Analyses of person-driven splits rely on ad hoc constraints (Legendre 2010) or on rules that fail to capture the data for other languages (D'Alessandro and Roberts 2010; Steddy and van Urk 2013). However, person-driven auxiliary selection is not the only exception to the cline in (4). If we consider another language where the auxiliary choice is dependent on the type of predicate, such as Standard Italian, we see that the features of the arguments also play a role. In fact, Standard Italian shows cases of unexpected auxiliaries which have not been fully explained by previous accounts. In particular, transitive verbs require the use of HAVE as the perfect auxiliary. However, if the object is a reflexive clitic (5-b), if there is a reflexive benefactive argument (5-c), or if the clause is impersonal (5-d), the auxiliary changes to BE, independently of the argument structure of the verb.[3]

(5)   a.   Teresa ha   lavato   la camicia.
          Teresa have.PRS.3SG wash.PRTC the shirt
          'Teresa has washed the shirt.'

      b.   Teresa si=è   lavat-a.
          Teresa REFL.ACC.3SG.F=be.PRS.3SG wash.PRTC-SG.F
          'Teresa washed herself.'

      c.   Teresa si=è   lavat-a   la camicia.
          Teresa REFL.DAT.3SG.F=be.PRS.3SG wash.PRTC-SG.F the shirt
          'Teresa washed her shirt.'

      d.   Alla   lavanderia si=è   lavato   dieci camicie.
          in.the laundry   IMPERS=be.PRS.3SG wash.PRTC ten   shirts
          'In the laundry, one has washed ten shirts.'

The first puzzle I aim to solve is what determines the auxiliary selection pattern in (5). Since in reflexive and impersonal clauses the auxiliary is independent of the type of verb, auxiliary selection requires a syntactic analysis. Consequently, auxiliary selection with lexical verbs must also be a syntactic process (Legendre 2007: 175). The most recent syntactic accounts of auxiliary selection have been proposed by D'Alessandro and Roberts (2010); Bjorkman (2011). The former argue for a rule of auxiliary selection: in Standard Italian, HAVE is inserted when v (which is the functional head that encodes the type of argument structure of the predicate) is non-defective, otherwise BE is the chosen auxiliary (D'Alessandro and Roberts 2010: 51). The latter argues that HAVE appears every time that the argument structure of the verb presents an external argument, otherwise BE is selected. However, these accounts face some problems. On the one hand, if it is the sole presence of the external argument to determine the form of the auxiliary (Bjorkman 2011), we would not expect BE in (5-b) and (5-c), where there is an overt subject introduced

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[3]Where not indicated differently, examples are mine.

by the transitive verb. On the other hand, if the constraining factor is the argument structure itself (D'Alessandro and Roberts 2010), we would get HAVE with every transitive predicate, thus in all instances in (5). Note that Bjorkman (2011) does not mention the case of reflexives, whereas D'Alessandro and Roberts (2010) are aware of the problem but do not make any concrete suggestion about how to solve the issue (cf. footnote 7 on p. 51 in D'Alessandro and Roberts 2010).

There are also many other accounts of auxiliary selection. The approach developed by Legendre (2007) makes use of lexico-aspectual constraints that aim at deriving the Auxiliary selection hierarchy in (4). However, if the competition of constraints can successfully locate a predicate on the cline, it does not explain why that position on the cline is associated with a particular auxiliary. The analysis is also not clear about those cases where the auxiliary BE emerges (reflexive, benefactive, impersonal clauses). Finally, other previous analyses such as Kayne (1993); Cocchi (1995) make use of assumptions that nowadays are obsolete.

Moreover, next to the auxiliary selection problem there is the issue of participle agreement, which co-occurs with the auxiliary BE, as is shown in (5-b,c). Current analyses of participle agreement (Kayne 1989a; D'Alessandro and Roberts 2008; Belletti 2017) are not concerned with auxiliary selection and are, indeed, incompatible with currents analysis of it. For instance, the analysis of participle agreement proposed by D'Alessandro and Roberts (2008) cannot be straightforwardly used together with the analysis for auxiliary selection proposed by the same authors (D'Alessandro and Roberts 2010). In fact, in order to derive participle agreement, the featural distinctions between unaccusative and transitive v is minimized by resorting to a ϕ-probe for both heads. Hence, it is not clear which information about v the auxiliary selection rule could take into account, since case features and Merge features should be already discharged.

The situation becomes even worse when we look at more complex structures. In restructuring configurations, a modal, aspectual or motion verb embeds a non-finite verb (Rizzi 1976; Wurmbrand 2003; Cinque 2004). This configuration is transparent for clause-bounded phenomena, for example movement of the clitic to the modal verb (clitic climbing, Cardinaletti and Shlonsky 2004). Another characteristics is the possibility of so-called *auxiliary switch*: the auxiliary of the modal may be the one selected by the embedded verb. Recall that in Italian unaccusative verbs and reflexive verbs select BE as their auxiliary. In (6-a,b), we see that when a modal verb takes an unaccusative verb as its complement, then the auxiliary of the modal can be either BE (as determined by the lexical verb) or HAVE (as is the case when the modal verb selects a transitive verb or a nominal complement). The choice seems to be subject to optionality, but this suddenly breaks down when there is a clitic that is realized on the modal verb (clitic climbing) (6-c,d).

(6)   a.   Teresa ha   voluto   andar=ci   ieri.
                Teresa have.PRS.3SG want.PRTC go.INF=there yesterday

         b.   Teresa è   volut-a   andar=ci   ieri.
                Teresa be.PRS.3SG want.PRTC-SG.F go.INF=there yesterday

         c.   Teresa ci=è   volut-a   andare ieri.
                Teresa there=be.PRS.3SG want.PRTC-SG.F go.INF yesterday

         d. *Teresa ci=ha   voluto/-a   andare ieri.
                Teresa there=have.PRS.3SG want.PRTC/-SG.F go.INF yesterday
                'Teresa wanted to go there yesterday.'

Interestingly, the same interaction with clitic climbing (switch to BE in correspondence of clitic climbing) can also be observed for other restructuring verbs that normally do not allow for auxiliary switch at all, such as aspectual verbs in (7) and (8). To the best of my knowledge, this phenomenon has never been discussed before in the literature. In (7), I show that the aspectual verb *cominciare* 'to start', which is a restructuring verb since it allows for clitic climbing and long passivization, always selects HAVE as its own auxiliary, independently of the embedded verb (7-a,b). However, if the locative clitic *ci* or the reflexive clitic *si* climb from the embedded position to the matrix verb, suddenly BE becomes either possible (7-d) or obligatory (8-c)–(8-d).

(7)   a.   Teresa ha   cominciato a andar=ci   ieri.
                Teresa have.PRS.3SG start.PRTC to go.INF=there yesterday

         b. *Teresa è   cominciat-a   a andar=ci   ieri.
                Teresa be.PRS.3SG start.PRTC-3SG.F to go.INF=there yesterday

         c.   Teresa ci=ha   cominciato a andare ieri.
                Teresa there=have.PRS.3SG start.PRTC to go.INF yesterday

         d.   Teresa ci=è   cominciat-a   a andare ieri.
                Teresa there=be.PRS.3SG start.PRTC-SG.F to go.INF yesterday
                'Teresa has started to go there yesterday.'

(8)   a.   Teresa ha   provato a lavar=si,   ma non
                Teresa have.PRS.3SG try.PRTC to wash.INF=REFL.ACC.3SG but not
                c'era   acqua calda.
                there=be.PST.3SG water hot

         b. *Teresa è   provat-a   a lavar=si,   ma non
                Teresa be.PRS.3SG try.PRTC-SG.F to wash.INF=REFL.ACC.3SG but not
                c'era   acqua calda.
                there=be.PST.3SG water hot

         c. *Teresa si=ha   provato a lavare, ma non
                Teresa REFL.ACC.3SG=have.PRS.3SG try.PRTC to wash.INF but not
                c'era   acqua calda.
                there=be.PST.3SG water hot

> d.   Teresa si=è   provat-a   a lavare,   ma non
>   Teresa REFL.ACC.3SG=be.PRS.3SG try.PRTC-SG.F to wash.INF but not
>   c'era   acqua calda.
>   there=be.PST.3SG water hot
>   'Teresa has tried to wash herself, but there was no hot water.'

Crucially, works on restructuring are not concerned with the actual explanation of auxiliary switch (Rizzi 1976; Cinque 2004; Cardinaletti and Shlonsky 2004), whereas works on auxiliary selection do not explain what happens in restructuring.[4] If we try to apply the mentioned analyses of auxiliary selection to these data, it is impossible to explain the pattern in (6)–(7)–(8). Either we expect always obligatory switch, if a special restructuring rule that imposes auxiliary matching is assumed, leaving (6-a) as a problem, or a single auxiliary is always expected (HAVE if the modal verb is constructed transitively with an external argument, BE if it is a raising verb with a defective v), leaving the optionality of the switch a mystery (6-a)–(6-b). Moreover, the interactions with clitic climbing in (6-c) and (6-d), (7-c) and (7-d), (8-c) and (8-d) remain unexplained.

1.3 The framework

The dissertation is couched in *Minimalism* (Chomsky 1995, 2000, 2001). This theory argues for the so-called Y-model of grammar: each module of the grammar (syntax, morphology, phonology, semantics and the lexicon) is separated from the other ones, but it is connected via interfaces. The organization is derivational: syntax feeds morphology. For this reason, Minimalism is the suitable framework to model the interaction between the components of grammar. In particular, given the division between modules, the framework can locate the cross-linguistic variation in the morphology and in the lexicon, keeping syntax universal.

(9)   Y-model of grammar

Lexicon ⟶ Syntax ⟶ Spell-out ⟶ Logical Form (LF) / Phonological Form (PF)
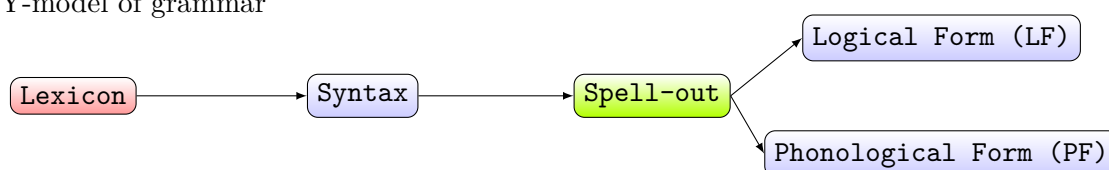
In the Minimalist Program, syntactic dependencies can be shaped by two core operations: Merge (further distinguished into external and internal Merge) and Agree. Merge is the operation that is involved in building the structure. The operation that transfers information across the syntactic nodes is Agree. Agree is a device that establishes a relation between an lexical item α and a feature F in some restricted search space (Chomsky 2000: 101). Two kinds of features are involved: a probe (conventionally labeled with a prefix u), which initiates the operation, and a goal, which is the target of the operation.

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[4]Bjorkman (2011) mentions the issue and sketches an analysis based on Wurmbrand (2003), which however fails to derive the data.

Agree is the search of the probe for matching features on the closest c-commanding goal in a local relationship.[5] Agree leads to the elimination of uninterpretable features from syntactic heads for interface reasons (Chomsky 2000: 122). It can also lead to valuation, as a result of which the features associated with a DP (person, number, gender) are expressed on a functional head H. Agree is subject to different conditions. Firstly, the two involved features must be of the same type (Chomsky 2000: 122): this can be called the *matching condition*. There is also a *directional condition* on c-command and a *minimality condition*. The former states that the probe is allowed to look only in its c-command domain. The minimality condition implies that in case of more than one matching goal in the c-command domain, the closest to the goal (i.e., the highest in the structure) should be chosen Chomsky (2000: 122).

Next to Minimalism, for the morphological realization of syntactic structures I use *Distributed Morphology* (Halle and Marantz 1993; Harley and Noyer 1999). Syntax only manipulates abstract bundles of morpho-syntactic features. These are then substituted by a morpho-phonological exponent that realizes a subset or all of those features (in accordance with the *Subset Principle*). Under this architecture of grammar, the choice of the auxiliary is a matter of vocabulary insertion subject to the Subset Principle. This means that languages with a single auxiliary still have at disposal the same mechanism of Agree needed for languages with auxiliary selection, but they have a more restricted vocabulary inventory, which contains just a single exponent that can spell out the perfect head.

1.3.1 The assumptions of this dissertation

In this section, I summarize the assumptions that I use in this dissertation. I will discuss each of them when I introduce it throughout the chapters. As I have said in the previous section, I assume a modular, derivational model of grammar, where all operations obey strict cyclicity. I also adopt a standard view of Agree, as subject to feature matching, c-command, minimality, downward probing. The further, general assumptions at work are the following.

(i) A probe is a feature (valued or unvalued) that can initiate an operation. The activity of a feature is signaled by the diacritic [u-]. Unvalued probes have the form [uF:__] and search for a matching feature. Valued probes have the form [uF:value] and search for an unvalued matching feature. A probe can become a goal, after it has triggered its operation.

[cf. section §2.3.1 in chapter 2]

(ii) Agree is performed independently of valuation and leads to the erasure of the *u*-component of the probe ([uF] → [u̶F]). Agree can fail as far as valuation is concerned

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[5]The notion of *c-command* is used in syntax to refer to a specific syntactic relation: Node A c(onstituent)-commands node B iff the branching node most immediately dominating A also dominates B (Reinhart 1976).

(failed Agree).

[cf. section §2.3.1 in chapter 2]

(iii) Unvalued features lead to defective intervention (i.e., Agree stops).

[cf. section §2.3.1 in chapter 2]

(iv) Probes on a single heads are extrinsically ordered.

[cf. sections §2.4, §2.4.3 in chapter 2]

(v) All vs are phases.

[cf. sections §3.2.1.2, §3.2.1.3 in chapter 3]

(vi) v and v^* contain different features. In particular, v^* bears a probe for person.

[cf. section §3.2.1.2 in chapter 3]

(vii) Complex heads are "bags of features'": all the features on the subparts are simultaneously represented on the complex head.

[cf. section §5.7.4 in chapter 5]

(viii) Gender and number do not entail person, and vice versa.

[cf. section §3.2.1.2 in chapter 3]

(ix) Third person is a person.

[cf. section §3.2.1.2 in chapter 3]

(x) Reflexive clitics enter the derivation with unvalued features; reflexive clauses are transitive clauses.

[cf. sections §3.2.4.1, §3.3.2 in chapter 3]

(xi) Successive cyclic movement is triggered by edge features.

[cf. section §4.2.2 in chapter 4]

1.4 The proposal in a nutshell

1.4.1 Auxiliary selection is person-Agree

The main claim of this dissertation is that auxiliary selection is the result of Agree for the person feature. This allows to reduce auxiliary selection to the independently needed operation Agree and to unify argument-structure-driven splits and person-driven splits under the same mechanism. It also locates the problem of auxiliary selection completely in the syntax (and not below the selectional requirement of each verbs), making the grammar more simple, by exploiting independently needed functional heads (different types of v) and the basic operation Agree.

As already argued by D'Alessandro and Roberts (2010), the realization of the auxiliary takes place via lexical insertion in the morpho-phonology and is dependent on the features

manipulated by the syntax. I also follow the line of research proposed by Bjorkman (2011: 144): auxiliary selection depends on the presence or absence of additional featural information in the syntactic head that is realized by the perfect auxiliary. However, differently from Bjorkman (2011), I argue that this information is a person feature.

I propose that the perfect auxiliary realizes a functional head Perf (similarly to D'Alessandro and Roberts 2010; Bjorkman 2011) that selects a verbal phrase vP, introduces the perfect semantics, determines the morphological form of the lexical verb and can agree for person. Both HAVE and BE realize the syntactic head Perf. I adopt the standard assumption that HAVE is the most specific form, BE is default (Kayne 1993; D'Alessandro and Roberts 2010; Bjorkman 2011). The result of Agree is not spelled out as person inflection on the verb, as is the case for example for Agree in T (cf. subject-verb agreement: *she love-s*), but it rather determines the lexical choice of the auxiliary. The vocabulary entries are presented in (10) and must be intended as follows. As long as Agree on Perf has succeeded (i.e., Perf has copied a person feature, no matter which specific value), HAVE will be the chosen auxiliary. Anytime that Agree does not return any value, the less specific exponent BE must be chosen instead, in accordance with the Subset Principle.

(10)   a. $\sqrt{\text{HAVE}} \leftrightarrow \text{Perf}[\pi{:}\alpha]$
        b. $\sqrt{\text{BE}} \leftrightarrow \text{Perf}$ elsewhere

1.4.2 Nested Agree

The solution of long-standing problems, such as auxiliary selection, may shed light on more important questions, which constitute the background against which these problems become interesting from a scientific point of view. A central debate in linguistics is on the locality conditions of operations. This dissertation, via answering the question of auxiliary selection, addresses the problem of minimality for the operation Agree.

As I have pointed out above, previous analyses fail to give a successful account of auxiliary selection, since they use as the constraining factor either the presence of an external argument, or the type of argument structure, as determined by v. Instead, the data in (5) show that auxiliary selection in Italian depends on the features of the object. In transitive clauses, where there is a direct object, the auxiliary is HAVE. If either there is no object (unaccusative verbs), or the object is ϕ-defective (reflexive pronouns), the auxiliary suddenly switches to BE.[6] Thus, BE shows up every time that there is some kind of defectiveness in the structure: either v is defective and there is no accusative object (unaccusative verbs) or there is a featurally defective object (reflexive clitic pronoun).

Consequently, the head Perf must be sensitive both to the presence or absence of an object and to its ϕ-features. Hence, Perf must contain a person probe whose goal is the

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[6]In unaccusative clauses, the underlying object moves to the subject position. This is due to the fact that unaccusative v is defective (under the very standard assumption of a defective v that neither assigns accusative case, nor agrees with the object, Chomsky 2001), and is a phase (Legate 2003).

feature of the object, as it appears on v (after Agree between v and the object). Looking at the structure in (11), the goal for the probe [uπ] on Perf can only be the DP$_{sbj}$, given the minimality condition of Agree. In general, when two matching goals are available in the structure, the highest one should be selected, since it is the first one to be reached and it should be able to stop Agree.

(11)
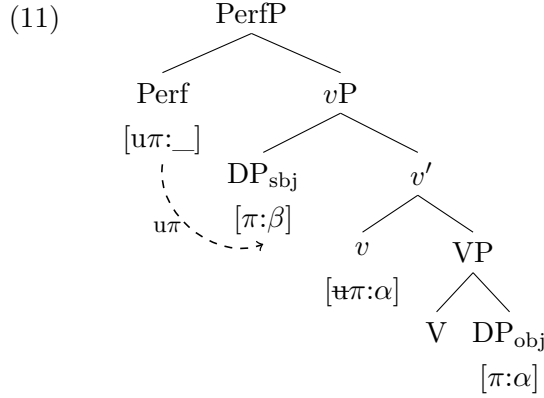
I said that the head Perf should Agree with the object (via v) across the subject because the features of the lower argument (reflexive direct or indirect object) influence the realization of the auxiliary, as shown in examples (5). As the structure (11) shows, this operation would result in an anti-minimality configuration. To solve this problem, I introduce the principle of *Nested Agree (NA)*. Nested Agree is a constraint on ordered operations that affects search domains. Its formulation is provided in (12).

(12)   *Nested Agree*
         Let F_1 and F_2 be two ordered probes on the same head H. The search space of F_1 is the c-command domain of H.

         (i)   *Maximize*: if the Agree operation A_1 for the feature F_1 has targeted the goal G, then the subsequent Agree operation A_2 for the feature F_2 must also target G.
         (ii) *No-backtracking*: If G is not a goal for F_2, the search space of F_2 is the c-command domain of G (not of H).

Given the assumption that the features on the same head are extrinsically ordered (Koizumi 1994; Sabel 1998; Heck and Müller 2006; Müller 2009; Georgi 2014), Nested Agree states that a probe initiating an operation after another probe located on the same head should pick out the same goal as the preceding probe. This is expressed by the *Maximize* condition. Thereafter, in case the probe is not satisfied yet, it must start its search exactly from the goal of the previous operation, without backtracking, as the *No-backtracking* condition prescribes. Nested Agree stems from the combination of already proposed syntactic principles. In particular, it can be derived by assuming (i) the Agree-Link theory (Arregi and Nevins 2012), with the additional idea that an Agree-Link between two heads can be

used for multiple probe-features, (ii) feature ordering, (iii) ban against backtracking, (iv) downward Agree. It also contributes to ongoing discussion on the conditions on Agree for multiple probes and on minimality.

As far as auxiliary selection is concerned, BE shows up whenever there is some kind of defectiveness. Translated into Agree, this means either failed Agree (Preminger 2014) or Agree with π-defective items. For Standard Italian, the features on Perf are ordered as in (13) and the derivation (for a transitive verb) is represented in (15) and (14).

(13)   Perf [uInfl:perf] $\succ$ [uπ:__]

(14)   Step 1: Agree for [uInfl:perf]   (15)   Step 2: Agree for [uπ:__]
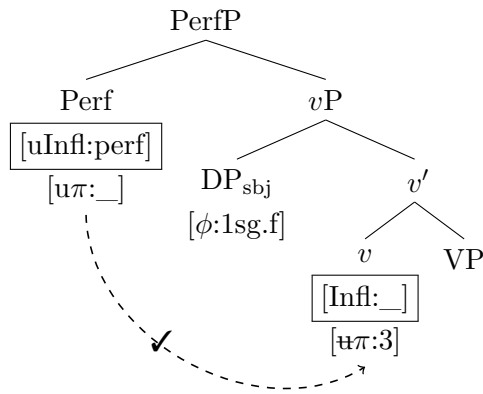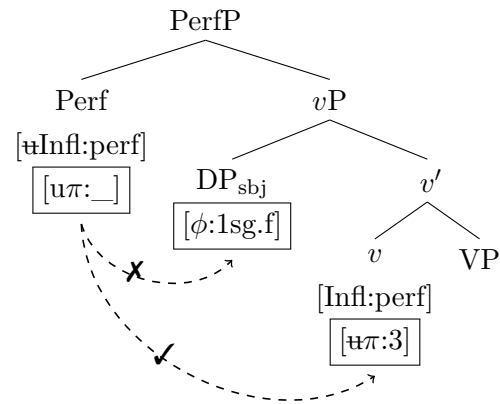
The first feature on Perf to be discharged is [uInfl:perf], as stated in (13). Its search space is the c-command domain of Perf. In (15), the [uInfl] feature on Perf checks the corresponding feature on v, which is then spelled out as a past participle (Adger 2003). The second feature is a probe for π. The search space of [uπ] is not the c-command domain of Perf. In fact, since Perf has already carried out another operation, the domain of a further operation triggered by Perf is dependent on the previous operation. Consequently, as a first step, Perf probes v for the π-feature, thereby skipping the subject, as represented in (14). If Agree does not succeed, then the search starts downwards from v: the search space of [uπ:__] is the command domain of v. The result is that Perf copies the information from v, "seeing" both the argument structure type (similar to D'Alessandro and Roberts's (2010) approach) and the features of the lower argument. This results in a cyclic Agree (Legate 2005) configuration, where Perf agrees with the direct object due to the mediation of v.

In Standard Italian, the allomorph HAVE (10-a) is inserted as long as Perf has succeeded in copying a person feature (as is the case in transitive argument structures). If v is defective, it leads to failed Agree. For example, in the case of reflexive clauses (5-b)–(5-c), the clitic *si* is featurally defective. This means that it enters the derivation with unvalued ϕ-features, which receive a value via binding (Reuland 2001). At the point when the person probe on v acts (before the insertion of the external argument because of the Strict

Cycle Condition), Agree on v fails because the goal still bears unvalued π-features. The failure of Agree on v determines the failure of Agree on Perf, which leads to the insertion of the default allomorph BE, as shown by the vocabulary entries in (10).

The analysis gives the expected results in all root clauses and in restructuring. In the latter, a special v_{restr}, which is independently needed to explain other behaviors of restructuring verbs (cf. previous accounts that merge the restructuring verb into a functional head, such as Cinque (2004)), connects the embedded v with Perf by having a double [Infl] feature.

(16) v_{restr} [uInfl:non-fin] $\succ$ [uπ:__] $\succ$ [Infl:__]

Both the optionality of the two auxiliaries and the interaction with clitic climbing derive from different sizes of the embedded complement, which determines different domain of Agree.[7]

A major consequence of this approach is that different orderings of features can account for language variation. In fact, the parametrization of the ordering of features results in the difference in auxiliary selection in Standard Italian and in the Southern dialects.

(17)   a.   Perf [uInfl:perf] $\succ$ [uπ:__] : π value from v Standard Italian
          b.   Perf [uπ:__] $\succ$ [uInfl:perf] : π value from DP$_{\text{sbj}}$ Southern dialects

In Italian (argument-structure-driven auxiliary selection), the first probe [uInfl] restricts the domain of the subsequent probe [uπ] to v and its sister, with the result that v is the only possible goal for Perf. In Ariellese (person-split auxiliary selection), [uπ] probes as first and its domain is the sister of Perf. In this system, the subject is the highest matching goal, independently of v.[8]

The novelty of Nested Agree with respect to other similar principles (such as *Maximize Matching Effects* Chomsky 2001: 15, *General Specificity Principle* Lahne 2012, *Multitasking* van Urk and Richards 2015: 132, *Economy condition on multiple probe satisfaction* Pesetsky 2019: 27) lies in the following aspects. First of all, Nested Agree is not specificity-driven, and this is a consequence of feature ordering. Therefore, NA can explain the case of unaccusatives, where the subject and v are equally specific (the subject bears a π-feature, v an Infl-feature). The example of unaccusative verbs already shows that NA is necessary to account for the data analyzed in this dissertation. The puzzle requires an update of the theory, which is realized by putting together in a new way other principles of syntactic theory. Secondly, NA is a new way to deal with intervention effects. As I have just shown, a potential intervener (the subject) lies outside the search domain of the probe ([uπ:__] on Perf), if its domain has been "reduced" by a previous operation ([uInfl:perf] on Perf).

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[7]Evidence for this claim (in the line with Wurmbrand's (2004) analysis) comes from some syntactic differences between the two variants with the two auxiliaries (passive embedded, perfect embedded, ellipsis, cleft, NPI).

[8]That auxiliary selection in Ariellese (and in general in Abruzzese) is due to Agree for person has already been proposed by D'Alessandro (2017b), but this idea has never been extended to Italian.

The above quoted principles are either subject to minimality (Maximize Matching Effects) or they are not (General Specificity Principle). Hence, they do not offer a way to treat minimality violation. NA is constrained by minimality, but the additional feature ordering assumption can account for antiminimality effects, which are found very often in natural languages. Finally, NA is not a transderivational principle as the above quoted principles are.

1.4.3 Participle agreement

As far as participle agreement is concerned, I argue that in Standard Italian it is licensed by unchecked A-features and not via movement, even though movement is the natural consequence of unchecked features (partly following Kayne 1989a; D'Alessandro and Roberts 2008; Belletti 2017). My analysis has the advantages of being compatible with the findings on auxiliary selection and of making use of an independently proposed mechanism, edge features (Chomsky 2001; Müller 2010). An edge feature is inserted on a phase head in order to derive successive cyclic movement of an unchecked feature out of the complement of the phase. The new proposal of this dissertation is that edge features are associated with a gender and number probe that targets the moving constituent (a clitic, the object of unaccusative verbs and so on). Morphological agreement spells out the result of the operation Agree for the features $\#$ and γ. Given that auxiliary selection depends on the person feature, whereas participle agreement targets the gender and number features, with the exclusion of the person feature, these two phenomena are independent, as already argued by many studies (Loporcaro 1998; Belletti 2005b; Legendre 2010). In this dissertation I show that they are independent but compatible because they target different features. I also explain why they tend to co-occur in particular combinations (cf. BE and overt participle agreement): they are both sensitive to featural defectiveness (the elsewhere form BE emerges in case of failed Agree and the edge feature is inserted on v when there is an unchecked feature in its c-command domain).

1.5 Overview of the dissertation

In this introduction, I have presented the main problem and the results of this dissertation. This thesis addresses the issue of auxiliary selection, which has not yet found a coherent explanation in the previous literature, neither for root clauses, nor for the more complex case of restructuring, nor in accordance with other phenomena, such as participle agreement, nor in comparison with other languages with different splits. My analysis aims at filling this gap, with the broader goal of investigating the algorithm of Agree, the syntactic tool that allows to account for these data. By exploring the conditions of Agree and showing the explanatory adequacy of this operation, this dissertation also contributes to the debate about Agree and its locality domain.

The main achievement of this work is the unification of argument-structure-based

auxiliary splits (Standard Italian) and person-based auxiliary splits (Southern dialects) under the tool of π-Agree. This analysis leads to a typology that includes different Italo-Romance varieties and other languages with or without auxiliary selection (for the former, French; for the latter, Spanish). More in general, another important conclusion is the reduction of an apparently unrelated phenomenon (auxiliary selection) to Agree. Finally, the empirical contribution concerns new data on restructuring verbs.

The structure of the dissertation is as follows. In chapter 2, I argue for the theoretical proposal of Nested Agree, which is necessary in order to derive the data of Standard Italian. I present the detailed derivation of the Italian data in chapter 3, as far as auxiliary selection is concerned. In chapter 4, I discuss the relevant issue of participle agreement and I propose an analysis that is compatible with the findings on auxiliary selection. Then, in chapter 5 I extend my proposal regarding auxiliary selection and participle agreement to the more complex cases of restructuring. Other languages are presented in chapter 6. In particular, I present the other main type of auxiliary selection (person-driven), but I also discuss some further cases of argument-structure-driven systems, and other restrictions and interactions. Moreover, I describe the distribution of participle agreement. In chapter 7, I conclude by summarizing the main findings of this dissertation and the remaining open questions.

2 Nested Agree

2.1 Auxiliary selection in Standard Italian

In Standard Italian, auxiliary selection, which is the alternation between the two allomorphs HAVE and BE for the perfect auxiliary, depends on the argument structure (Burzio 1986; Sorace 2000; McFadden 2007; Bjorkman 2011).[1] With transitive verbs, the auxiliary in the perfect tense is realized as HAVE (1-a), even in the case of clitic arguments (1-b). Intransitive verbs are located along a cline of unaccusativity that ranges between prototypical unergative verbs and prototypical unaccusative verbs. The former exhibit HAVE as the perfect auxiliary (1-c), wheres the latter class shows BE (1-d). In between there are different verbs that may combine with both auxiliaries (1-e). The choice can be influenced by various syntactic and semantic factors, which may increase the telicity of the predicate or change its Aktionsarkt and aspect (for example, the presence of PP adjuncts) (1-f,g).

(1)   a.   Teresa ha   lavato   la camicia.
            Teresa have.PRS.3SG wash.PRTC the shirt
            'Teresa has washed the shirt.'

       b.   Teresa l=ha   lavat-a.
            Teresa ACC.3SG.F=have.PRS.3SG wash.PRTC-SG.F
            'Teresa has washed her/it.'

       c.   I   poliziotti hanno   lavorato   fino all'alba.
            the policemen have.PRS.3PL work.PRTC until to.the dawn
            'The policemen worked until dawn.'   (Sorace 2000: 874)

       d.   Maria è   venut-a   alla   festa.
            Maria be.PRS.3SG come.PRTC-SG.F to.the party
            'Maria has come to the party.'   (Sorace 2000: 863)

       e.   La pianta è   fiorit-a   / ha   fiorito
            the plant be.PRS.3SG blossom.PRTC-SG.F / have.PRS.3SG blossom.PRTC
            due volte quest'anno.
            two times this year
            'The plant blossomed twice this year.'   (Sorace 2000: 865)

       f.   Maria ha   corso   / è   cors-a   velocemente.
            Maria have.PRS.3SG run.PRTC / be.PRS.3SG run.PRTC-SG.F fast
            'Maria has run fast'.   (Sorace 2000: 876)

       g.   Maria *ha   corso   / è   cors-a   in farmacia.
            Maria have.PRS.3SG run.PRTC / be.PRS.3SG run.PRTC-SG.F to pharmacy
            'Maria has run to the pharmacy'.   (Sorace 2000: 876)

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[1]As I said in the introduction, HAVE and BE with capital letters refer to the abstract morphemes corresponding to the root of the verbs *have* and *be*. The label HAVE stands for each possible occurrence of the verb 'to have'.

Crucially, the picture for transitive verbs is not so deterministic as example (1) shows. In particular, the auxiliary HAVE is only realized when the transitive or unergative verbs take canonical arguments. If the arguments are reflexive pronouns or impersonal pronouns, the auxiliary suddenly becomes BE, even though the verb is transitive or unergative in absence of reflexive/impersonal arguments. The reflexive pronoun can be merged either as the direct object (2-a) or as a dative benefactive argument (2-b,c). If the reflexive pronoun is not the clitic *si*, but rather the reflexive phrase SE STESS-O/A/I/E, then the auxiliary is again HAVE (2-d,e). The same alternation depending on the reflexive pronoun also affects anticausative verbs (2-f,g).

(2)   a.   Teresa si=è   lavat-a.
           Teresa REFL.ACC.3SG=be.PRS.3SG wash.PRTC-SG.F
           'Teresa washed herself.'

           b.   Teresa si=è   lavat-a   la camicia.
           Teresa REFL.DAT.3SG=be.PRS.3SG wash.PRTC-SG.F the shirt
           'Teresa washed her shirt (for herself).'

           c.   Teresa si=è   rispost-a.
           Teresa REFL.DAT.3SG=be.PRS.3SG answer.PRTC-SG.F
           'Teresa has answered herself.'

           d.   Teresa ha   lavato   se   stessa.
           Teresa have.PRS.3SG wash.PRTC REFL.ACC.3SG self
           'Teresa has washed herself.'

           e.   Teresa ha   lavato   la camicia per se   stessa.
           Teresa have.PRS.3SG wash.PRTC the shirt   for REFL.ACC.3SG self
           'Teresa has washed the shirt for herself.'

           f.   Le camicie si=sono   asciugat-e   al   sole.
           the shirts   REFL.ACC.3SG=be.PRS.3PL dry.PRTC-PL.F at.the sun
           'The shirts dried in the sun.'   (Sorace 2000: 872)

           g.   Le camicie hanno   asciugato al   sole.
           the shirts   have.PRS.3PL dry.PRTC at.the sun
           'The shirts dried in the sun.'   (Sorace 2000: 872)

In the case of impersonal clauses, the subject is the impersonal pronoun *si*. The predicate can be transitive (3-a,b), unergative (3-c), or unaccusative (3-d). The perfect auxiliary is invariably BE.

(3)   a.   Ieri   a casa mia si=sono   mangiat-i   gli spaghetti.
           yesterday at home my IMPERS=be.PRS.3PL eat.PRTC-M.PL the spaghetti
           'Yesterday at my home one has eaten the spaghetti.'

           b.   Ieri   a casa mia si=è   mangiato spaghetti.
           yesterday at home my IMPERS=be.PRS.3SG eat.PRTC spaghetti
           'Yesterday at my home one has eaten spaghetti.'

           c.   Ieri   si=è   lavorato   fino all'alba.
           yesterday IMPERS=be.PRS.3SG work.PRTC until to.the dawn
           'Yesterday one has worked until dawn.'

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d. Ieri   si=è   venut-i   alla   festa.
yesterday IMPERS=be.PRS.3SG come.PRTC-PL.M to.the party
'Yesterday one has come to the party.'

The Table 2.1 summarizes the distribution of HAVE and BE in root clauses in Standard Italian.

	verb	argument	Auxiliary
(1-a), (1-b), (2-d), (2-e)	transitive		HAVE
(2-a)	transitive	direct object: reflexive clitic	BE
(2-b)	transitive	indirect object: reflexive clitic	BE
(3-a), (3-b)	transitive	external argument: impersonal clitic	BE
(1-c)	unergative		HAVE
(2-c)	unergative	indirect object: reflexive clitic	BE
(3-c)	unergative	external argument: impersonal clitic	BE
(1-d)	unaccusative		BE
(3-d)	unaccusative	internal argument: impersonal clitic	BE

Table 2.1: Auxiliary selection in Italian.

In addition to the core data summarized in Table 2.1, unergative and unaccusative verbs may vary in their auxiliary (1-e), (1-f), (1-g). However, this variation is still influenced by the presence of a reflexive pronoun (2-f), (2-g). I provide the detailed analysis of the data presented in this section in chapter 3. In this chapter, I present my proposal for auxiliary selection. The analysis is couched in Minimalism (Chomsky 1995, 2000, 2001). The relevant point for the discussion of the proposal is the fact that in argument structure-driven auxiliary selection not only the type of argument structure counts, but also the features of the arguments. This leads to the main claim of this dissertation: auxiliary selection is an instance of person agreement.

2.2 Auxiliary selection is π-Agree

In the previous section §2.1, I have argued that in Standard Italian the choice of the auxiliary depends both on the presence or absence of a direct object (transitive versus unaccusative verbs), and on the features of the object (canonical transitive versus reflexive transitive verbs). This means that the morpho-phonological realization of the perfect auxiliary depends on the morpho-syntactic features of the object expressed on the functional head that is realized by the auxiliary. I repeat here again the relevant data. Example (4-a) shows that the auxiliary of a transitive verb is HAVE, but if the object is the reflexive clitic *si*, then the auxiliary suddenly switches to BE (4-b). In addition, the auxiliary of an unaccusative verb is BE (4-c).

(4)   a.   Teresa ha   lavato   la camicia.
Teresa have.PRS.3SG wash.PRTC the shirt
'Teresa has washed the shirt.'

    b.   Teresa si=è   lavat-a.
         Teresa REFL.ACC.3SG.F=be.PRS.3SG wash.PRTC-SG.F
         'Teresa has washed herself.'

    c.   Teresa è   venut-a   alla   festa.
         Teresa be.PRS.3SG come.PRTC-SG.F to.the party
         'Teresa has come to the party.'

The auxiliary BE shows up both in the case of unaccusative structures and in the case of a reflexive object or an impersonal argument. In the former, the features of the object are not represented on v. Following the standard assumption that unaccusative v is defective (Chomsky 2001), it does not bear a ϕ-probe. In the latter, the clitic pronouns can be represented as featureally-defective, since they acquire their feature values via binding by another argument. Hence, in both cases the emergence of BE is caused by some kind of featural defectiveness in the syntactic structure.

The necessary conclusion for auxiliary selection is as follows. The featural information of the arguments must be taken into account not only in grammars where auxiliary selection is person-driven, but even in grammars where it is argument structure-driven, as in Standard Italian. In particular, the crucial factor for the morpho-phonological realization of the perfect auxiliary is the featural specification on the perfect head after the operation of person (π) Agree. In the Minimalist Program (Chomsky 1995, 2000, 2001), the operation that transfers information along the syntactic spine is Agree. I propose that the head Perf, which is the locus of insertion of the perfect auxiliary, is a functional head that selects for a vP and it is selected by T (D'Alessandro and Roberts 2010; Bjorkman 2011). The information that is located on v (unaccusative v: no π-feature, transitive v: valued/unvalued π) can be copied via Agree on the head Perf, which is spelled out by the auxiliary. Therefore, I argue that auxiliary selection is the result of Agree for person.

The two verbal roots HAVE and BE realize the same syntactic functional head Perf and are in competition for vocabulary insertion. The auxiliary split results from the availability of two possible allomorphs in the vocabulary inventory of Standard Italian for the morpho-syntactic bundle of features in Perf. Thus, auxiliary selection is a matter of vocabulary insertion. This means that the syntactic derivation proposed here should be available for each language (perhaps subject to different parametrization for the featural specification of the probe). Languages with a single perfect auxiliary (such as English, Spanish) have only a single lexical entry at their disposal. Languages with split auxiliary selection have at their disposal a rich system of vocabulary entries: different allomorphs realize different outputs of syntax. This consideration is in line with the idea that language variation should be reduced to variability in the morpho-phonological features of the lexicon (Chomsky 1995: 204,216).

As already discussed in the introduction, previous analyses cannot account for the exact distribution of HAVE and BE because they consider either the external argument alone, as in Bjorkman (2011), or the argument structure as encoded by v, as D'Alessandro

and Roberts (2010) do. In fact, I have just highlighted that the determining factor for auxiliary selection in Standard Italian is both the argument structure of the verb and the features of the arguments. Analyses based on constraint competitions as Legendre's (2007) make use of lexico-aspectual constraints. These may explain how different verbs pattern together as far as the perfect auxiliary is concerned, but they do not offer a simple, technical explanation that is based on the syntactic structure and can be adopted for both argument structure-driven selection and person-based selection. Finally, other analyses such as Kayne (1993); Cocchi (1995) are based on theoretical assumptions that cannot be accepted anymore.

2.3 Setting the stage

2.3.1 Agree

In the Minimalist Program, grammar is equipped only with two core operations: *Merge* (further distinguished into external and internal Merge) and *Agree*. Agree is an operation that establishes a relation between a syntactic head α and a feature F in some restricted search space (Chomsky 2000: 101). Agree is initiated by a type of feature called *probe*, conventionally identified by the prefix *u-*, and it targets another feature called *goal*, which stands in a local relationship with the goal.[2]

Agree is constrained by different conditions. Firstly, it is subject to a *matching condition*. Agree happens under feature identity: the two involved features must be of the same type (Chomsky 2000: 122). A second aspect is the *interpretability condition*. Agree is an operation that leads to the elimination of uninterpretable features from syntactic heads for interface reasons (Chomsky 2000: 122). The probe is an uninterpretable instance of a feature. The relevant goal is a feature of the same type, but interpretable.

Importantly, in this dissertation I do not assume a model of Agree where interpretability coincides with valuation, and probes are simply unvalued features (Chomsky 2001: 5). In contrast, I stick to the original definition of Agree proposed by Chomsky (2000): being a probe means being uninterpretable, but not necessarily unvalued. Hence, I assume that uninterpretability is unrelated to valuation. I follow here Pesetsky and Torrego (2007) in splitting the conditions of interpretability and valuation: valuation and interpretability are independent conditions.[3] I consider a probe to be any feature of the form *uF*, where the prefix *u-* indicates the ability to start an Agree search. With the term *uninterpretable*, I do not refer to the process of interpretation at the interfaces, but rather to the activation of a feature in the derivation. The uninterpretability of a feature, indicated by the diacritic

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[2]Probe and goal are instances of features. However, in the present discussion I use the terms in two different ways. I mean both the features themselves and the position they occupy (meaning the head that bears them). I distinguish the two meanings when it is relevant to do so, for example when a single head bears more than one probe.

[3]Note that Pesetsky and Torrego (2007) treat probes as interpretable, unvalued features. In contrast, I think that probes can be either valued or unvalued. The status of "probe" is linked to its (syntactic, rather than semantic) uninterpretability, as in Chomsky (2000) and differently from Pesetsky and Torrego (2007).

[u-], means that the feature can trigger an operation and has not done it yet. Hence, uninterpretability is not a semantic property, but rather the signal that the derivation is not completed yet. The "u-property" is deleted when the operation triggered by that feature is carried out, with the result that so-called uninterpretability is erased from the structure. The probe itself can now serve as a goal for further probes and the constituent that bears that feature can undergo Spell-out, when the phase is completed.

As far as valuation is concerned, the probe can be either unvalued or already valued. In the former case, it can acquire a value from the goal, if this is valued. Note that successful Agree does not necessarily means successful valuation, since the goal itself can be unvalued, thereby not supplying any value for the probe. This also means that an unvalued matching feature is a suitable goal for a probe, although it cannot value the probe. Turning to the second scenario, if the probe is already valued, then successful Agree consists of finding a matching feature of the same type, which can receive a value from the probe in case it is unvalued.

Crucially, Agree always results in the elimination of the *u*-component, which would otherwise lead to a crash at the interface. I assume that uninterpretability is eliminated from the structure even when the probe does not found any matching goal. The crucial point is that Agree has been carried out, no matter with which result in valuation. Hence, Agree can fail with respect to valuation, as proposed by Béjar (2003); Preminger (2014). However, even if valuation fails, the derivation is well-formed, as long as Agree has operated (once the domain of Agree is exhausted, meaning that the probe has scanned the whole search space). The result of Agree is always as in (5).

(5)   Agree: [uF] →[u̶F]

This means that the primary aim of Agree is not valuation, but it is instead the "erasure of uninterpretable features of probe and goal" (Chomsky 2000: 122). The operation of Agree represented in (5) can result in these different configurations. For an unvalued probe [uF:_], Agree leads either to valuation if the goal is valued, or to lack of valuation if the goal is unvalued or if there is no matching goal in the structure (I refer to this case as to *failed Agree* (Preminger 2014), although it is actually a case of failed valuation). For a valued probe [uF:α], Agree does not change any feature value if the goal is already valued or if there is no matching goal in the structure. Finally, valuation of the goal is the result when the goal is unvalued. All scenarios are represented in (6).

(6)   a.   Agree for a probe [uF:_]
            (i)   if goal [F:α], then probe becomes [u̶F:α]
            (ii)   if goal [F:_], then probe becomes [u̶F:_]
            (iii) if no goal, then probe becomes [u̶F:_]
       b.   Agree for a probe [uF:α]
            (i)   if goal [F:α], then probe becomes [u̶F:α]

(ii) if goal [F:β], then probe becomes [u̶F:α][4]

(iii) if goal [F:__], then probe becomes [u̶F:α] and goal [F:α]

(iv) if no goal, then probe becomes [u̶F:α]

Agree is also subject to a *locality condition* that implies the *directional condition* on c-command and the *minimality condition.* The former states that the probe is allowed to look only in its c-command domain. This implies that only *downward Agree* is possible (*pace* Zeijlstra (2012)). I take this to follow from the bottom-up nature of the derivation. As soon as a new head is merged, it is the highest one in the structure and it c-commands the whole search domain. This configuration, in addition to the *Earliness Principle* (Pesetsky 1989), makes downward Agree the natural possibility.[5] I also exclude cyclic upward expansion of Agree (Béjar and Rezac 2009). If the aim of Agree is the erasure of uninterpretable features and not their valuation, there is no need to expand the domain upwards when the probe has not find a matching goal.

According to the minimality condition, in case of more than one matching goal in the c-command domain the closest goal to the probe (i.e., the highest in the structure) should be chosen. If we have a probe P, its c-command domain is its sister $S(P)$. A matching feature G is the closest one to P if in $S(P)$ there is no J matching P such that G is in $S(J)$ (Chomsky 2000: 122). The minimality condition has been formalized in many different ways, for example with the principle of *Relativized Minimality* (Rizzi 1990) and the *Minimal Link Condition (MLC)* (Fanselow 1991; Ferguson and Groat 1994; Chomsky 1995, 2001).

(7) *Minimal Link Condition* (Chomsky 2001: 27)
An Agree operation involving the probe α and the goal β can only apply if there is no δ such that (i) δ c-commands β (ii) δ is c-commanded by α but not by β, (iii) δ bears the relevant feature.

To sum up, the operation Agree is subject to the following conditions.

(8) a. Interpretability condition: a probe is an uninterpretable feature that must be checked with a corresponding interpretable feature.

b. Matching condition: matching is feature identity.

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[4]As we will see in section §2.4.1, a type of valued probe is [uInfl:perf] on the head Perf. Another example is case assignment, if it is considered as an instance of agreement where the case assigner is a valued probe. Under the assumption that case assignment is not subject to defective intervention (cf. section §2.6, and in particular section §2.6.1), a valued matching feature should be invisible for a valued probe: for a probe [uF:α], if the goal is [F:β]/[Fα], then probe remains [uF:α] and keeps on searching until its domain is exhausted. For instance, the valued probe [ucase:nom] should be able to skip a DP that bears a dative case, and continue its search for an *unvalued* feature. If this is true, the two Agree operations triggered by valued and unvalued probes are indeed different: an unvalued probe looks for a matching feature, whereas a valued probe looks for an *unvalued* matching feature. I leave this issue for further research.

[5]*Earliness Principle*: uninterpretable features must be marked for deletion as early as possible (Pesetsky 1989).

    c.   Locality condition: locality reduces to "closest c-command".

        (i)   Directional condition: the domain of Agree is the c-command domain of the probe.

        (ii)   Minimality condition: the goal must be the closest, c-commanded, matching feature.

In my approach, the interpretability condition (8-a) can be restated as follows.

(9)   Interpretability condition (revised): a probe is a feature (valued or unvalued) that can initiate an operation. The activity of a feature is signaled by the diacritic [u-]. This must be erased before the head bearing the probe is sent to the interfaces.

I also assume that Agree can fail to find a matching goal without causing a crash in the derivation, but only leading to a failure in valuation.

2.3.2 A problem of minimality

We have just seen that Agree is a search operation that requires feature matching, c-command and locality. As I have already explained in the discussion of examples (4-a) and (4-b), it is necessary that Perf (a functional head located between T and v (D'Alessandro and Roberts 2010; Bjorkman 2011)) accesses the information about the π-feature of the object from v. However, this information located on v is not local to the head Perf. For the π-probe on the perfect projection, at least the subject should be closer than v. This means that when Perf probes for [uπ:__], it should skip over the subject and target the features of the object as they appear on v, as (10) shows.

(10)   Search of Perf for π-features
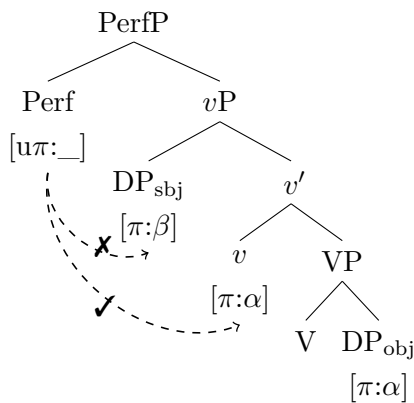
However, this result should be impossible, since it creates a non-local Agree configuration. In fact, Agree between Perf and v for [π] violates the minimality condition, represented in the well-formed derivation in (11).

(11)   Minimality configuration
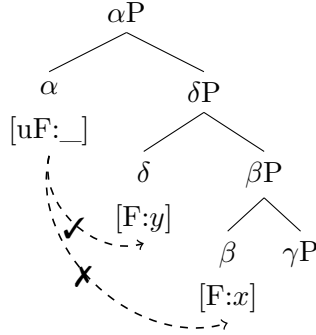
Hence, auxiliary selection in Standard Italian poses a problem of minimality. The features of the object on v cannot be copied onto Perf, since there is a competitor that is closer to Perf than the object (namely, the subject).

Minimality is a computational requirement that reduces the search space up to the first matching goal. Although minimality seems to play a role in many cases, it has already been recognized that there exist many scenarios of anti-minimality, such as order-preserving movement and anti-superiority effects (Richards 1997; Starke 2001; Lahne 2012). These data are generally accounted for by resorting to other principles or operations such as *Tucking-in* (Mulders 1997; Richards 1997, 2001) or *Equidistance* (Chomsky 2001).[6]

Crucially, Tucking-in constitutes a solution against anti-minimality movement paths but it is not related to Agree. If applied to Agree, it could eventually give rise to Multiple Agree with both goals (including the non-local goal), rather than to agreement with the lower goal, as required in (10). In this scenario, where the features of both the object and the subject are simultaneously represented on Perf, one would need an additional system of indices in order to distinguish the different sources of the features. Moreover, in this dissertation I assume strict cyclicity as a principle of grammar, as prescribed by the Strict Cycle Condition.

(12)   *Strict Cycle Condition (SCC)* (Chomsky 1973: 243)
         Within the current cyclic domain α, no operation may exclusively affect positions within another cyclic domain β that is dominated by α.

The principle of Tucking-in violates the strong interpretation of the Strict Cycle Condition

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[6]*Tucking-in* (Richards 2001): If two items α and β are attracted by the same head H and α asymmetrically c-commands β, (a) attraction proceeds in the order $\alpha > \beta$ (as represented in (i-a)) and (b) β tucks in below α (as shown in (i-b)).

(i)   [H .... [α [β]]]
        a.   [α_i H .... [t_i [β]]]
        b.   [α_i β_j H .... [t_i [t_j]]]

Equidistance (Chomsky 2001: 27): Terms of the edge of HP are equidistant from probe P.

(for a detailed discussion of this principle, cf. sections §4.3.1, §4.3.4.2 in chapter 4).

Equidistance does not help here either, since it is defined for multiple specifiers and not for a head and its specifier (as the DP_{sbj} and v are). A principle that favors the head with respect to the specifier is the *A-over-A condition* (Chomsky 1964; Hornstein 2009; Roberts 2010). However, this principle would give here the unwelcome result that Perf ends up probing the DP in Spec,v when v is not a suitable goal (i.e., in the case of unaccusative predicates). In section §2.4.4, I discuss in details why the A-over-A solution does not work for the problem of auxiliary selection.

What is important at this point is the syntactic configuration that I am discussing: in Standard Italian Perf *always* skips the subject DP and carries out Agree with v. In the next section, I give an alternative way to deal with this minimality violation. I introduce the principle of *Nested Agree*, which follows from the combination of other existing principles of syntactic theory. With the tool of Nested Agree, I offer in chapter 3 an explicit and effective analysis of auxiliary selection in Standard Italian.

2.4 Nested Agree

The main theoretical contribution of this dissertation consists of a new principle on subsequent instances of Agree. I call this condition *Nested Agree*. Nested Agree, defined in (13), restricts the search space of a probe on a head depending on previous operations carried out by the same head.

(13) *Nested Agree*
Let F_1 and F_2 be two ordered probes on the same head H. The search space of F_1 is the c-command domain of H.

  (i) *Maximize*: if the Agree operation A_1 for the feature F_1 has targeted the goal G, then the subsequent Agree operation A_2 for the feature F_2 must also target G.

  (ii) *No-backtracking*: If G is not a matching goal for F_2, the search space of F_2 is the c-command domain of G (not of H).

Nested Agree prescribes that a probe initiating an operation after another probe located on the same head should pick out the same goal as the preceding probe. If the probe does not find a value, then it must search the sister of the current node, instead of its sister. Let us now in details at the definition in (13).

The premise in (13) states the background assumption that if a head triggers more than one operation, then the triggering features on the head are extrinsically ordered (Koizumi 1994; Sabel 1998; Heck and Müller 2006; Müller 2009; Georgi 2014). It also clarifies that the domain of Agree is the structure that is c-commanded by the probe (i.e., its sister). In this context, if two (or more) Agree operations are triggered by the same head, then they should target the same goal. This means that if a head undergoes more than one search

operation, then the second search algorithm starts from the last stored position in the tree returned by the first operation, and so on. This requirement is stated by the condition in (13)-(i), which I call the *Maximize* condition. If the last stored position cannot satisfy the probe because the matching condition of Agree is not met, then the probe starts its search exactly from this position, as established by (13)-(ii), which I call the *No-backtracking* condition.[7] In other words, a probe cannot go back to already skipped goals, if these have been bypassed by another probe located on the same head. The reason lies in the fact that the probe has already reached a lower position than the syntactic position from which the search originates. Once the probe has arrived to this position, it cannot backtrack.

In case the first operation has failed to return a result, Nested Agree cannot apply to the following operation, since there is no previous goal to check. Hence, the search domain of this second probe is simply the sister of the probe.

I represent the Nested Agree configuration in the following trees. In (14) and (15) we have a structure where the *Maximize* condition leads to successful Agree.

(14) Agree for $[uF_1:\_] \rightarrow [\text{u}F_1:x]$ from β (15) Agree for $[uF_2:\_] \rightarrow [\text{u}F_2:y]$ from β
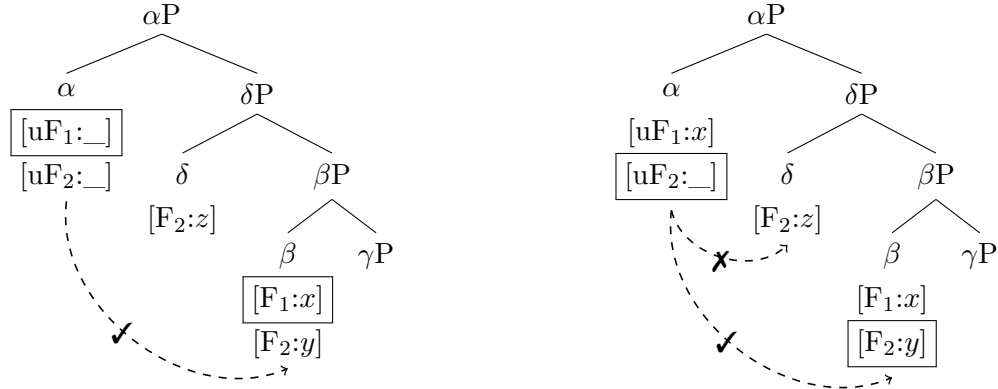
If the features $[F_1]$, $[F_2]$ are ordered on the head α, the search space of the first one to be discharged is the whole c-command domain. $[F_1]$ targets the highest c-commanded matching goal, as the tree (14) shows. The second operation, triggered by $[F_2]$, is subject to Nested Agree, since it is preceded by another operation on the same head. Thus, $[F_2]$ is characterized by a reduced search space: its search starts where the previous operation has stopped. Within its domain, $[F_2]$ targets the highest c-commanded matching goal, as (15) illustrates. In the tree in (15), this is a matching goal. When this is not the case, the search proceeds downward from here. I show in trees (16) and (17) the case where the

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[7]The *No-backtracking* condition of Nested Agree might remind the reader of an anti-locality principle (Abels 2003, 2012): the second operation cannot target the local goal, but instead it must involve the non-local one. However, I do not consider Nested Agree as an anti-locality principle for two reasons. Firstly, the first Agree operation obeys locality, whereas the second operation would be subject to anti-locality. Since both are Agree operations, we should conclude that Agree may be subject either to locality or to the specular principle of anti-locality, which is an unwanted contradiction. Secondly, different goals can be anti-local to different extents. The target of the second operation is not the most anti-local goal (i.e., the lower possible goal), but rather the "highest anti-local" goal. This requires some technical implementations and, more importantly, hides a shadow of locality in the anti-locality condition, falling again in a sort of contradiction.

probe cannot be satisfied by the previous goal and starts a new search within the sister of the current node, according to the No-backtracking condition.

(16) Agree for $[uF_1:\_] \rightarrow [\text{u}F_1:x]$ from β (17) Agree for $[uF_2:\_] \rightarrow [\text{u}F_2:y]$ from γ
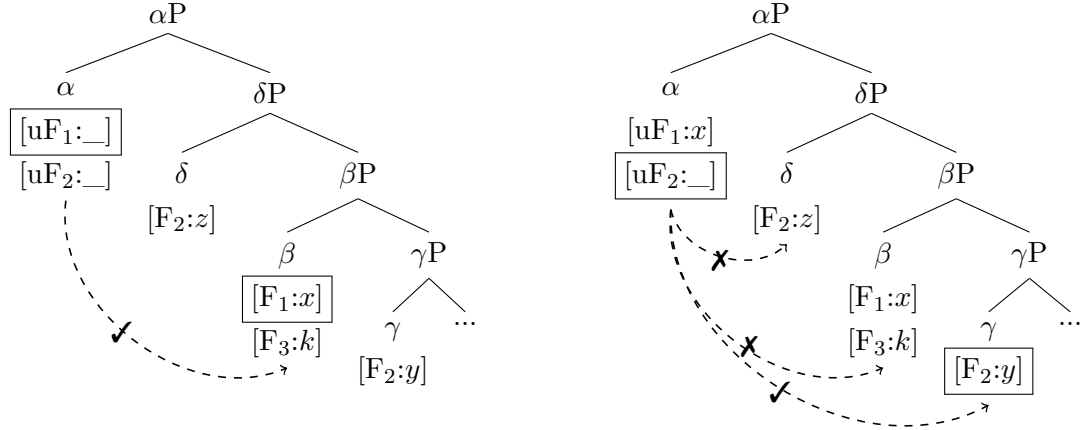
In the tree (17), the goal of the previous operation is not a matching goal for the present probe,since it does not bear the feature $[F_2]$. Consequently, the probe goes on downwards without backtracking, until it finds a relevant goal (on the head γ in (17)), or until its domain is exhausted.

Nested Agree allows to treat minimality violations under a new perspective. In fact, as tree (15) shows, the minimality condition can be circumvented if the target of Agree β is an item that has already been involved in an Agree relation with the probe α, even though δ intervenes. Despite its more embedded position, $[F_2]$ on β is actually the closest possible goal for $[F_2]$ on α. In fact, δ lies outside the locality domain of $[F_2]$, since its domain has been "relativized" by the previous operation $[F_1]$.[8] The relations represented in trees (16) and (17) are all local, but the sequence of operations has produced a representation in which locality is not visible anymore.[9] Hence, Nested Agree causes the gradual reduction of the search domain for the features located on the same syntactic position after each operation is carried out: Agree domains are dynamic and interdependent. Interestingly, Nested Agree is a way of reducing the search space for syntactic dependencies, exactly as minimality-based constraints such as the MLC are.[10]

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[8]Intuitively, Nested Agree could also remind of the *Smuggling* operation (Collins 2005b,a), but without movement. In a smuggling derivation, the external argument is skipped by moving everything to a higher position, so that the object is accessible instead of the external argument. A previous operation creates the context for the success of the second operation. In a similar way, Nested Agree exploits a previous operation involving a lower position in order to make this lower position accessible over the higher position (i.e., the object is accessible instead of the subject).

[9]Cf. Chomsky (1995: 205) for a similar comment about syntactic relations in general: "viewed derivationally, computation typically involves simple steps expressible in terms of natural relations and properties, with the context that makes them natural "wiped out" by later operations, hence not visible in the representations to which the derivation converges. Thus, in syntax, crucial relations are typically local, but a sequence of operations may yield a representation in which the locality is obscured".

[10]As we will see in section §2.5.2, the effect that Nested Agree has with respect to the Minimal Link Condition seems to be related to the *Principle of Minimal Compliance* (Richards 1998), which allows a violation of a constraint for a given dependency, as long as this constraint has been satisfied by another

Note that Nested Agree is also different from *featural relativized minimality* (Rizzi 1990): intervention is not only tied to the featural specification of the involved items, but also to the order of operations they are involved in. It is not the search operation that is restricted to a specific feature, but it is rather the domain of the operation Agree itself that is restricted. Under this idea, intervention is not caused by a feature, but rather by the order of operations.

The principle of Nested Agree stems from the combination of other principles and assumptions that have already independently been proposed. In particular, it can be reformulated within the *Agree-Link* theory (Arregi and Nevins 2012), with the further assumption that an Agree-Link can and must be reused. In addition, it shows some similarities with principles such as *Maximize Matching Effects* (Chomsky 2001: 15), *Multitasking* (van Urk and Richards 2015: 132), *Economy condition on multiple probe satisfaction* (Pesetsky 2019: 28). The main difference with these principles is due to the assumption of feature ordering, which provides an additional focus on minimality. I will discuss the place of Nested Agree in the theory in the course of this chapter, and in particular in section §2.5.

2.4.1 Application of Nested Agree to Perf

Coming back to the present case, I argue that Perf bears an [Infl] feature and a π-probe. The [Infl] feature is a probe that needs to be checked against a feature of the same type, found on v. The Agree operation triggered by [uInfl:perf] causes v to be realized as a past participle in the morpho-phonology (Adger 2003). In Standard Italian, these features are ordered as follows.

(18)   Perf: [uInfl:perf] $\succ$ [uπ:__]

The structure of the derivation, where Nested Agree operates, is shown in (19) and (20). When Perf is merged, the [uInfl] feature checks the corresponding features on v, which is the closest matching goal, as represented in (19). After this operation, the π-probe on Perf starts its search. Crucially, now Nested Agree is an active constraint because there has been a previous operation carried out by Perf, which has given as a result a feature on the head v. As a first step, Perf probes v for the π-feature, thereby skipping the subject, as (20) shows. If v contains a matching feature (as is the case for transitive verbs), no new search has to be started: Agree stops and returns the same head for both probes (for each

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relevant dependency. In this particular case, as long as the first Agree-dependency has respected the MLC, the second one, applying on the same "relevant path", does not need to respect the MLC anymore. The Principle of Minimal Compliance and Nested Agree are, however, very different. Even though in the case of auxiliary selection Nested Agree has the effect of allowing for a subsequent non-local Agree relation, the rationale behind Nested Agree is not the regulation of any other syntactic constraint. Moreover, the NA-configuration and the PMC-configuration show at least another difference. The PMC usually applies to two different goal-heads (which are related to the same probe-head). In the case of NA, however, there are only one goal-head and one probe-head: the alleged intervener is not visible at all for the purpose of the second operation.

probe, the relevant goal). If Agree does not succeed (as is the case for unaccusative verbs, where v does not contain any π-value), then the search continues downward from v: the search space of [uπ:__] is the c-command domain of v.

(19)   Step 1: [uInfl:perf] $\rightarrow$ [u̶Infl:perf]   (20)   Step 2: [uπ:__] $\rightarrow$ [u̶π:3sg.f]
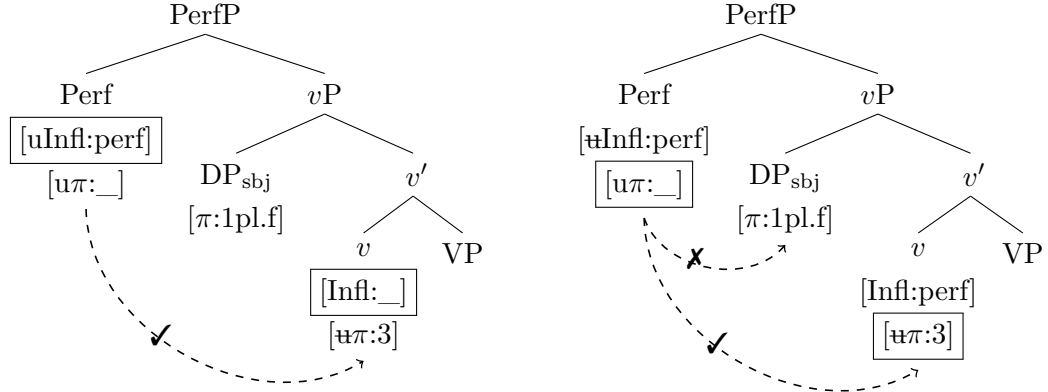
As a result, Perf probes for π-features either v or anything below (in accordance with the *Phase Impenetrability Condition*), instead of the more local DP$_{\text{sbj}}$.[11] In this way, Perf copies the information from v, "seeing" both the argument structure type (similarly to D'Alessandro and Roberts 2010) and the features of the argument, (which could be defective, leading in that case to failed Agree).

The vocabulary entries for auxiliary selection in Standard Italian are as follows (21).

(21)   a. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi:\alpha]$
        b. $/\sqrt{\text{BE}}/ \leftrightarrow \text{Perf elsewhere}$

The most specific allomorph HAVE is inserted whenever Agree has copied a person value on Perf, whereas BE is inserted either if Agree has failed or if the goal is defective as far as the person feature is concerned. For details, cf. chapter 3.

It is noteworthy that this analysis of auxiliary selection as Agree between Perf and the object (via v) shares some similarities with the proposal of *cyclic Agree*, a type of long distance agreement (Legate 2005). In cyclic Agree, Agree can apply in an apparently non-local way if it operates in a cyclic fashion, by checking features on every intervening phasal head. For instance, in case of a postverbal nominative object, the head T can agree with the object via mediation of v, due to cyclic Agree. The issue of auxiliary selection accounted for by this dissertation resembles this cyclic Agree scenario. The features of the object, which are otherwise inaccessible for Perf because of the Phase Impenetrability Condition, are copied first on v via Agree, then from v to Perf via another Agree operation (and in particular, Perf reaches v because of Nested Agree).

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[11]*Phase Impenetrability Condition* (Chomsky 2000: 108, Chomsky 2001: 13): The domain of a head X of a phase XP is not accessible to operations outside XP; only X and its edge are accessible to such operations.

2.4.2 Economy of the computation

Within the Minimalist Program, the grammar is an efficient computational system, organized by principles that should be simple in their operative implementation. In an operation such as Agree, which requires a search space, the computational complexity increases while the search proceeds. This increasing complexity may be reduced by some devices. Phases are one of such tools of computational organization (Chomsky 2001). As the syntactic structure gradually grows bottom-up, chunks of already constructed structure, i.e. phase domains, are shifted to the interface and then to other modules, in order to reduce the working memory and the derivational complexity of syntax.

Nested Agree is a way of reducing the search space in the case of ordered operations. The search domain of an "independent" Agree operation (i.e., triggered by a single probe on a head) is the entire c-command domain of the probe. The operation gives as a result either a certain value for a certain feature (that corresponds to a position in the tree), or nothing if there is no matching goal in the c-command structure. Since the result of Agree (i.e., the highest matching feature in the c-command domain) occupies a structural position in the tree, a certain amount of "search engine" is involved in order to reach this goal from the position of the probe. If a second operation is carried out from the same structural position, whose search domain would be identical to the previous one, the last result can be now used as a variable. The domain of the second operation is "updated" by using the result of the previous operation.

step	position	initial status	final status
0	head P	A_1 <$[uF_1:\_]$, domain S(P)> $\succ$ A_2 <$[uF_2:\_]$, domain S(P)>	apply A_1 in S(P)
1	head G	$[uF_1:\_]$ $\rightarrow$ $[\text{u}F_1:x]$ in head **G**	apply A_2 in **S(G)**
2	head **G**	$[uF_2:\_]$ $\rightarrow$ $[\text{u}F_2:y]$ in head G	go back to P
3	head P	$[\text{u}F_1:x]$, $[\text{u}F_2:y]$	

Table 2.2: Algorithm of Nested Agree.

In Table 2.2, A_1 stands for the first Agree operation initiated by the feature $[uF_1:\_]$, A_2 for the second one initiated by $[uF_2:\_]$. P is the head hosting the features that trigger the operations, while G is another head in the c-command domain of P. As the table shows, Nested Agree causes for the second operation a reduction of the search domain, which becomes the sister of G instead of the sister of P. As a consequence, already skipped goals are not reachable anymore. In fact, going backward would mean to start again the search from the highest possible position, after having already looked into a more embedded position. In other words, the "cheapest" option is to look at the last stored position. Once this position has been stored as an index for the search, it is "cheaper" to go on from there, instead of backtracking, since the domain S(G) is a smaller than S(P).

Going back to a previous skipped goal would require either upward Agree, which I exclude, or the set up of a new larger domain, even though the new search could have started from a previously checked intermediate position. A question that may arise is

why, in case the cycle starting from the lastly probed goal is not successful, Agree does not start again from the position of the probe and checks in a second cycle of Agree the higher portion of the tree that has been skipped before. The idea is that this part of the structure has already been scanned starting from that position, although for a different probe. Therefore, this is an already performed operation for that head. As I will show in the section §2.5.2, this idea reminds of the *Principle of Minimal Compliance* (Richards 1998). More importantly, recall that the aim of Agree is not the success of feature valuation, as I have explained in section §2.3.1. Agree must be carried out in accordance with the principles that constrain this operation, but it is insensitive to the restitution of a value or to its failure (Preminger 2014). Hence, it should not be necessary to go back to already skipped goals in order to find a matching feature: the derivation is successful even when the probe has not found any goal.

To sum up, Nested Agree can be viewed as an economy condition on Agree. Once the Agree operation that is ordered as first has applied, the next Agree operation triggered by the same head needs to minimize its search domain by exploiting the previous operation. The first Agree operation is completely free and can scan its c-command domain until it finds an appropriate goal. The next instance of Agree must be as economical as possible: the probe tries to agree with what is left by the previous operation, i.e. the previous goal and its own c-command domain.[12]

2.4.3 On the ordering of features

Let me now add a few words about the assumption of ordered features. As noted by Sabel (1998: 134-135), the proposal about features being hierarchically ordered may stem from the assumption that lexical elements are constituted by sequences of features, suggested by Chomsky (1995: 179). In particular, Chomsky (1995) proposes that if the features on a lexical item are checked in a certain order, then it is possible to rephrase Baker's (1985)'s Mirror Principle within the minimalist program.[13] Sabel (1998) makes use of feature ordering in the following ways. He derives the fact that movement to specifier positions has to precede movement to adjoined positions by claiming that any features (topic-, wh- or

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[12]The same economy rationale stands behind another proposed principle on Agree that is specular to Nested Agree, the *Condition on Agree Domains (CAD)* (Puškar 2017, 2018). Under CAD, the second Agree operation cannot reach any item that is c-commanded by the goal of the previous operation. Once an item has been targeted by Agree, the structure below it becomes opaque for any further operation. Hence, the goal of the previous operation constitutes the lower limit of the search domain of the second probe.

On a side note, Nested Agree can also derive the data described in Puškar (2018) if the features on the nominal heads are ordered differently, in particular natural gender higher than grammatical gender (note that there is no conclusive evidence for the exact mutual ordering of these features in the nominal domain (Puškar 2018: 286)).

[13]"Then we may take a lexical element – say, the verb V – to be a sequence V = $(\alpha, \text{Infl}_1, \ldots, \text{Infl}_n)$, where α is the morphological complex $[\text{R–Infl}_1– \ldots –\text{Infl}_n]$, R a root and Infl_i an inflectional feature. The PF rules only "see" α. When V is adjoined to a functional category F (say, Agr_o), the feature Infl_1 is removed from V if it matches F; and so on. If any Infl_i remains at LF, the derivation crashes at LF. The PF form α always satisfies the Mirror Principle in a derivation that converges at LF" (Chomsky 1995: 179).

scrambling features) that are checked in adjoined positions are always checked last (Sabel 1998: 135). He also proposes that C can bear more than one [wh]-feature, and these are hierarchically ordered [wh₁] ≻ [wh₂] and must be checked in different specifier positions of CP by different wh-phrases (Sabel 1998: 151). In his analysis, he follows Koizumi (1994), who proposes that the head of a phrase with multiple specifiers contains hierarchically ordered features that have to be checked in a certain order. Koizumi (1994) deals with hierarchically ordered Top- and Neg-features ([Top] ≻ [Neg]), which trigger movement of TopP and NegP in different specifier positions of the same projection.

The possibility, and actually the need, of having the features ordered follows from the interaction between operations. This option has been pursued by many studies in which the respective order of Merge and Agree has been investigated, both language-internally (Bruening 2005; van Koppen 2005; Anand and Nevins 2006; Asarina 2011; Halpert 2012; Richards 2013; Kalin and van Urk 2015) and cross-linguistically (Lahne 2008; Müller 2009; Georgi 2014; Assmann, Georgi, Heck, Müller, and Weisser 2015). Given the Earliness principle, each feature should be discharged as soon as possible. If a head bears more than one uninterpretable feature, then either it checks all its features simultaneously, or the features are sequentially discharged. The transparent interactions between operations in terms of feeding and bleeding point at an organization of the features in a fixed order (Georgi 2014: 250), and in particular the ordering is fixed in a language-specific manner (Georgi 2014: 30).[14] In a derivational architecture of grammar, features interact in such a way that their order of application is decisive, giving rise to cross linguistic variation (cf. Müller (2009) for the difference between ergative and accusative languages being analyzed as a difference in ranking between Merge and Agree). Some orders might be universal, as has been proposed for the general tendency of probing for person before probing for number (Béjar and Rezac 2003; Preminger 2011; Coon and Keine 2020). The universality of such orders may derive from the general organization of features, as proposed within theories that make use of some feature geometry (Harley and Ritter 2002). In the case of extrinsic orderings, there might be no reason to assume that a order is chosen over another one. Under this approach, the choice is language-specific and language variation arises by reordering of operation-inducing features (Heck and Müller 2006, Georgi 2014: 129). Whenever a ranking of features is proposed for a language, if the opposite order is available in another variety, then the analysis is supported by these data. Hence, the existence of a typology of languages built on different orderings legitimates the validity of an analysis based on different feature orderings.

My dissertation contributes to this debate about the extrinsic ordering of features as an explanation for language variation. By ordering the features on Perf, not only I achieve an effective analysis of auxiliary selection in Italian, but I also allow for cross-linguistic variation. In fact, as I will show in chapter 6 with the typology of auxiliary selection, if

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[14]I follow here Georgi (2014) in considering the ordering of features to be the last operation in the numeration. If a head ends up bearing more than one feature, these need to be ordered according to their timing of application.

the order of the features on Perf that I assume for Standard Italian is switched, we get the auxiliary distribution of Southern Italo-Romance dialects.[15] This typology is represented in (22).

(22)   a.   Perf [uInfl:perf] $\succ$ [uπ:_] : π value from v Standard Italian
        b.   Perf [uπ:_] $\succ$ [uInfl:perf] : π value from DP$_{\text{sbj}}$ Southern dialects

In Standard Italian (and in argument-structure-based auxiliary selection in general), [Infl] probes before [π]. It follows that Perf probes v, with the consequence that auxiliary selection depends on the argument structure and, in particularly, on the features of the object. In the Southern Italian dialects (and in person-driven auxiliary selection in general), [π] probes before [Infl]. Hence, Perf targets the DP$_{\text{sbj}}$ and auxiliary selection depends on the features of the external argument.

2.4.4 Against A-over-A type of minimality

The principle of Nested Agree, when applied to the specific case of auxiliary selection (represented in trees (19), (20) in section §2.4.1), leads Perf to probe v for the person feature. We may wonder if this result can be achieved by using other syntactic principles that have been already independently proposed, instead of resorting to Nested Agree. In the discussion about the minimality problem that the present configuration poses, I have mentioned that Equidistance (Chomsky 2001: 27) is not a suitable tool to solve the minimality violation. Equidistance states that the internal specifier and the external specifier share the same structural position. In the present case, the goal v is a head, rather than an item in the specifier or in the complement position. Hence, Equidistance does not say anything about why the head v should be closer than its specifier (DP$_{\text{sbj}}$ in Spec,v) to something higher in the structure (Perf).

The head becomes closer than its specifier with respect to another higher syntactic position by assuming that the features on the head are shared by the maximal projection. This is the so-called *A-over-A principle* (Chomsky 1964; Hornstein 2009; Roberts 2010; Preminger 2019), represented in (23).

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[15]Against possible skepticisms about ad-hoc orders, I do not see any compelling reason why this option should be rejected. Indeed, the extrinsic ordering of features is a logical possibility and it helps in shaping the cross-linguistic variation in a quite economical way.

(23)   A-over-A configuration

$$
\begin{array}{c}
\alpha\text{P} \\
[\text{uF:}\_\_]
\end{array}
$$
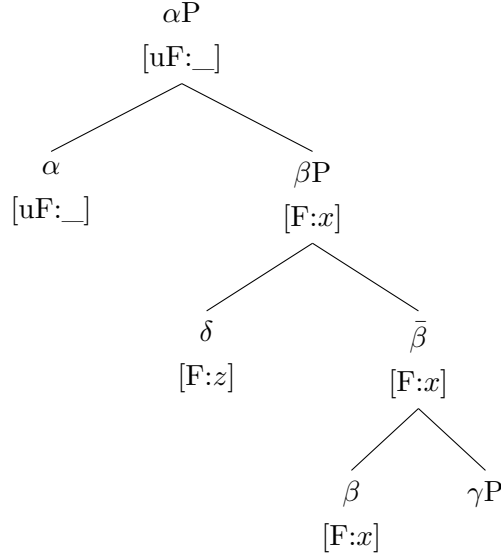
In the tree (23), both the head β and the maximal projection βP bear the feature [F], valued as x. If the head and the maximal projection contain the same feature set, the minimality problem should be solved. Perf (i.e., α) should be able to find the features of the object in vP (i.e., βP), given that the maximal projection vP (βP) is closer to the higher head Perf (α) than any other element that it contains (included the specifier that hosts the DP$_{\text{sbj}}$ (i.e., δ).

The A-over-A principle derives from the theory of *Bare Phrase Structure (BPS)* (Chomsky 1964): non-terminal levels of projection (βP and $\bar{\beta}$ in the tree in (23)) are the same syntactic object as the head (β). They can be distinguished only in relational terms, meaning that a single instance of β dominates or is dominated by another instance of itself. As far as the features are concerned, βP, $\bar{\beta}$ and β cannot be distinguished: they all bear the same featural specification, since they are instances of the same object.

I said in section 2.3.1 that the algorithm of Agree is subject to the conditions of (i) feature matching, (ii) interpretability, (iii) downward direction, (iv) minimality. Looking now at tree (23), it follows that the probe [uF:_] in α scans its c-command domain starting from its sister, the maximal projection βP. If this bears the relevant feature, Agree stops. Otherwise, [uF:_] proceeds its search downwards, targeting firstly Spec,β, secondly β, and thirdly Comp,β. This is actually how Agree works with or without the assumption of BPS. Without assuming BPS, the maximal projection βP does not contain any feature (except from the categorical feature that allows it to be selected by α). Consequently, the maximal projection is transparent for Agree and the first possible goal is located in the specifier of the head of that maximal projection. In contrast, if BPS is assumed, the features on the maximal projection (equal to the features on the head) are possible matching goals for the higher probe. In particular, they are inspected before the specifier of that head is

encountered.

In the present case, under the assumption of BPS Perf probes vP as the first possible goal, which bears the same feature of v. In case vP does not bear the matching feature, Perf searches first into the Spec,v, then into Comp,v. Therefore, it might seem that A-over-A minimality offers a way to solve the puzzle of auxiliary selection. Recall in fact that Perf probes v, thereby skipping the DP$_{sbj}$. However, this analysis fails to derive the case of unaccusative predicates, which is exactly the scenario for which Nested Agree needs to be introduced, since no other principle can derive this configuration. I will now sketch the problem for unaccusative predicates, although the analysis is developed in chapter 3. The wrong prediction of A-over-A minimality in the case of unaccusative verbs rules out this approach in favor of Nested Agree.

For unaccusative verbs, the auxiliary is BE (cf. (1-d)). Given the vocabulary entries in (21), Perf should fail to copy a person value, leading to default insertion of the allomorph BE. However, the A-over-A derivation leads to successful agreement on Perf, and consequently, to the insertion of the more specific allomorph HAVE, contrary to what the data show. An unaccusative verb combines with a defective v, which neither is a probe for π-features, nor it assigns accusative case (Chomsky 2001). The former property of defective v determines the absence of person features on it. From the latter characteristic, it follows that the DP$_{obj}$ must move out of the complement of v (under the assumption that each v is a phase (Legate 2005) and that phase domains are opaque for syntactic operations, due to the Phase Impenetrability Condition, Chomsky 2000, 2001). Consequently, when Perf enters the derivation, the DP$_{obj}$ is located in Spec,v, which constitutes an intermediate landing position.[16]

Let us now apply the A-over-A minimality type to this syntactic configuration, instead of using Nested Agree. In the structure in (24) the probe [uπ:__] on Perf starts its search from the sister of Perf, i.e. vP.

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[16]Evidence for Spec,v as the intermediate landing site is the position of the floating universal quantifier.

(i)　　Le ragazze sono　　　tutt-e　arrivat-e.
　　　　the girls　be.PRS.3PL all-PL.F arrive.PRTC-PL.F
　　　　'All the girls have arrived.'

Note also that the internal argument of an unaccusative verb can also show up on the right of the past participle, as in (ii-b).

(ii)　　a.　Le ragazze sono　　　arrivat-e.
　　　　　　the girls　be.PRS.3PL arrive.PRTC-PL.F
　　　　b.　Sono　　　arrivat-e　　le ragazze.
　　　　　　be.PRS.3PL arrive.PRTC-PL.F the girls
　　　　　　'The girls have arrived.'

The surface position of the DP influences neither the realization of the perfect auxiliary nor the inflection on the past participle. I consider cases as (ii-b) to involve covert movement of the DP out of its base position. I provide an analysis of this phenomenon in section §4.5 of chapter 4.

(24) $[_{\text{PerfP}}$ Perf$_{[\text{u}\pi:\_]}$ $[_{v\text{P}}$ DP$_{\text{i}[\pi:\alpha]}$ v $[_{\text{VP}}$ V t$_{\text{i}}]]]$

The maximal projection vP does not bear the relevant feature, since the head v does not bear any person feature. Consequently, Perf goes on searching into the next highest node. It gets to Spec,v, where the DP is located.[17] Perf probes this DP, which bears a bundle of ϕ-features. Hence, Perf acquires a person feature via Agree, which causes it to be spelled out by the exponent HAVE (given the lexical entries in (21)), rather than by the elsewhere form BE, as is instead the case. As we can see and as will become clear in the detailed derivation in chapter 3, the A-over-A principle gives the wrong derivation.

One might think that there are ways out of this problem. For example, the DP object could be raised by an EPP-feature [•D•] on Perf, before Perf probes v. If Perf bears [•D•], the subject gets out of the way. For the next probe [uπ:__], the syntactic configuration is as follow.

(25) $[_{\text{PerfP}}$ DP$_{\text{i}[\pi:\alpha]}$ Perf$_{[\text{u}\pi:\_]}$ $[_{v\text{P}}$ t$_{\text{i}}$ v $[_{\text{VP}}$ V t$_{\text{i}}]]]$

Perf probes for π-features the maximal projection vP (then, sequentially, Spec,v, v and Comp,v). In (25) there is no possible goal in the sister of Perf. Agree fails, leading to the insertion of the elsewhere form BE at Spell-out. This is exactly what we were aiming at. However, there is a problem with this derivation. The required feature ordering on Perf ([•D•] $\succ$ [uπ:__]) violates the Strict Cycle Condition (SCC) (Chomsky 1973: 243), already introduced in section §2.3.2. The SCC prohibits any operation that excludes the current cyclic domain. When the feature [•D•] is discharged creating the specifier, the current cyclic node is vP. Instead, π-probing involves the head and the complement with the exclusion of the specifier. Hence, it excludes the maximal projection vP. This means that the feature ordering [•D•] $\succ$ [uπ:__] violates strict cyclicity. [•D•] must be the last feature to be discharged because it affects the head and the specifier position. Once this operation is carried out, it is impossible to perform an operation such as downward person-Agree because it excludes the current cyclic domain that is the maximal projection. Therefore, the order of features that one would need in order to get the right result under the A-over-A configuration is independently excluded by the SCC.[18] Note also that the same order (where [•D•] is the last feature to be discharged) is consistently assumed for the feature array on T and on transitive v, as we will see in the analysis in chapter 3

A further problem with the A-over-A minimality consists of the fact that there can

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[17]In (24), and in general in this dissertation, I indicate the movement path with the subscript i and the trace in the base position with the letter t. I also assume that traces are not possible targets for Agree.

[18]The reader may wonder whether a possible solution is the rejection of the Strict Cycle Condition in its strong form. Independently of the SCC, the order of features on Perf that is forced by the A-over-A solution has the unwelcome consequence that the ordering of features would be specific to different heads. In fact, [•D•] must be discharged as the first feature on Perf (because of unaccusative verbs, as I have just shown) and as the last feature on transitive v (because of reflexive objects, as I will show in chapter 3). In this dissertation, I would like to argue that the extrinsic ordering of features is language specific, but it is consistent across heads. For example, in Standard Italian case assignment is carried out as the first operation, then the features triggering Agree are discharged, and finally the Merge features.

be other arguments between Perf and *v*, such as clitics. For example, we can find the quantitative (partitive) clitic *ne* or a dative clitic pronoun in dependence of an unaccusative verb, as in sentences (26-a,b).

(26)   a.   Ne=sono   arrivat-e   molt-e.
              of=be.PRS.3PL arrive.PRTC-PL.F many-PL.F
              'Of them, many have arrived.'

        b.   Le=sono   capitat-e   molt-e   cose.
              DAT.3SG.F=be.PRS.3PL happen.PRTC-PL.F many-PL.F thing.PL.F
              'Many things have happened to her.'

The point highlighted by example (26) is that the clitics are extracted from the object position or the indirect object position. Given the phase theory, both the object DP and the clitic lands in Spec,*v* (the DP$_{sbj}$ can eventually move covertly, cf. section §4.5 of chapter 4 for discussion). If we now try to use the A-over-A principle (with the additional requirement of an EPP-feature on Perf) to derive auxiliary selection, we get the wrong prediction of successful agreement: Perf agrees either with the clitic (if it is in the inner specifier of *v*) or with object DP (if the clitic is in the outer specifier), as illustrated in (27).

(27)   Unaccusative verb with clitic pronoun under A-over-A minimality
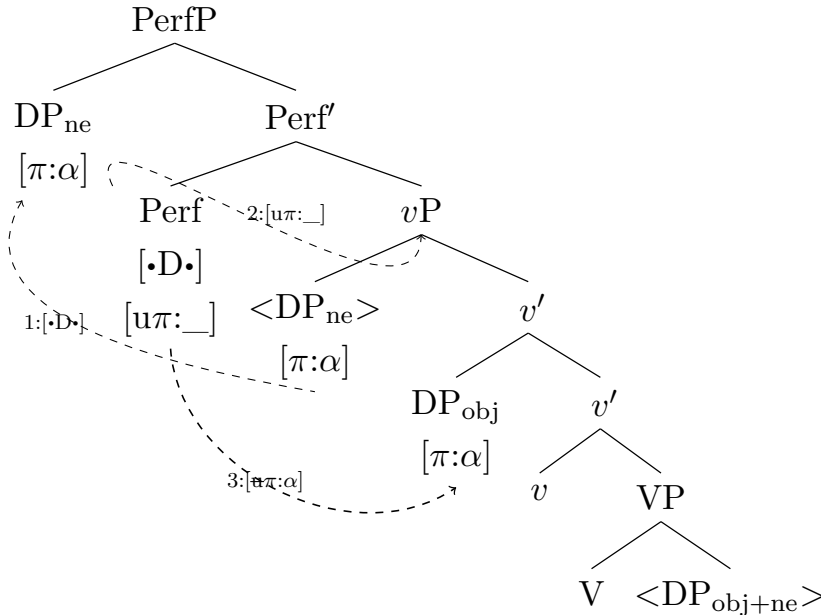
In (27), Perf raises the higher D category via its [•D•] feature, as discussed above. Then, it probes *v*P, which does not contain any person feature, it being unaccusative. After this step, it looks in Spec,*v*, where it finds either the clitic or the DP, with the result that person-Agree is successful and HAVE is inserted. In other words, in the case of a DP argument and a clitic, these items are located on the path of Agree, intervening as

possible goals for Perf even in the presence of an EPP-feature on Perf that cannot solve the problem of more than one intervening DP. If v contains more than one specifier, then the EPP is not enough to achieve the desired result of failed Agree on Perf. The structure for (26-a) is in (27). I refer the reader to section §4.4.6 in chapter 4 for the analysis of sentences with the partitive clitic pronoun, and to Cardinaletti and Giusti (2017) for the general account of these structures.

Finally, such an account can be hardly adapted to cross-linguistic variation. Since it is based on a general principle of the syntactic structure, namely BPS, in order to account for cross-linguistic differences one should assume that BPS is active in one variety, whereas it is not a principle of another language. For instance, under the assumption of the A-over-A principle, we should expect a language like English to exhibit object agreement on T, which is of course not the case. This would take place in the following way. Assuming that v has a ϕ-probe that is valued by the object, the probe on v is projected onto vP. When the probe on T looks for ϕ-features, it is satisfied by vP, which is the closest possible goal, thereby leading to object agreement instead of subject agreement. Hence, we should conclude that in the A-over-A principle is active in Italian, but not in English. But the consequences are even worse. Since the same prediction for object agreement in English is valid also for Standard Italian, one should say that the head Perf agrees according to the A-over-A principle, whereas the head T agrees violating it (since T agrees with the DP_{sbj} rather than with vP). This is of course a prediction that imposes the rejection of the A-over-A principle. Finally, A-over-A cannot account straightforwardly for the difference between person-based and argument-structure-based systems of auxiliary selection, which can be easily derived by Nested Agree, as I mentioned in this chapter in (22) and as I show in chapter 6.

To conclude, I reject the A-over-A proposal: the only features that are projected onto the maximal projections are the categorical features. Having excluded the A-over-A minimality, only Nested Agree can give an account of the data presented in this dissertation.

2.5 Ingredients for Nested Agree

The principle of Nested Agree can be derived by the combination of independently motivated principles of syntactic theory, with some additional assumptions. Importantly, the syntactic configuration created by this principle should emerge by avoiding a potential violation of minimality, in accordance with the MLC. In (28), I repeat again the definition of Nested Agree that I have proposed in section §2.4.

(28)   *Nested Agree*
        Let F_1 and F_2 be two ordered probes on the same head H. The search space of F_1 is the c-command domain of H.

        (i)   *Maximize*: if the Agree operation A_1 for the feature F_1 has targeted the goal

G, then the subsequent Agree operation A_2 for the feature F_2 must also target G.

(ii) *No-backtracking*: If G is not a matching goal for F_2, the search space of F_2 is the c-command domain of G (not of H).

In this section, I show how Nested Agree can be rephrased into other previous theories of Agree, such as Agree-Link or specificity-driven derivations. In particular, Nested Agree can be derived by assuming (i) the Agree-Link theory (Arregi and Nevins 2012), with the additional idea that an Agree-Link between two heads can be used for multiple probe-features, (ii) feature ordering, (iii) ban against backtracking, (iv) downward Agree. Alternatively, it can be derived by the combination of (i) a specificity-driven principle such as Multitasking (van Urk and Richards 2015), (ii) feature ordering, (iii) ban against backtracking, (iv) the Principle of Minimal Compliance (for avoiding the eventual appearance of minimality violations).

I have already talked about feature ordering in section §2.4.3. As far as the ban against backtracking is concerned, the *No-backtracking* condition of Nested Agree prescribes that if the *Maximize* option fails, then the probe proceeds its search starting from the last probed syntactic position. The resistance of the process of probing to backtracking must be taken as an additional assumption. In fact, after the Maximize option has failed, the probe-head could in principle start the search once again from its sister, which is its original search domain. However, I do believe that the lack of backtracking is an intrinsic characteristic of downward direct probing, since I consider downward Agree to be non-cyclic.[19] Cyclicity is not an extra principle of the syntactic theory, but instead it stems from the nature of the derivation, which proceeds bottom-up. This means that the notion of cycle is hard-wired in the Merge operation as a reflex of the derivation, but it is not at work in probing, which I consider to be a downward operation. In other words, the probe-feature could certainly go back to the portion of the tree between the last probed node (the goal-head of the previous operation) and the node from which the search has taken place (the probe-head). Nonetheless, assuming that the downward search itself is not cyclic, the ban against backtracking is a natural assumption within a derivational framework as the one adopted in this dissertation.

2.5.1 Agree-Link

The core idea of Nested Agree is that an "Agree-channel" that has been opened must be reused, if possible. Nested Agree makes use of the link established by a previous dependency and exploits it again for a different probing operation, minimizing the number of independent Agree-channels. This consideration can be framed within a proposal developed by Arregi and Nevins (2012), *Agree-Link*.

Under this theory, Agree is split into two operations: *Agree-Link* and *Agree-Copy*. The

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[19]I thank F. Heck for discussion about this issue.

former creates a pointer between two heads (generally, from a functional head to a DP), meaning that it creates the syntactic dependency between two nodes (Baker and Souza 2020). The latter transfers the features (generally, ϕ-features) from the goal to the probe, with the result that the probe copies the features in a subsequent step of the derivation (in a post-syntactic component). The two steps of Agree are defined as follows (Arregi and Nevins 2012: 86).

(29)　　a.　*Agree-Link*: In the syntax, P has unvalued ϕ-features that trigger Agree with G (possibly more than one). The result is a link between P and G.

　　　　b.　*Agree-Copy*: In the Exponence Conversion module, the values of the ϕ-features of G are copied onto P linked to it by Agree.

As stated in (29-a), the system stores the link between the probe-head and the goal-head, and not only the relation between the probe-feature and the goal-feature. Since Agree-Copy happens in a further step of derivation, the result of the first component of Agree is simply a syntactic dependency between two heads (Baker and Souza 2020). At the point of Agree-Copy, all the features can be transferred from the head-goal to the head-probe.

Within this theory, the principle of Nested Agree can be stated as follows: given two ordered features $F_1 \succ F_2$, the Agree-Link established for the feature F_2 must be, if possible, the Agree-Link already established for the feature F_1. If an already existing Agree-Link dependency can be exploited for more than one Agree-Copy operation, then it should be used as such.

The Agree-Link theory can be used to justify the principle of Nested Agree because it offers an independent motivation to assume that there is something like a formal link that exists independently from the actual valuation procedure. Once the two heads P and G enter a relation for a feature F_1, an Agree-Link between P and G is created. It is true that the existence of such a link does not guarantee that another probe-feature on the same probe-head must, or even can, make use of this previous link, without establishing a new one. This is the new part introduced by Nested Agree, which must be stipulated within the Agree-Link theory.

As far as minimality is concerned, it is computed only on Agree-Link, but not on Agree-Copy. Once an Agree-Link respects minimality for the feature that has created it, it does not matter for the other features, since they do not create any new independent Agree-Link, but rather they are parasitic on the previous channel. The first probing operation has opened a channel of communication (an Agree-Link) that can be parasitically used by other features, thereby circumventing any eventual violation of the minimality condition by a new Agree-Link. For instance, in the case analyzed in this dissertation, the minimality violation of person-Agree between Perf and v across the subject is avoided by using an already established well-formed Agree-Link (Perf-v), which bypasses the offending intervening feature (on the DP_{sbj}).

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2.5.2 Specificity-driven derivations

I have just described how Nested Agree can be reformulated within the Agree-Link theory, with the further assumption that the same Agree-Link can be re-used for multiple features. Leaving this on a side, let me now illustrate how Nested Agree can alternatively be derived by the combination of other principles that have already been independently proposed. While discussing these principles, I will also include a sketch of a competing analysis for the case studies that have been used to support such principles. The idea is not to present an exhaustive analysis, but only to show that Nested Agree can also handle those data, depending on the underlying assumptions that one adopts.

In this section, I would like to present some principles of syntactic theory that give rise to specificity-driven derivations, and compare them with Nested Agree (which is not a specificity-driven principle). With the term *specificity-driven* I refer to those syntactic derivations where elements that are more "specific" in their featural inventory (meaning that they carry more features, or more articulated values of these features) are preferred by the probe-feature over less specific elements (Lahne 2012). In different contexts and in different languages, an operation may involve the most specific constituent, when there is more than one option at disposal. If this is due to specificity as a syntactic principle, or whether specificity emerges as an epiphenomenon due to other principles, is a question that lies outside the scope of this study.

In a nutshell, Nested Agree (in particular, the *Maximize* condition in (28)) is equal to a specificity-driven principle, plus the assumption that features are ordered (the premise in (28)), plus the condition against backtracking (the *No-backtracking* condition in (28)). The first condition *Maximize* shares similarities with other principles, such as the *Maximize Matching Effects* (MME) (Chomsky 2001), the *General Specificity Principle* (GSP) (Lahne 2012), *Multitasking* (MT) (van Urk and Richards 2015) and the *Economy condition on multiple probe satisfaction* (ECoMPS) (Pesetsky 2019). Potential minimality violations can be avoided by resorting either to the Agree-Link theory presented above (a later Agree relation can use the well-formed Agree-Link established by a previous one), or to the *Principle of Minimal Compliance*, which I discuss below in this section.[20] The main differences with this class of specificity-based principles are a consequence of feature ordering. Let me now discuss in details how Nested Agree is different or similar to other comparable proposals.

The principle of Maximize Matching Effects states that when two heads enter a relation (Agree or Move), they should check together as many features as possible.

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[20]The Minimal Link Condition and Nested Agree impose contradicting requirements, although Nested Agree itself is subject to the MLC. This interaction could be framed in a theory such as Optimality Theory. In contrast, within a derivational framework of sequential interactions as the one adopted in this dissertation, in order for Agree operations to possibly violate the MLC by means of Nested Agree, one must adopt the assumption that a later Agree operation can use the Agree-Link established by a previous one (which does not violate the MLC). I refer the reader to section 2.5.1 for a short discussion of minimality within the Agree-Link theory. Alternatively, one should resort to the Principle of Minimal Compliance, discussed here below.

(30)   *Maximize Matching Effects (MME)* (Chomsky 2001: 15)
         If local (P, G) match and are active, their uninterpretable features must be
         eliminated at once, as fully as possible.

MME is related to a head H, bearing multiple probe-features. If H bears the probe-features
$[P_1, P_2]$, H should not spare one of its probe-features P_2 for a lower goal G_2 if P_2 could have
been checked by a higher goal G_1 (which also checks P_1 on H). Features are not ordered,
but they are satisfied as soon as possible, in accordance with the Earliness principle
(Pesetsky 1989).

MME maximizes the number of operations with the same goal, with the aim of reducing
the computational complexity. Moreover, it is subject to minimality: if there is a higher
goal for a probe, this should be chosen instead of a lower one, even when the lower goal
would satisfy multiple probes. Hence, MME does not properly belong to the class of
specificity-driven principles because it does not favor the operation that satisfies more
features at the same time (differently from the principles discussed below). However, I have
included it in the present discussion because it has partially inspired other specificity-driven
principles and because Nested Agree might look like it for the reader.[21] MME is similar
to the first condition of Nested Agree as far as valuation is concerned, but Nested Agree
is somehow opposite to it, at least for two reasons. Firstly, Nested Agree *minimizes* the
number of distinct Agree-Link dependencies, although it *maximizes* the matching relations
between the probe-head and the goal-head. Secondly, depending on the feature ordering it
might allow a probe-feature to skip the most local goal-feature.

A similar idea to MME is formalized by the principle of Multitasking. This principle
compares the competing operations A and B triggered by a head H and favors the operation
that involves the simultaneous satisfaction of more features.

(31)   *Multitasking (MT)* (van Urk and Richards 2015: 132)
         At every step in a derivation, if a probe can trigger two operations A and B, and
         the features checked by A are a superset of those checked by B, the grammar
         prefers A.

In this definition, the word *probe* means the syntactic head that bears the probe-features,
triggering the operations A and B. If the head bears more than one probe-feature, it can
trigger two or more different operations. In this scenario, the operation that satisfies the
highest number of probe-features is preferred and must be carried out first. For this reason,
MT is different from MME. MT compares the effects of discharging different features,
and chose to discharge the feature that has more consequences. For instance, if feature A

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[21]Maximize Matching Effects simply prescribes that each probe must target the highest matching goal,
as soon as possible. It is noteworthy that the outcome of MME seems to be already ensured by the MLC,
which in turn may derive from earliness and the geometry of the tree. Hence, the exact contribution of
this principle to syntactic theory is not completely straightforward. I thank F. Heck for the discussion
about this and other principles.

provokes movement to a position where feature B is also satisfied, whereas the satisfaction of feature B does not have any consequence for the satisfaction of feature A, then feature A is discharged first (and feature B is discharged as a consequence of feature A). In other words, the satisfaction of different features is organized in subset/superset relations, as the definition in (31) states. In contrast, for MME the features are independent and do not stay in any implicational relationship.

Multitasking has been designed in order to account for cases as (32), from the Nilotic language Dinka.

(32)   *Dinka*

    a.   Yeŋó cíi   môc   yiên Ayén?
           what PRF.NS man.GEN give Ayen

    b. *Yeŋó cíi   môc   Ayén yiên ?
           what PRF.NS man.GEN Ayen give
           'What did the man give Ayen?'   (van Urk and Richards 2015: 131)

In (32), the recipient DP (Ayén) cannot move to Spec,v and must stay in the lower position. Assuming that v bears the probes [uwh] and [ucase], if in its c-command domain there are two DPs (Ayén and yeŋó), which both need case, but only one of them is of the wh-category (yeŋó), then only the wh-phrase (yeŋó) will be moved, since its movement satisfies both probes at once. The sentence in (32-b) is not grammatical because it requires an additional movement step that is not necessary in (32-a).[22]

The status of Multitasking with respect to minimality is very unclear. The underlying structure for the example (32) is not given. It is very likely that the wh-phrase, which is the direct object, is merged in a lower position than the indirect object. If this is the case, the [ucase] feature attracts the direct object across the indirect object with a minimality violation. However, the authors are not concerned with this problem: "the locality conditions that require probes to Agree with the closest possible goal do not similarly constrain the choice of possible Move operations" (van Urk and Richards 2015: 122). On the one hand, movement is not subject to the same minimality conditions as Agree is (van Urk and Richards 2015: 122). On the other hand, movement is considered to be always feature-driven (van Urk and Richards 2015: 131). If this is the case, then movement is (indirectly) subject to minimality as well. In fact, there must be some kind of locally restricted Agree operation that licenses movement operations.

To sum up, Multitasking is an economy condition on movement operations, which may perhaps outrank minimality (ultimately, one should see the derivation of the clauses in (32) and verify how Multitasking takes minimality into account).[23]

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[22]Case assignment to the lower object in (32-a) is independent of movement. I refer the reader to van Urk and Richards 2015 for details.

[23]The reader may wonder if Nested Agree can do the job of Multitasking in ruling out the sentence in (32-b). The most straightforward way to do so is to assume the order of probe-features [uwh] ≻ [ucase] for Dinka. The wh-phrase in the lower position is the goal for the first operation; Nested Agree restricts the

To the class of Multitasking principles also belongs the Economy condition on multiple probe satisfaction.

(33)   *Economy condition on multiple probe satisfaction (ECoMPS)* (Pesetsky 2019: 28)
       When two probes can satisfy their requirements with a single operation, this option blocks any alternative derivation in which the same pair of requirements are satisfied with two distinct operations.

This principle is very similar to Multitasking, both in its effects and in its spirit. It is introduced in order to block cases such as (34-a), given the availability of the successful competing derivation in (34-b).

(34)   a. *Mary, who it seems to be the best candidate, ...
       b. Mary, who seems to be the best candidate, ...   (Pesetsky 2019: 26-27)

Pesetsky (2019) analyses (34) as follows. The higher v (selecting the raising verb *seem*) bears an EPP probe and a wh-probe. The EPP-probe can target either the CP as a whole ([$_{CP}$ to be the best candidate]), merging then the expletive *it* in its specifier, or it can target the subject (who) and raise it to its specifier. The choice is normally optional, under the assumption that the domination relation between the CP and the subject in Spec,v does not make any of these phrases an intervener for the other one.[24] The alternation, when there are no wh-phrases, is as in (35). In (35-a), the EPP-feature raises the subject *Mary*, while in (35-b) it raises the CP.

(35)   a. Mary seems to have solved the problem.
       b. It seems that Mary has solved the problem.   (Pesetsky 2019: 14)

Differently from (35), in (34) the subject is also a wh-phrase. In that case, v bears a wh-probe that has only one possible goal in its c-command domain, namely the wh-subject. According to Pesetsky (2019), the derivation in (34-a) (where the EPP-probe targets the CP, and the wh-probe the subject *who*) is blocked because of the principle in (33). In (34-b), a single operation (raising of the wh-phrase subject to the specifier of the higher v) can satisfy both probes on v. Raising of *who* in (34-b) prevents the separate satisfaction of the EPP probe by *it*-CP and of the wh-probe by *who*. Crucially, if such an economical derivation is possible, then it must take place, as stated by (33).

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domain of the second operation [ucase] to the same goal.

   In case this analysis turns out to present any problem, there can be other principles at play. For example, if the probe-features are not ordered or if the order is [ucase] ≻ [uwh], we could have further movement of the VP across the raised indirect object. Another option is that the indirect object is introduced by a phase Appl head that moves the direct object to its specifier, so that the DO is located in a higher position for v. I leave this issue to further research.

   [24]The *domination* relation results in equidistance of XP (here, CP) and a position inside the XP (here, Spec,v). However, it is not clear what it is exactly meant with this. It is not A-over-A minimality (otherwise the CP is an intervener for the subject in Spec,v), and it is not c-command minimality (otherwise the CP is not a possible goal for the EPP on v).

The constraint in (33) is subject to minimality: if there is a higher goal, it is targeted instead of a lower one, even if the latter would satisfy more than one probe. In the examples discussed here, the CP and the subject inside the CP (in Spec,v) are considered equally distant from the higher probe. If there is a further DP higher than the CP and Spec,v, then the EPP-probe raises the higher DP, and no other derivation is possible. This is exemplified in (36), where the EPP raises the main clause indirect object, which is the closer c-commanded matching goal, and the wh-probe raises the wh-phrase subject.

(36)   Mary, who I've been assured to be the best candidate...   (Pesetsky 2019: 25)

To sum up, the ECoMPS is a constraint that favors a single operation that can satisfy multiple probes, over multiple less specific operations.[25] It is also subject to minimality, perhaps differently from Multitasking, although minimality is an independent assumption that one could also adopt with Multitasking.

All the principles discussed so far state something similar to what the first step of Nested Agree does: the same goal-head must be targeted by multiple probe-features. However, they are not concerned with potential locality violations: MME and ECoMPS are subject to minimality (meaning that they cannot create anti-local relations), whereas MT does not consider locality for movement, although it seems that Agree relations must be considered subject to minimality (van Urk and Richards 2015: 122). However, the principles of MT and ECoMPS can be combined with another one that avoids the emergence of an anti-minimality configuration, such as the *Principle of Minimal Compliance (PMC)* (Richards 1998), stated as follows.[26]

(37)   *Principle of Minimal Compliance* (Richards 1998: 601)
         For any dependency D that obeys constraint C, any elements that are relevant for
         determining whether D obeys C can be ignored for the rest of the derivation for
         purposes of determining whether any other dependency D' obeys C.

This principle regulates the application of other grammatical constraints. Given a syntactic structure and a constraint C that must be evaluated on that structure for a dependency D, if C is respected by that dependency D, then the constraint C does not need to be

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[25]It is again a licit question to ask whether Nested Agree can account for the data derived via ECoMPS. Nested Agree with the order [uwh] ≻ EPP can generate the data in (34) even under the underlying Equidistance assumption made to justify the alternation in (35). For the sentence in (36), the situation is a bit different. Even though both the wh-probe and the EPP-feature target the lower wh-phrase given Nested Agree, as in (34), the indirect object, which is an argument of the higher v, must be raised to the specifier of the phase because of its unchecked case (since passive v does not assign case). Hence, both arguments move for independent reasons. The linear order can be achieved if the wh-phrase then further moves to the left periphery.

[26]I exclude the principle of MME because, in my understanding, it never allows for a probe-feature to skip the higher intervener, since every probe-feature should be satisfied with the higher goal-feature in the c-command domain. The same can be said about ECoMPS. However, the fact that in ECoMPS (and in MT) the satisfaction of a feature is considered to have an effect on the satisfaction of other features (cf. also discussion below (31)) makes it easy to combine ECoMPS with the Principle of Minimal Compliance.

satisfied anymore by the subsequent dependency D'. This valuation is computed only on "relevant" elements, meaning items that are located on the path of the syntactic dependency D and are of the type considered by the constraint C. This principle stems from economical considerations: the system avoids checking the same constraint in the same portion of the structure more than once. Hence, the PMC allows to "ignore" an offending configuration, once a previous well-formed dependency is established. The consequence is that violations are locally tolerated, if the relevant constraint is respected at another stage of the derivation.

As far as the MLC is concerned, the PMC permits to tolerate the minimality violation if minimality has been satisfied by a previous relevant syntactic dependency. In particular, for the dependency between Perf and v, minimality is violated by $[\pi]$-probing, but it has been respected by [Infl]-probing. Since the previous [Infl]-Agree has respected minimality on the portion of structure between Perf and v, the minimality violation introduced by π-Agree on the same path can be ignored.

To sum up, the *Maximize* condition of Nested Agree is equivalent to the combination of two principles: Multitasking (or an analogous principle), and the PMC. The former forces multiple probe-features to be satisfied by the same goal-head; the latter avoids minimality violations that may arise in this process. Indeed, Nested Agree prescribes the *Maximize* option under the toleration of minimality violations, as long as the probe that has created the Agree-dependency has respected the minimality constraint. Only the first operation is subject to minimality because it is the one that creates the channel (cf. also the discussion in section §2.5.1 of the Agree-Link framework as an alternative to the PMC).

Lastly, a final, previous proposal that I would like to discuss is the General Specificity Principle, since it generalizes the maximizing effect in spite of potential minimality violations.

(38)   *General Specificity Principle (GSP)* (Lahne 2012: 2)
       A Probe undergoes a syntactic operation with the most specific matching goal. Specificity is determined by cardinality of morpho-syntactic features: a set Q is more specific than a set H iff $|Q| > |H|$.

This constraint gives rise to specificity-driven syntactic derivations. It is more important to check as many features as possible through a single operation, instead of performing different separate local operations. When the search domain of a probe contains more than one potential goal, the probe agrees with the goal that bears the highest number of matching features, regardless of minimality. The effects of GSP are equivalent to the action of MT without the MLC. Note, however, that the GSP is framed under a theory where minimality in the form of an independent syntactic principle (such as the Minimal Link Condition) is not adopted at all, but its effects are instead derived by other principles of syntactic theory, such as the Phase Impenetrability Condition (Lahne 2012).

In its effects, the General Specificity Principle goes close to what Nested Agree does,

although the logic behind the two principles is completely different: Nested Agree is not specificity-driven, and is not transderivational, as I will clarify in sections §2.5.3 and §2.5.4. Moreover, the GSP is similar just to the first step of Nested Agree, *Maximize.* The novelty of Nested Agree lies in this ban against backtracking, as stated by the *No-backtracking* condition. Nested Agree prescribes that if the *Maximize* option fails, then the probe must go on checking the c-command domain of the more embedded last checked position, without backtracking.[27]

I said that Nested Agree is not specificity-driven and is strictly derivational. Both differences result from the assumption that features are extrinsically ordered. The next two sections address these differences in details.

2.5.3 Nested Agree is not a specificity-driven principle

First of all, Nested Agree is not a constraint that favors the most specific goal in its c-command domain, in contrast with MT, ECoMPS and GSP. Specificity-driven configurations often emerge as the result of Nested Agree because the successfully probed goal for the first probe becomes the first potential goal for the second probe. Therefore, when the currently considered head also matches the second probe (i.e., in 50% of the cases), the derivation involves the most specific goal. However, specificity is not the driving, underlying idea. In fact, it is not required that two heads should match as many features as possible, but it is rather the case that an existing dependency must be exploited as much as possible as the preliminary step of the new search, instead of starting again from the scratch.

Nested Agree applies independently of specificity and it can also lead to anti-specificity.

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[27]Nested Agree can account for the cases discussed in Lahne (2012). I present multiple wh-fronting with preserved order in section §2.6.2. I do not address the case of minimality violations with adverb movement, since there are many other factors that play a role. In particular, there might be different positions in the left periphery where adverbs can move, including a dedicated position similar to a topic position (Rizzi 2002: 241). This might explain why more than one adverb can be simultaneously preposed if one of them is focused (i-d) (otherwise, only the highest one is left dislocated, as shown in (i-a,b)).

(i) a. I   tecnici   hanno   probabilmente risolto   rapidamente il   problema.
        the technicians have.PRS.3PL probably   solve.PRTC rapidly   the problem
        'The technicians have probably resolved rapidly the problem.'   (Rizzi 2002: 234)
     b. *Rapidamente, i   tecnici   hanno   probabilmente risolto   il   problema.
        rapidly   the technicians have.PRS.3PL probably   solve.PRTC the problem
        'Rapidly, the technicians have probably resolved the problem.'   (Rizzi 2002: 234)
     c. RAPIDAMENTE, i   tecnici   hanno   probabilmente risolto   il   problema.
        rapidly   the technicians have.PRS.3PL probably   solve.PRTC the problem
        'Rapidly, the technicians have probably resolved the problem.'   (Rizzi 2002: 235)
     d. RAPIDAMENTE, probabilmente i   tecnici   hanno   risolto   il   problema.
        rapidly   probably   the technicians have.PRS.3PL solve.PRTC the problem
        'Rapidly, probably the technicians have resolved the problem.'

For similar German data, Lahne (2012) proposes an analysis based on (i) specificity, (ii) ad hoc features for the Infl-domain adverbials and (iii) featural decomposition. Her analysis can be easily reformulated with Nested Agree. Assuming that the feature order on C is [•Foc•] ≻ [•Adv•], then the adverb that moves will be the one bearing the Focus feature.

We can imagine some different scenarios where NA leads to different valuation outcomes. In the first case, there are two equally specific goals, but for different features. For example, in tree (39), the head *P* bears the probes {uX, uY, uZ}; one of the possible goals, the higher *G*, bears the features {X, Z}, while the other one, the lower *J*, {Y, Z}.

(39)   Equally specific goals
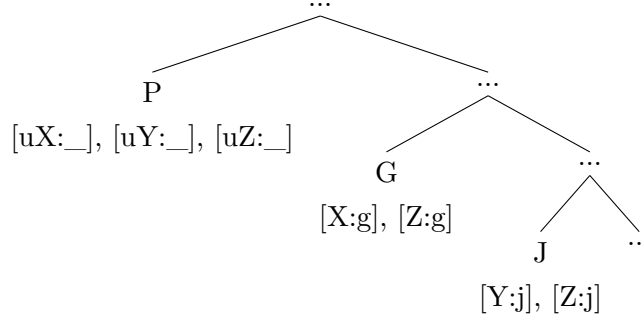
Depending on how the probes are ordered on the head *P*, different possibilities may arise. I show in Table 2.3 how agreement for the probes [uX:_], [uY:_] and [uZ:_] changes depending on the order of operations.

	order on the probe	u̶X	u̶Y	u̶Z
(a)	uX ≻ uY ≻ uZ	G	J	J
(b)	uX ≻ uZ ≻ uY	G	J	G
(c)	uY ≻ uX ≻ uZ	✗	J	J
(d)	uY ≻ uZ ≻uX	✗	J	J
(e)	uZ ≻ uX ≻ uY	G	J	G
(f)	uZ ≻ uY ≻ uX	✗	J	G

Table 2.3: Nested Agree with equally specific goals: G{X, Z}, J{Y, Z}.

As Table 2.3 shows, when Nested Agree is applied to a structure such as (39) it can give four possible results with respect to the probes on the head P, depending on the order of the operations. In contrast, the other algorithms discussed above just return a few possible combinations, as (40) illustrates.

(40)   a.   Nested Agree: {X:g, Y:j, Z:g}, {X:g, Y:j, Z:j}, {Y:j, Z:j}, {Y:j, Z:g}
         b.   MME, ECoMPS: {X:g, Y:j, Z:g}
         c.   MT, GSP: {X:g, Y:j, Z:g}, {X:g, Y:j, Z:j}

In the case of MME, minimality forces the probe to copy as many features as possible from the higher goal, copying the rest from the lower one. Therefore, for the tree (39) only a single possibility arises. In contrast, GSP does not assume minimality, but it compares different possible derivations. This principle, in the case where the goals are equally specific, returns two possible solutions: the local solution {X:g, Y:j, Z:g} and the anti-local solution {X:g, Y:j, Z:j}. Both results are achieved also via Nested Agree. In addition, Nested Agree may also lead to cases where a previous operation bleeds the satisfaction of

a subsequent operation (cases of failed Agree in (c), (d), (f) in the Table 2.3).

Note also that Nested Agree may give rise to cases of failed Agree (for instance, rows (c), (d), (f) in Table 2.3). Let me briefly highlight how Nested Agree works in these cases. If an intermediate operation fails to return a result, such as [uX:_] in case (c) in Table 2.3, then the next instance of Agree starts from the last checked position. In example (c) in Table 2.3, the third operation [uZ:_] starts from the goal of [uY:_], which is still the last stored position, since [uX:_] has not returned any value. The same can be said when it is the first operation that fails. We will see an example in case (c) in Table 2.5. If the first operation [uY:_] has not returned any result, then for the second one [uX:_] there is no lower position to start with, but instead the search starts from the sister of the probe. In example in (c) in Table 2.5, since [uY:_] has not returned any result, [uX:_] starts canonically from the sister of P.

An example of a configuration with two equally specific goals is also found in the analysis of auxiliary selection offered in this dissertation. This is the case of unaccusative verbs: Perf is the probe for [uInfl:perf] and [uπ:_], whereas the two equally specific goals at disposal are [π] on the DP$_{sbj}$ and [Infl:_] on v (assuming that defective v is not a π-probe). From the order of the probes on Perf emerges the preference for one goal over the other one. In Standard Italian, where the first operation is [Infl]-checking, Perf probes v for π-feature, thereby skipping the DP$_{sbj}$. This results can never be achieved under MME, MT, ECoMPS or GSP, since there is no "specific" candidate in the c-command domain of Perf. Instead, these theories predict that Perf probes the DP$_{sbj}$ for [π] and v for [Infl].

In the second scenario that I would like to present, the higher goal is the most specific one, whereas the lower one satisfies only one feature. This is represented in tree (41).

(41)   Specific higher goal
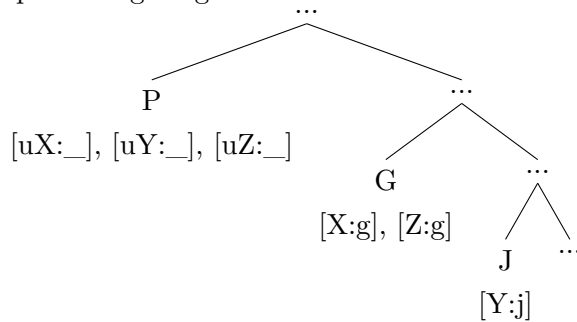
In the configuration shown in tree (41) (P {uX, uY, uZ}, plus a higher goal G {X, Z} and a lower goal J, {Y}), Nested Agree gives the following results.

(42)   a.   Nested Agree: {X:g, Y:j, Z:g}, {X:g, Y:j}, {Y:j, Z:g}, {Y:j}
        b.   MME, GSP: {X:g, Y:j, Z:g}
        c.   MT, ECoMPS: {X:g, Y:j, Z:g}, {X:g, Z:g}

The MME imposes that the probe-head checks as many features as possible with the

	order on the probe	u̶X	u̶Y	u̶Z
(a)	uX ≻ uY ≻ uZ	G	J	✗
(b)	uX ≻ uZ ≻ uY	G	J	G
(c)	uY ≻ uX ≻ uZ	✗	J	✗
(d)	uY ≻ uZ ≻uX	✗	J	✗
(e)	uZ ≻ uX ≻ uY	G	J	G
(f)	uZ ≻ uY ≻ uX	✗	J	G

Table 2.4: Nested Agree with specific higher goal: G{X, Z}, J{Y}.

higher goal, and successively with the lower goal, resulting in {X:g, Y:j, Z:g}. The same result is achieved with the GSP, although the underlying logic is different: the probe-head checks as many features as possible with the most specific goal, which is also the higher goal, and successively it discharges the remaining features with the other goal. In this case, all specificity-driven principles favor the higher, more specific goal. Under MT and ECoMPS, it is also possible that the lower less specific goal will never be targeted at all. In fact, if the different operations are in competition and only the most specific one can be performed, the operation targeting the lower specific goal may fail to apply (this might happen if probe satisfaction requires movement and if only one specifier can be formed). In contrast, with Nested Agree the solution can be different. The probe-head can also target the lower goal, leading to anti-specificity, given a certain order of operations. In particular, if the feature that is present only on the lower, less specific goal is discharged first, then the highest goal cannot be reached anymore, resulting in an anti-locality effect.

The only scenario where Nested Agree converges with the other proposals is when the goals stand in a subset relation and the higher one is more specific than the lower one. The tree (43) represents this configuration.

(43)   Specific higher goal; lower goal in subset relation
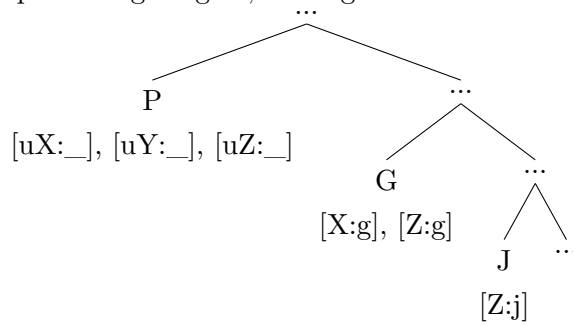
If the lower goal contains a subset of the features of the higher goal, Nested Agree can only give rise to a specificity-driven derivation, in accordance with minimality. With *P* {uX, uY, uZ}, a higher goal *G* {X, Z} and a lower goal *J*, {Z}, we predict the following result (shown in Table 2.5): both features are copied from the highest, most specific goal *G*.

Finally, let me briefly discuss the cases where the lower goal is the more specific one. In (44), I provide an example where the two goals bears different features: the higher item

	order on the probe	u̶X	u̶Y	u̶Z
(a)	uX ≻ uY ≻ uZ	G	✗	G
(b)	uX ≻ uZ ≻ uY	G	✗	G
(c)	uY ≻ uX ≻ uZ	G	✗	G
(d)	uY ≻ uZ ≻uX	G	✗	G
(e)	uZ ≻ uX ≻ uY	G	✗	G
(f)	uZ ≻ uY ≻ uX	G	✗	G

Table 2.5: Nested Agree with specific higher goal G{X, Z} and lower goal J{Z} in subset relation.

contains Y, the lower one X and Z.

(44)   Specific lower goal
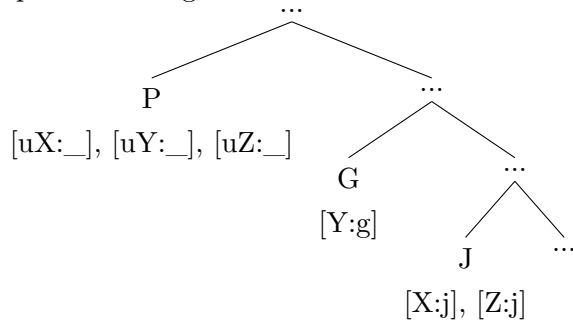
In the configuration shown in tree (44) (P {uX, uY, uZ}, plus a higher goal G {Y} and a lower goal J, {X, Z}), Nested Agree gives the following results.

	order on the probe	u̶X	u̶Y	u̶Z
(a)	uX ≻ uY ≻ uZ	J	✗	J
(b)	uX ≻ uZ ≻ uY	J	✗	J
(c)	uY ≻ uX ≻ uZ	G	J	J
(d)	uY ≻ uZ ≻uX	G	J	J
(e)	uZ ≻ uX ≻ uY	J	✗	J
(f)	uZ ≻ uY ≻ uX	J	✗	J

Table 2.6: Nested Agree with specific lower goal: G{Y}, J{X, Z}.

(45)   a.   Nested Agree: {X:g, Y:j, Z:j}, {X:j, Z:j}
        b.   MME, ECoMPS, GSP: {X:j, Y:g, Z:j}
        c.   MT: {X:j, Z:j}, {X:j, Y:g, Z:j}

Again, principles that obey minimality (MME, ECoMPS) establish that the probe-head targets the higher goal as much as it can. Thereafter, it can go on to the lower goal. Specificity-driven principles that prefer one operation over another one (MT) may cause the probe-head to completely skip the higher less specific goal for the sake of targeting a more specific lower goal that satisfies more features at once, leading to the result {X:j, Z:j}. However, this is not necessarily the case. Depending on the assumptions, MT can also lead

to the same scenario as MME does, {X:j, Y:g, Z:j} (for instance, if favoring an operation only means that that one should go first, and if all operations must be performed). This is what happens with GSP: the probe-head target the lower specific goal as much as it can, and successively it probes for the remaining feature, which is satisfied by the higher less specific goal. Interestingly, GSP returns the same result as MME and ECoMPS, but the order of probing is different. Under the former, the more specific goal is probed first; under the latter, the higher goal is probed first. As far as Nested Agree is concerned, it offers both outcomes, depending on the ordering of features.

The last example concerns the case where the more specific goal is the lower one and its features stand in a superset relationship with the less specific lower goal. This is represented in (46).

(46)   Specific lower goal; higher goal in subset relation

```
                    ...
                   /   \
                  P     ...
      [uX:_], [uY:_], [uZ:_]  / \
                            G   ...
                           [X:g] / \
                                J   ...
                          [X:j], [Y:j]
```
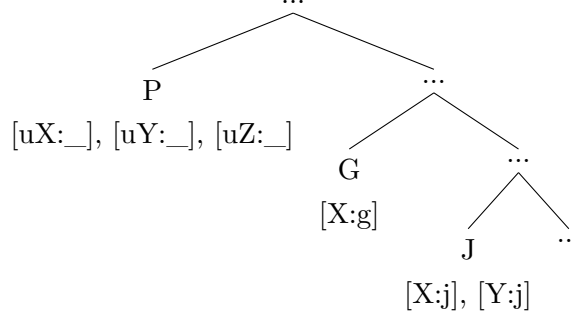
In the configuration shown in tree (46) (*P* {uX, uY, uZ}, plus a higher goal *G* {G} and a lower goal *J*, {X, Y}), Nested Agree gives the following results.

	order on the probe	u̶X	u̶Y	u̶Z
(a)	uX ≻ uY ≻ uZ	G	J	✗
(b)	uX ≻ uZ ≻ uY	G	J	✗
(c)	uY ≻ uX ≻ uZ	J	J	✗
(d)	uY ≻ uZ ≻uX	J	J	✗
(e)	uZ ≻ uX ≻ uY	G	J	✗
(f)	uZ ≻ uY ≻ uX	J	J	✗

Table 2.7: Nested Agree with specific lower goal J{X, Y} and higher goal G{X} in subset relation.

The outcomes in this scenario are as follows. Nested Agree results in different possibilities depending on the feature ordering: either {X:g, Y:j}, or {X:j, Z:j}. Principles subject to minimality (MME, ECoMPS) force the probe-head to target the higher goal as much as it can, moving on to the lower goal only after the highest one has been checked. In contrast, specificity-driven principles that may not be subject to minimality (MT, GSP) state that the head probe should only target the lower specific goal.

(47)   a.   Nested Agree: {X:g, Y:j}, {X:j, Z:j}
        b.   MME, ECoMPS: {X:g, Y:j}

      c.   MT, GSP: {X:j, Z:j}

To sum up, I have show that Nested Agree is not specificity-driven. Instead, this principle can lead to specificity, anti-specificity or anti-locality configurations, depending on the order of operations.

Finally, let me highlight once again that Nested Agree can also account for cross-linguistic variation, which is not explained by principles as the GSP, because they are not flexible enough. By assuming Nested Agree, different grammars can be generated by changing the order of the features on a head, as I have shown in the tables in this section. In this dissertation, the two different orders of the features on Perf shape the difference in auxiliary selection in Standard Italian and in the Southern dialects.

(48)   a.   Perf: $[\text{uInfl}] \succ [\text{u}\pi] \rightarrow \text{u}\pi$ from v Standard Italian
         b.   Perf: $[\text{u}\pi] \succ [\text{uInfl}] \rightarrow \text{u}\pi$ from DP_{sbj} Southern dialects

2.5.4 Nested Agree is not a transderivational principle

The other main difference of Nested Agree in comparison with MT, ECoMPS and GSP stems again from the ordering of features. MT, ECoMPS and GSP are transderivational constraints: a derivation is evaluated in contrast with other possible derivations and it is preferred if it is specificity-driven. When a head bears two features F_1 and F_2, there are different ways in which these features can be checked: among others, a derivation A, where F_1 is checked with X and F_2 with Y, and a derivation B, where F_1 and F_2 are checked with a single head X. MT, ECoMPS and GSP compare A and B, giving preference to the derivation B. This is enabled by the evaluation of structures at the end of the syntactic derivation or at the end of a cyclic domain via cyclic optimization. For example, MT makes use of cyclic optimization: at every step of the derivation, more than one possibility is evaluated and the best one is chosen.[28] However, this possibility should be excluded in a derivational, minimalist approach, as the one adopted by the present dissertation (and even in a representational framework: if possible, any framework that does without optimization should be preferred over another one that employs optimization). For each step, just a single option should be possible, which conforms to the principles of syntax that interact together within the same step of the derivation.

This is what Nested Agree does. Nested Agree is an obligatory computational conse-

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[28]According to van Urk and Richards (2015: 132), Multitasking is not necessarily a transderivational constraint. Multitasking refers to the "set of possible operations one head can trigger, so that it [the reference set] is evaluated locally, without the need to compare derivations." I do not see how this set could be evaluated without looking at the entire (available) structure, since the economy of the operations does not only depend on the features themselves, but also on their distribution in the structure. In addition, one of the candidates to be compared may involve more syntactic operations than another one. Even though Multitasking does not compare complete derivations, it considers some aspects of different structures, whatever the aspect may exactly be (representations, sequences of derivational steps, etc.). Hence, in this dissertation I treat the Multitasking-like principles as transderivational and inherently optimizing (and, consequently, compatible with a theory such Optimality Theory, rather than Minimalism).

quence of the ordering of features: when a probe starts its search, it must start from the last activated head. The previous operation sets the upper boundary for the next one, giving a more specific point to start with. There is no alternative derivation which is better or worse than another one. As far as minimality is concerned, the action of Nested Agree should not be intended as a consequence of the ranking of different constraints, where Nested Agree outranks the Minimality Link Condition, since in Minimalism all principles are equally important. In the case of Nested Agree, there is simply no MLC violation, since the new domain of Agree does not contain the intervener anymore (given a previous, well-formed Agree-Link).

The other problem of transderivational approaches is the issue of look-ahead, which is relevant in the case of minimality. How does the probe know that it is allowed to skip a closer, less specific goal, if there is a better matching goal lower in the structure? This could be possible if, for instance, first the (PIC-)accessible structure is scanned as a whole, on the search for possible goals. Then, on the basis of what has been found, the more suitable goal is chosen. This solution should not present a look-ahead problem. Nonetheless, the exact algorithm of Agree should be clearly addressed within those theories that allow for transderivational principles.

The solution that GSP proposes is to assume that the MLC is not an active constraint, but it rather emerges from the syntactic computation as a result of other syntactic principles. Given that minimality is not an independent, active principle, cases of anti-minimality are also attested (such as order-preserving movement). If minimality is not considered, the look-ahead problem does not arise. There is no look-ahead problem with MME and ECoMPS either, since probing a non-local goal is simply not an option because of minimality, no matter if there is a more specific goal in the structure. In other words, look-ahead is avoided either by ignoring minimality (GSP) or by excluding anti-minimality configurations (MME and ECoMPS). Nested Agree has the advantages of doing what the GSP allows (and even more: cf. the cross-linguistic typology in section §2.5.3, and the example of anti-specificity given by auxiliary selection for unaccusative predicates) and to be subject to minimality, but without incurring in any look-ahead problem. Specificity, which may cause the look-ahead problem, arises as an accident and it is not the driving force of Nested Agree. Hence, Nested Agree has a different computational status with respect to the other principles: it is exactly derivational.

Let me also add a note on MME. At the beginning of this section I have not stated that MME is a transderivational principle. In fact, this is not necessarily the case. Chomsky (2001) is not explicit about the way in which probing works under MME. If multiple probing proceeds in an alternating fashion, in the sense that each position is checked by each probe before scanning the rest of the tree, then MME is not transderivational. This is schematized in (49).

(49)   Alternating probing in MME
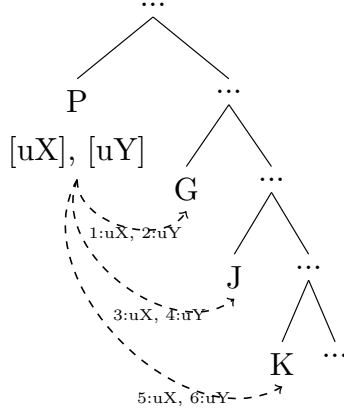
As far as the interaction with other principles is concerned, both the Minimal Link Condition and Nested Agree are computational conditions on the operation Agree. The former principle, minimality, is relevant for Agree in general. When anti-local configurations apparently arise by means of Nested Agree, this is possible if the violations of the MLC are not recorded because the intervener actually lies outside the domain of Agree. The latter condition, Nested Agree, is active only in the case of a single head carrying different ordered features (note that it might constrain even single Agree operations, but then its effect cannot be observed, since the last stored position is the head bearing the probe itself). Thus, Nested Agree is a constraint not on Agree itself, but rather on ordered Agree operations. It restricts how subsequent operations build on the top of previous ones and how their results are stored and become available for further operations. However, Nested Agree itself is still subject to the MLC. In fact, if the first checked position does not bear the relevant feature, then the search proceeds following the very same requirements of canonical Agree: (i) feature matching, (ii) c-command, (iii) minimality.

In this dissertation, I address an intervention problem with the idea that the Agree-path, subject to minimality, does not include the intervener because of Nested Agree. In the next section, I show that there are other anti-minimality cases that might be solved with a Nested-Agree-based solution.

2.6 Other applications of Nested Agree outside auxiliary selection

Even though Nested Agree does not necessarily give rise to locality violations, it can account for anti-minimality configurations. We may wonder if this is a desired result: should minimality violations find an explanation within syntactic theory? As I show in this dissertation, it seems that argument-structure-driven auxiliary selection brings about a locality violation. The locus of insertion of the auxiliary (Perf) is higher in the structure than the head determining the type of argument structure (v), with which Perf agrees, and they can be separated by different competitors for Agree (for instance, by the subject).

Hence, if the twofold aim is to keep minimality as a syntactic principle and to solve the puzzle of auxiliary selection, we need a tool that can account for the appearance of such effects. As I have highlighted in the previous sections, Nested Agree seems the only way to derive the pattern of auxiliary selection in Standard Italian.

Similarly, other anti-minimality scenarios are attested in other languages. These phenomena ask for an explanation that preserves the minimality constraint. In what follows, I suggest to address other cases of anti-minimality with the help of Nested Agree. The purpose of this section is to illustrate how a possible approach based on Nested Agree should look like, and does not intend in any way to provide an exhaustive analysis.

2.6.1 The intervener is a head: absolutive case assignment

In the case discussed in this dissertation, the intervener is located in the specifier of the head that is actually targeted by Agree (Perf agrees with v across the DP_{sbj} in Spec,v). I have already shown in section §2.4.4 that this case cannot be accounted for by the A-over-A type of minimality without making some wrong predictions (namely, HAVE insertion with unaccusative predicates). An even stronger piece of evidence in favor of Nested Agree (and against A-over-A minimality) is the case where the intervener is not located in the specifier of the adjacent projection, but it is instead a separated head.

Such an example is absolutive case assignment.[29] According to some theories, ergative case is assigned to the external argument by v and absolutive case is assigned to the internal argument by T (Murasugi 1992; Ura 2000; Müller 2009).[30] The operation of absolutive case assignment to the internal argument violates minimality, since the external argument in Spec,v figures as an intervener for case assignment from T. Note that in this case the intervener (external argument) and the real goal (internal argument) are not part of the same extended projection. In fact, in many ergative languages there is no evidence that the absolutive DP might have moved into the vP-domain (cf. low absolutive languages, Coon, Pedro, and Preminger 2014).

First of all, it should be said that intervention for case may not work as intervention for ϕ-Agree. In particular, case assignment may not be subject to *defective intervention*, meaning with this term that the intervener is inactive but still blocks the relation (Chomsky 2000). If there is no defective intervention for case, a DP, whose case has been already assigned, is transparent for further case assigners and can be skipped by them. The lack of certainty about the existence of defective intervention for case assignment does not mean that such scenarios do not exist. It also does not exclude that there is indeed defective intervention, but this is not visible because of other factors (such as a KP shell created by case valuation, which makes the DP invisible for probing by another case assigner).

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[29]I thank F. Heck for suggesting this example.

[30]This is a controversial point. Other competing theories (Mahajan 1989; Woolford 1997; Legate 2008) assume that v assigns both inherent ergative case to the DP in its specifier and absolutive case to the DP in its complement. There are also other approaches where absolutive case is assigned by v and ergative case is assigned by T, cf. for instance Levin and Massam 1985; Bobaljik 1993.

In fact, it is plausible that such cases exist because case assignment is also mediated by Agree (if case assignment is valuation).[31]

Ultimately, the question whether there is defective intervention with respect to case assignment is an empirical issue. There is empirical evidence for defective intervention for the EPP-feature and for ϕ-Agree (although some of these cases, such as tough-movement and Romance subject-to-subject raising, may not involve defective intervention after all, cf. Bruening 2014 and references therein). As far as I know, I am not aware of any unequivocal case of defective intervention that involves case assignment. For instance, in the Icelandic examples in section §2.6.3.2 (where the intervener is a dative experiencer), the problem is ϕ-Agree and not case assignment. In fact, the intervening dative leads to default agreement, but not to lack of nominative case on the internal argument. In contrast, I am aware of different cases where a DP with valued case does not disrupt the relation between a case assigner (T or v^*) and a DP that lacks case. Some examples are nominative case assignment in quirky subject constructions (cf. the Icelandic and Italian examples in section §2.6.3.2), long-distance multiple nominative case assignment in Japanese (Hiraiwa 2001), where finite T can cross intervening dative nominals, case assignment in double object constructions, at least in those theories where the applicative head assigns dative to the indirect object in its specifier and v accusative to the direct object across the indirect object.

Possibly, lack of defective intervention may be seen as an effect of the *activity condition* (Chomsky 2000, 2001). This prescribes that inactive elements are not accessible for further operations; an inactive element is an XP that has eliminated its uninterpretable features (case, wh-). If this condition is accepted, it should follow that a DP with already valued case is not visible for further case assigners, although it might, eventually, remain still visible for other types of probes, such as ϕ-probes (cf. also Nevins 2005; Oxford 2017 for discussion of this principle).

To sum up, if case assignment is not subject to defective intervention, and if the object remains accessible to T, the object should be able to receive absolute case from T despite

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[31]Case assignment formally looks very much like an instance of Agree: an unvalued case feature receives a value from a c-commanding matching feature. If case assignment is considered as a valuation process, it is possible that it requires a probing operation. If it is based on probing, then it should be subject to defective intervention. However, there are some differences between case assignment and a probing process such as ϕ-Agree. For instance, as we will see in chapter 4, an unvalued case feature is a problem (thus, it triggers edge feature insertion), while an unvalued ϕ-feature or a probe that has failed to agree are perfectly tolerated (and they do not lead to EF-insertion).

In this dissertation, I argue that case assignment is not subject to defective intervention (although nothing of the analysis of auxiliary selection hinges on this). A valued case feature, which is c-commanded by a case assigner and c-commands another (unvalued) case feature, does not intervene between the assigner and the unvalued feature. I suggest that this is because the feature responsible for case assignment is a valued probe that looks for a matching *unvalued* feature: P[ucase:x], G[case:__]. This is different from unvalued probes, which simply look for a matching feature: P[uϕ:__], G[ϕ:α/__]. An intervening item J[case:y] does not block case assignment because a probe of the type [uF:value] needs a goal with the same *unvalued* feature. In other words, J[case:y] is not a matching goal for P[ucase:x]. In contrast, if the probe is of the type [uF:__], whatever item with a feature F would satisfy it and stop Agree. Hence, I think that the reason why defective intervention does affect ϕ-Agree, but not case assignment, lies in the difference between valued and unvalued probes.

the presence of the ergative subject, which can be ignored by T because its case has already been valued by v.

Instead, if case assignment is indeed subject to defective intervention, Nested Agree offers an alternative solution for the configuration discussed here. Under the assumption that T probes v for some features, such as the [Infl] feature used for Italian, this first operation [uInfl] allows the second operation, case assignment, to skip the subject (and then case assignment to the object proceeds via v: I leave out the technicalities). Hence, Nested Agree, plus the order on T [Infl] $\succ$ [case:abs] solves the problem of minimality.

An important remark should be made here. Independently of Nested Agree, the general issue for this approach to absolutive case assignment is the phase problem. In order for the object to be accessible for T, the underlying assumption is that transitive vPs in ergative languages are not phases. This is in contrast with what I have argued in this dissertation. I leave the issue of absolutive case assignment for further research.

2.6.2 Anti-minimality and movement: wh-movement

2.6.2.1 English

One of the first formulation of the minimality requirement is the *superiority condition* (Chomsky 1973: 243). When there are two phrases which could in principle move because they bear the relevant feature, only the structurally highest one moves. This explains why in English in a sentence with more than one wh-phrase only the highest one can move to Spec,C, as (50) shows.

(50) a. Who$_i$ bought t$_i$ what?
      b. *What$_j$ did who buy t$_j$?

Minimality prescribes that the fronted wh-phrase in (50) is the subject. Let us look at the derivation, represented in (51). Given the assumption that v is a phase, the object must first move to the edge of the phase for successive cyclic movement. In fact, in the simple case 'what did you buy?' *what* can be attracted by the C head because this wh-phrase has escaped the phase domain. Hence, successive cyclic movement of the wh-phrase to Spec,v should happen also when the external argument is a wh-phrase as well. Movement of the object is caused by an edge feature (EF) [•wh•] on v that triggers intermediate movement of the wh-phrase to Spec,v (Chomsky 2000, 2001). After this movement step, the object is in a higher position than the subject. Hence, C should attract the highest wh-phrase, i.e. the object.

(51) a. [wh-sbj v [V wh-obj]]   (Merge DP$_{sbj}$)
      b. [wh-obj$_i$ wh-sbj v [V t$_i$]]   (EF)
      c. [C ... [wh-obj$_i$ wh-sbj v [V t$_i$]]]   (Merge C)
      d. [wh-obj$_i$ C ... [t$_i$ wh-sbj v [V t$_i$]]]   (Move whP to Spec,C)

The data in (50) shows that the derivation cannot be as in (51). There are two main solutions to this problem. Under the first option, successive cyclic movement to the edge of vP applies before external Merge of the subject. The derivation is in (52).

(52) a. [wh-obj$_j$ v [V t$_i$]]   (EF)
      b. [wh-sbj wh-obj$_i$ v [V t$_i$]]   (Merge DP$_{sbj}$)
      c. [C ... [wh-sbj wh-obj$_i$ v [V t$_i$]]]   (Merge C)
      d. [wh-sbj$_j$ C ... [t$_j$ wh-obj$_i$ v [V t$_i$]]]   (Move whP to Spec,C)

This solution seems to work. However, in this dissertation I argue that edge feature insertion must be the last operation within a phase. In particular, v first discharges its structure building feature [•D•], introducing the external argument. After all its features have been discharged, an EF can be inserted on it, triggering movement of the unchecked [uwh] feature to its edge (cf. chapter 4 for details). Hence, the derivation in (52) is not compatible with what I assume in this dissertation.

Alternatively, the final steps of the derivation in (52) can be reached by assuming the additional mechanism of Tucking-in (Mulders 1997; Richards 1997) (briefly discussed in section §2.3.2), as shown in (53).

(53) a. [wh-sbj v [V wh-obj]]   (Merge DP$_{sbj}$)
      b. [wh-sbj wh-obj$_i$ v [V t$_i$]]   (EF with Tucking-in)
      c. [C ... [wh-sbj wh-obj$_i$ v [V t$_i$]]]   (Merge C)
      d. [wh-sbj$_j$ C ... [t$_j$ wh-obj$_i$ v [V t$_i$]]]   (Move whP to Spec,C)

In a Tucking-in derivation, the object moved by the edge feature lands in an inner specifier of v. However, since in this dissertation I do not make use of Tucking-in because of its violation of strict cyclicity, the derivation in (53) must be excluded as well.

There is an alternative derivation where the DP-subject is moved to Spec,T by the EPP-feature on T. By means of Nested Agree, this derivation can generate the data in (50). As (54) shows, the object is located in the outer Spec,v because of EF-insertion. Then, T enters the derivation. Let us assume that the features on T are so ordered: [ucase:nom] $\succ$ [uϕ:_] $\succ$ [EPP]. Firstly, T assigns nominative case to the subject, assuming that there is no intervention for case assignment (cf. discussion in section §2.6.1 and other examples in section §2.6.3). Secondly, Nested Agree forces T to ϕ-agree with the DP$_{sbj}$ across the DP$_{obj}$, although the object is a higher matching goal. Thirdly, T must move the subject to Spec,T, again because of Nested Agree. When C enters the derivation, it attracts to its specifier the wh-subject located in Spec,T. The steps are exemplified in (54).[32]

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[32]Actually, one more assumption is needed here. Once the object has moved cyclically to the edge of vP in (54-b), it cannot be spelled out there. One may assume that the derivation crashes if the wh-object remains in the intermediate position reached by cyclic movement. It must move on, but it cannot do so because the wh-subject is moved instead, assuming that in English only a single Spec,C can be created by wh-movement. It cannot move higher up, but it cannot spelled out in this intermediate position, as the data in (50) shows. In fact, it must be spelled-out in its base position (assuming the copy theory of

(54) a. [wh-sbj v [V wh-obj]]   (Merge DP$_{sbj}$)

b. [wh-obj$_i$ wh-sbj v [V t$_i$]]   (EF)

c. [T [wh-obj$_i$ wh-sbj v [V t$_i$]]]   (Merge T)

d. [wh-sbj$_j$ T ... [wh-obj$_i$ t$_j$ v [V t$_i$]]]   (EPP under Nested Agree)

e. [C [wh-sbj$_j$ T ... [wh-obj$_i$ t$_j$ v [V t$_i$]]]]   (Merge C)

f. [wh-sbj$_j$ C [t$_j$ T ... [wh-obj$_i$ t$_j$ v [V t$_i$]]]]   (Move whP to Spec,C)

As (54) shows, the relevant configuration that allows the fronting of the wh-sbj over the wh-obj in (50) is the presence of the wh-sbj in Spec,T when C enters the derivation. Minimality is respected in all the intermediate steps. The apparently non-local raising of the wh-sbj over the wh-obj by the EPP-features in (54-d) is allowed by Nested Agree.

The present analysis relies on the assumption that T first assigns case on the subject. A relevant question concerns what happens in non-finite configurations, where T does not assign nominative to the subject, as in (55).[33]

(55) a. Who did Mary believe to have bought what?

b. *What did Mary believe who to have bought?

The derivation of these cases, which is similar to (54), is shown (56).

(56) a. [wh-sbj v [V wh-obj]]   (Merge DP$_{sbj}$)

b. [wh-obj$_i$ wh-sbj v [V t$_i$]]   (EF on v)

c. [T [wh-obj$_i$ wh-sbj v [V t$_i$]]]   (T)

d. [matrix-sbj v [T [wh-obj$_i$ wh-sbj v [V t$_i$]]]]   (matrix sbj)

e. [wh-sbj$_j$ wh-obj$_i$ matrix-sbj v [T [t$_i$ t$_j$ v [V t$_i$]]]]   (EF on matrix v)

f. [matrix-sbj$_k$ T [wh-sbj$_j$ wh-obj$_i$ t$_k$ v [T [t$_i$ t$_j$ v [V t$_i$]]]]] (EPP on T)

g. [wh-sbj$_j$ C [matrix-sbj$_k$ T [t$_j$ wh-obj$_i$ t$_k$ v [T [t$_i$ t$_j$ v [V t$_i$]]]]]] (Move whP to Spec,C)

First, v merges with the wh-subject (56-a), and then it moves the object to an outer Spec,v via EF (56-b). The head T is introduced in the derivation (56-c). It is non-finite,

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movement). Without this assumption, the derivation in (54) generates a sentence like *'who has what bought?', with the object located above the lexical verb (for the present case (50), the derivation (54) works well because the tensed verb is in T, correctly leading to 'who bought what?'). Note that this assumption is needed by any other approach that adopts the phase theory and feature-driven successive cyclic movement (and in particular, free edge feature insertion).

Let me also add another comment. Since the wh-obj is pronounced in the internal argument position, its movement to Spec,v is a case of covert movement. In covert movement configuration, it seems that the only available position for Spell-out of the wh-phrase is the base-position. This configuration is found again in the scenario of participle agreement in the absence of A-movement, which I consider to be a case of covert movement as well. In examples (65), (66) in section §4.5 of chapter 4, the internal argument, which has undergone covert movement (under my analysis), cannot be spelled out on the left of the adverb *bene*, which is a licit position for internal arguments in general. I think that this might suggest that there is a constraint on covert movement that specifies the possible Spell-out positions, but I leave this issue for future work.

[33] I thank F. Heck for pointing out such a case.

and does not assign nominative case. If it does not have an EPP-feature, the structure in (56-c) is selected by the matrix verb (with the order wh-obj > wh-sbj). If it has an EPP, the wh-obj is raised to Spec,T (resulting again in the same order wh-obj > wh-sbj as in (56-c)). Note that in this case the EPP on non-finite T ends up raising the accusative argument. Instead, in clauses without wh-phrases the subject is higher than the object and is attracted to Spec,T instead of the object. Then the matrix verb is introduced. Matrix v assigns accusative to the wh-subj (across the wh-obj, which has already its case valued, assuming lack of defective intervention for case) and agrees with it because of Nested Agree. Thereafter, v introduces the matrix subject, as shown in (56-d). Then, v raises both wh-phrases via edge feature insertion. Given minimality, the EF raises first of all the higher wh-obj, then the lower wh-sbj, as shown in (56-e). Independently of which item is located in the outer specifier of v, when T enters the derivation it will assign nominative case to the matrix subject because it is the only DP with still unchecked case. Then, it ϕ-agrees with it and it raises it to its specifier because of the EPP-feature, as illustrated in (56-f). Finally, when C enters the derivation, it attracts the closest wh-phrase to its specifier. Given the structure in (56-f), the wh-sbj moves to Spec,C, while the wh-obj cannot reach Spec,C because English does not allow for multiple specifiers. Consequently, it is spelled out in the base position (for reasons to be clarified, cf. footnote 32), resulting in the string in (55).

I address in more details the interaction of T with the subject across the object in section §2.6.3.

2.6.2.2 Bulgarian

Other languages exhibit multiple wh-constructions where more than one phrase moves to Spec,C. Interestingly, for some languages the order of the wh-phrases in the left periphery is exactly the same as the base-merge order (*wh-sbj wh-obj*). Examples come from Bulgarian and Romanian.

(57)   *Bulgarian*

      Koj   kogo   vižda
      who.NOM.3SG who.ACC.3SG see.PRS.3SG
      'Who sees whom?'   (Rudin 1988: 449)

The order in (57) is unexpected as far as minimality is concerned. Assuming that v is a phase, and following the derivation proposed for English in (54), C merges with a structure where the DP$_{\text{sbj}}$ is the higher wh-phrase, as in (54-e). C should first attract the subject and then the object, resulting in the order *wh-obj wh-sbj V*. In other words, minimality (together with strict cyclicity) prescribes that the linear order of the wh-phrases appears inverted as compared to their base order. Hence, this kind of order-preserving movement

seems to imply non-local movement steps.[34]

A specificity-driven analysis of (57) has been proposed by Lahne (2012: 11-12). Under the assumption that accusative case is more complex than nominative case (case is decomposed into more primitive features), the accusative direct object is more specific than the nominative external argument. C firstly attracts the goal that is most specific in terms of case features, due to the General Specificity Principle (introduced in (38) in section §2.5.2). Therefore, the object is attracted by C as the first item.

A possible Nested Agree derivation for multiple wh-fronting in (57) is as follows. If movement consists both of an Agree operation and a Move operation (feature-based account of movement, following Chomsky 1995; Abels 2012; cf. chapter 4 for discussion), the C head carries both an Agree feature and a Move feature (respectively, [uwh] and [•wh•]). I propose that Agree features are discharged before Move features: [uwh] ≻ [•wh•]. In addition, I assume that C does not bear multiple wh-features, but only a single pair of [uwh] ≻ [•wh•]. In general, I propose that multiple Merge features of the same type (for instance, multiple edge features or [•wh•]) consist of a single pair of Agree and Merge features, where the Agree feature undergoes Multiple Agree and the Merge feature attracts multiple items (cf. also the discussion of participle agreement with multiple clitics in section §4.4.5 in chapter 4). For features triggering multiple Agree and multiple Merge, cf. Hiraiwa (2001); Nevins (2011); Deal (2015). However, for the purpose of the present analysis it is only crucial that C bears a single Agree feature [uwh] undergoing Multiple Agree, whereas there can be more than one Merge feature, each of which is discharged by movement of a wh-phrase to Spec,C. Assuming that the derivation goes as in (54) for English (the only difference being that in Bulgarian multiple specifiers of C can be created, while in English only one wh-phrase can reach the terminal position Spec,C), C selects the structure in (58).[35]

(58)   [wh-sbj$_j$ T ... [wh-obj$_i$ t$_j$ v [V t$_i$]]]   (EPP under Nested Agree)

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[34]This configuration can be derived in accordance with the MLC by means of a further mechanism, such as Tucking-in (Richards 1997, 1998), which avoids the appearance of the minimality violation. In a Tucking-in derivation, the lower wh-obj moves after the higher wh-sbj has been attracted to Spec,C, but it lands in an inner specifier. The general problem of Tucking-in lies in its violation of strict cyclicity (cf. discussion in chapter 4).

Another possibility to derive the Bulgarian data is to make use of a separate workspace (WSP), as proposed by Heck and Himmelreich (2016); Heck (2016). The wh-phrases that are attracted by the same single probe are temporarily stored on a stack (with the "last-in-first-out" property) in the workspace before they are remerged. In accordance with minimality, the subject is attracted first: it is temporarily removed from the syntactic tree and stored in the stack. Successively, the object undergoes the same process. When they are introduced in the landing position, the object must be merged first, given its outer position on the stack. Thereafter, the subject is merged in an outer specifier, resulting in the order in (57). For the idea of the stack, cf. also Doggett (2004); Stroik (2009); Unger (2010).

[35]In (58), I assume that Bulgarian has subject raising to Spec,TP, due to an EPP-feature on T, following Lambova (2004). There are also structures where the subject probably remains in its base position and the verb raises instead, such as participle fronting. In this case, the EPP-feature on T is satisfied by head movement (Harizanov 2019: 18). Note that the issue of subject raising is not entirely unquestionable. For instance, it has been proposed that the satisfaction of the EPP via verbal movement rather than via subject raising should be the only possibility in Bulgarian (Tasseva-Kurktchieva and Dubinsky 2009).

C bears [uwh] ≻ [•wh•]. The [uwh] probe targets the subject in Spec,T as a first goal, and then it reaches the object in Spec,v, in accordance with minimality and Nested Agree.[36] Once this Multiple Agree operation has been carried out, the last stored position is the last goal of [uwh], i.e. the lower wh-phrase, which is the wh-object in Spec,v. Now the Merge feature on C is discharged. Nested Agree forces the structure building feature [•wh•] to start its search from the wh-object, which is the last stored position. Therefore, it raises the object to Spec,C. After this step, the last stored position becomes Spec,C, which is the landing site of the moved element. Hence, when C uses again its [•wh•] feature, the search domain is again the whole c-command domain of C, since the last stored position is Spec,C. The search starts again from C, which is the location of the probe, once the derivation has reached the higher position Spec,C. C finds the subject in Spec,T and raises it to an outer specifier. The resulting surface order is *wh-sbj wh-obj V*, as in the example (57).[37] These operations are represented in (59).

(59)   Multiple wh-fronting in Bulgarian with Nested Agree
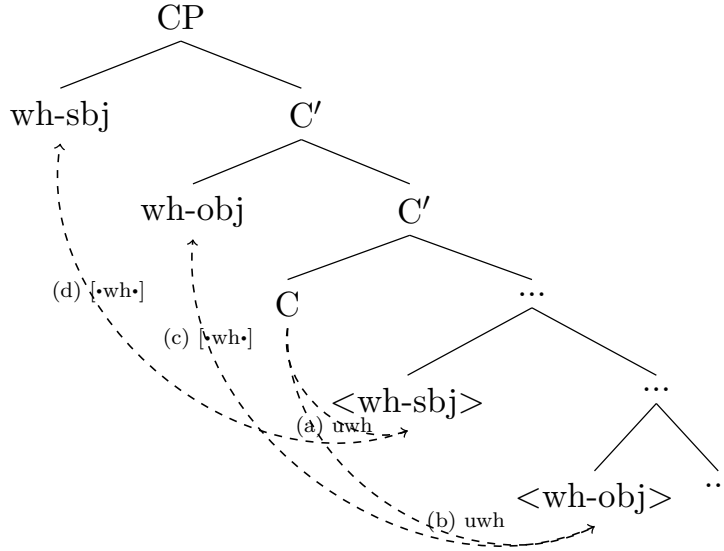
The crucial point of this discussion consists of the question whether Nested Agree can be applied to movement operations or not. In the definition (13) provided in section §2.4, I consider Nested Agree to be a constraint on ordered *Agree* operations. However,

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[36]If C bears distinct features, the array is [uwh₁] ≻ [uwh₂] ≻ [•wh₁•] ≻ [•wh₂•]. If this is the case, [uwh₂] should not be able to target the object across the subject. In fact, there should be an intervention effect by the subject, with the result that the subject is targeted both by [uwh₁] and [uwh₂]. The solution I propose is to have a single feature, able to undergo Multiple Agree (Hiraiwa 2005). Another possibility is to make use of a separate workspace (Heck and Himmelreich 2016; Heck 2016), as described in footnote 34. In that scenario, the subject is targeted first by [uwh₁] and temporarily removed from the structure, so that [uwh₂] can reach the object without any problem.

[37]The approach sketched in this section is only a suggestion for future work. A detailed analysis of the syntax of Bulgarian is essential to determine the exact movement paths of the wh-phrases, in order to verify if the structure in (59) is the actual one.

Nested Agree can be generalized to each subsequent operation triggered by the same head, as I suggest in the present analysis. Nested Agree could affect not only Agree in the sense of feature matching, but also case assignment and movement.[38] If this is the case, when Nested Agree applies to Merge features, it has the particular consequence of enlarging the domain of the subsequent operation to the whole c-command domain, since the last checked position is the landing site of the moved item (generally, the specifier of the operation-triggering head). I have just shown this effect for Bulgarian in (59). In this derivation, Nested Agree has the following two effects: it forces [•wh•] to probe into a restricted domain after [uwh] has returned a lower goal, and it enlarges the domain again for the second application of [•wh•] after its first application has returned a higher position at the end of the operation.[39] Another way to relate Nested Agree to movement is to consider movement as feature-driven, a view that I adopt in this dissertation. In general, more case studies on the application of Nested Agree to Merge features are left for future research.

2.6.3 Anti-minimality and case assignment

2.6.3.1 VOS in Spanish and Italian

In the analysis of auxiliary selection presented in this dissertation, I address the case of agreement with the object across the intervening external argument, represented in (60). The mirror scenario is also attested: agreement with the subject across an intervening object, as illustrated in (61).

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[38]The reader may also wonder whether selectional features are subject to Nested Agree. Since these are discharged first and are satisfied by the sister of the relevant head, the search domain of the following operation is not changed by Nested Agree, but it is instead again the sister of that head. Hence, Nested Agree has no visible consequence when applied to selectional features. Note that it could also be the case that Agree does not constrain the first operation triggered by a head, but only the subsequent one.

[39]I have proposed that, when Nested Agree applies to (internal-) Merge features, the search domain is updated and enlarged again because the last stored position is the landing site of the movement operation. The reader may wonder whether this process involves a violation of the Strict Cycle Condition, at least in its stricter version. A possible solution considers the fact that movement operations involve the creation of a new root node (F. Heck, p.c.). This is prescribed by the *Extension Condition* (Chomsky 1995): Merge should be effected at the root. Consequently, in contrast to a pure Agree operation, movement satisfies the SCC even if there is already a specifier that has been created before.

In general, it should be stressed that this account is not more countercyclic than any other possible analysis of multiple operations. In fact, there is a general problem of cyclicity for multiple operations. Anytime that a head X must move more than one item to its specifier (for example the unaccusative object and a clitic), once one of these operations is performed, since the current active node is the XP, then the second operation should not be possible anymore because of strict cyclicity. In fact, once Spec,X is built, it is not possible anymore for X to perform a search operation in its complement: the second item in the complement is not reachable anymore. I offer a brief discussion of the interaction of the Strict Cycle Condition with other operations in sections §4.3.1, §4.3.4.2 in chapter 4.

(60) Perf-object Agree across the subject (61) T-subject Agree across the object
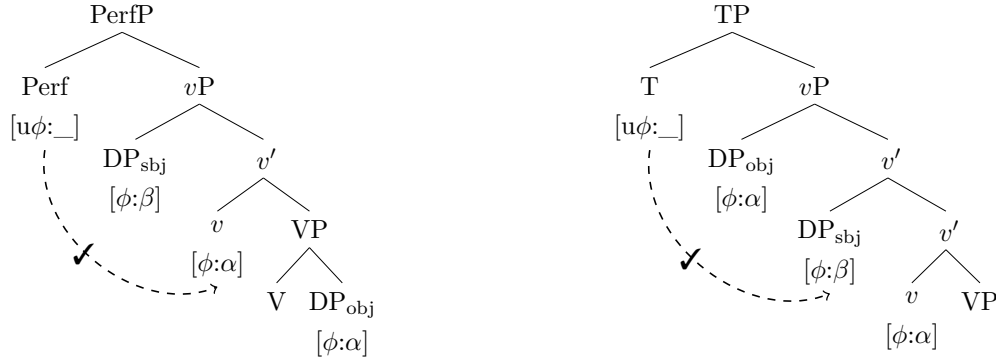
There are many cases like (61), where at the relevant step of the derivation the object is structurally higher than the subject, and nonetheless T agrees with the subject. This happens in languages where verbal agreement is always controlled by the nominative argument, even when this is c-commanded by another argument, for instance a dative or an accusative DP. An example is subject agreement in VOS clauses in Spanish and in Italian.

In VOS sentences, the subject should not be able to receive nominative case from T and to agree with T because of object intervention (Zubizarreta 1999; Costa 2000; Belletti 2004; Gallego 2013). However, the subject receives nominative case and agrees with T. As the Spanish example in (62) shows, the nominative argument controls agreement on the finite verb, although the object is located in an intermediate position between the verb and the subject.

(62) Compraron un libro todos los estudiantes.
      buy.PST.3PL a   book all   the students
      'All the students bought a book.'   (Gallego 2013: 418)

This structure has been analyzed by Ordóñez (1998); Gallego (2013) as a case of object shift (plus standard V-to-T movement). In (62), the object c-commands the subject, as shown by its ability to bind a pronoun in the subject position, exemplified in (63).

(63) Recogió   cada coche$_i$ su$_i$ propietario.
      pick.up.PST.3SG each car   its owner
      'Its owner picked each car up.'   (Gallego 2013: 416)

Similar data can also be found in Italian. The VOS order is possible if the prosodic stress is on the subject, which is a necessary condition to have a transitive postverbal subject (Cardinaletti 2004, 2018).[40] In (64) is shown an example of VOS clause.

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[40]In fact, VOS structures are typically found as answers where the subject constitutes the new information (i-a), or with contrastive focus (i-b).

(i)   a. Chi capirà   il problema? Capirà   il problema Gianni.
          who understand.FUT.3SG the problem understand.FUT.3SG the problem Gianni

(64)   a.   Ha   letto   il   giornale   GIANNI.
            have.PRS.3SG read.PRTC the newspaper Gianni

       b. ??Ha   letto   il   giornale   Gianni.
            have.PRS.3SG read.PRTC the newspaper Gianni
            'Gianni has read the newspaper.'

Belletti (2001b, 2004) has proposed an analysis of VOS structures in terms of clause-internal VP-topicalization, shown in (65). The postverbal subject is located in the specifier of a focus position in the low left periphery above vP, whereas the VP is fronted above the subject (for a similar analysis for Spanish, cf. Zubizarreta 1998).

(65)   [$_{TopP}$ [$_{VP}$ **V O**]$_i$ Top [$_{FocP}$ **S**$_j$ Foc [$_{vP}$ t$_j$ v t$_i$]]]

In (65), the VP is located in the topic position right above the clause internal focus (Belletti 2004: 35). From this position, the object does not c-command the subject. In fact, it cannot bind a pronoun in the subject position, as shown in (66) (cf. also the difference between (66) and (63)).

(66)   *Hanno   salutato   Gianni$_i$ i   propri genitori$_i$.
        have.PRS.3PL greet.PRTC Gianni the own   parents
        'His own parents have greeted Gianni.'   (Belletti 2004: 36)

However, there is another possible analysis for VOS clauses in Italian. According to Cardinaletti (2001), at least some VOS clauses involve the structure in (67). In this case, the object is left dislocated and the subject is focused in situ.

(67)   [$_{TP}$ **V**$_j$+T [$_{vP}$ **O**$_i$ **S** v [$_{VP}$ t$_j$ t$_i$]]]

The analysis of VOS in (67) extends the account in terms of object shift and verb movement proposed for Spanish to Italian (Cardinaletti 2001, 2004, 2018). According to Cardinaletti (2018), the subject remains in the vP-internal thematic position when it surfaces postverbally (and this is valid for all postverbal subjects, which can be narrow informational and contrastive foci, part of a wider focus, or marginalized topics). In (67), the object is fronted to the preverbal position, where it c-commands the subject. As in the Spanish example in (63), the object can bind a pronoun contained in the subject position in (68-a,b), and a moved object pronoun c-commanding an R-expression leads to a Principle C violation in (68-c).[41]

            'Who will understand the problem? Gianni will understand the problem.' (Belletti 2004: 34)
       b.   Ha   detto   la   verità GIANNI (non Mario).
            have.PRS.3SG say.PRTC the truth Gianni   not Mario
            'Gianni has told the truth, not Mario.'   (Belletti 2004: 38)

[41]Note also that example (66) improves if the subject-oriented possessive *propri* is substituted with the possessive *suoi*, leading to *hanno salutato Gianni$_i$ i suoi$_{i/j}$ genitori*.

(68)   a.   Ha   visitato   ogni_i ragazzo SUA_i MADRE.
            have.PRS.3SG visit.PRTC every boy   his   mother
            'Their own mother has visited every boy.'

       b.   Ha   visitato   Gianni_i UN COLLEGA DELLA PROPRIA_i
            have.PRS.3SG visit.PRTC Gianni a   colleague of.the own
            MOGLIE.
            wife
            'A colleague of his wife has visited Gianni.'

       c.   *Ha   visitato   anche lui_i   LA MADRE DI GIANNI_i.
            have.PRS.3SG visit.PRTC also   NOM.3SG.M the mother of Gianni
            'He_i has visited Gianni_i's mother, too.'   (Cardinaletti 2001: 129)

Under this analysis, the data in (66), where the object does not c-command the subject, are explained via a different derivation that involves right dislocation of the subject (Cardinaletti 2001). In (66), the subject is extraposed on the right and a *pro* occupies the subject position, as shown in (69).

(69)   [$_{TP}$ pro T [$_{vP}$ t$_i$ v [$_{VP}$ **V O**] [**S$_i$**]]]

Whatever analysis of VOS structures is chosen (as remnant VP-movement, or as object shift), the DP$_{obj}$ is located in a higher structural position than the DP$_{sbj}$. Under the VP-fronting analysis (Belletti 2001b, 2004), the object does not c-command the subject. In this case, no minimality violation arises for the relation between T and the subject, since the object does not c-command the subject out of the fronted VP. Nonetheless, the object is c-commanded by T, and is the closer possible matching goal for ϕ-Agree on T, depending on the assumptions on Agree. In fact, if Agree employs a breadth-first search, rather than a depth-first search (cf. Branan and Erlewine (to appear) for discussion), then the object in the dislocated VP is closer to T than the subject. Hence, one might expect it to intervene (even though it does not c-command the subject).[42] Under the object shift analysis (Cardinaletti 2001), the canonical scenario of intervention arises: T agrees with the subject, which is c-commanded by the intervening object. Therefore, the subject is not expected to be the controller of ϕ-Agree on T. Instead, it is.

How can T assign nominative case to the subject and agree with it in Spanish and in Italian VOS structures? The problem of nominative case assignment can be circumvented by assuming that the object is inactive for case assignment because its case has already been checked. In fact, an intervening DP that bears valued case does not block case assignment: a case assigner looks for a goal that has not received case yet. Hence, there is no defective intervention for case assignment, as already highlighted in section §2.6.1. T assigns nominative case to the subject, despite the intervening accusative object.

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[42]Although this is not the standard case of minimality, where the intervener c-commands the actual goal (cf. for instance the definition of the MLC in (7), Chomsky 2001: 27), there are cases where a process might target a DP within a fronted VP rather than a lower DP. Such an example is the smuggling derivation of passives proposed by Collins (2005b,a). The internal argument is located within a PartP in Spec,Voice. From this position, it is raised to Spec,T instead of the external argument, which is located in Spec,v.

As far as agreement is concerned, how can T agree with the nominative argument across the object in VOS clauses? Previous analyses of VOS structure have highlighted that these sentences are somehow related to verb movement, similarly to what happens in object shift in Scandinavian. In Spanish, the object can move if the verb does as well. VOS clauses are ungrammatical when they contain an auxiliary, as shown in (70-a). This is because, when an auxiliary is present, the lexical verb does not raise to T, thereby blocking object shift. However, if the lexical verb moves above the object, then the clause is grammatical again (70-b).

(70)   a. *Ayer   estaba   un libro Juan leyendo.
           yesterday be.PST.3SG a   book Juan read.GER

       b. Ayer   estaba   leyendo   un libro Juan.
           yesterday be.PST.3SG read.GER a   book Juan
           'Juan was reading a book yesterday.'   (Gallego 2013: 425-426)

Gallego (2013) has argued that head movement can give rise to equidistance effects, following Chomsky (1995). In particular, verb movement renders object and subject equidistant (i.e., equally close) to T. Hence, in VOS the object is invisible for T. Equidistance might clarify why the subject is accessible to T. However, I think that it does not explain why T agrees with the subject and not with the object.

Another analysis based on verb movement has been proposed by Heck (2016: 53-58). First of all, before object shift takes place, T agrees with the subject in Spec,v and assigns it nominative case. Assuming that movement involves temporary removal of the moved item to a separate workspace (WSP) (cf. also footnote 34), when head movement applies, the head T, v and V are removed and stored in the separate workspace. At this point, object shift can take place. When the complex head T+v+V is introduced again in the derivation, the object is located in an outer Spec,v, but crucially it does not intervene because T has already agreed with the subject. Although this type of derivation is in principle compatible with Nested Agree (cf. also discussion in section §5.6.2 of chapter 5), I would like to sketch an alternative approach that only makes use of Nested Agree.[43]

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[43]In the Spanish case with the auxiliary in (70-a), the lexical verb stays in situ. For Scandinavian languages, it has been proposed that object shift requires verb movement, as is stated by the *Holmberg's generalization* (Holmberg 1986). This constraint has been shown to be effective also in Romance languages by Gallego (2013). I take the ungrammaticality of (70-b) to be due not to the intervention effect of the DP$_{obj}$ between T and the DP$_{sbj}$, as is not the case in (62), but rather to the illicit object movement across V in situ. It is the violation of the Holmberg's generalization that causes the ungrammaticality of (70-a). This is a suggestion put forward by M. Richards via personal communication with A. Gallego, as reported by Gallego (2013: 434). Moreover, it is a central point in the analysis proposed by Heck (2016). Similarly, Italian clauses with an auxiliary are possible if the lexical verb moves above the object, as in (64), but not if the lexical verb stays in situ (i).

(i)   a. *Ha   il   giornale   letto   GIANNI.
           have.PRS.3SG the newspaper read.PRTC Gianni
       b. *Ha   il   giornale   GIANNI letto.
           have.PRS.3SG the newspaper Gianni   read.PRTC
           'Gianni has read the newspaper.'

It has been proposed that agreement for ϕ-features is case-discriminating (Bobaljik 2008; Preminger 2014). A probe can distinguish between its possible targets on the basis of their case marking, eventually leading to failed Agree, or to ungrammaticality.[44] In languages such as Italian and Spanish, agreement on T is always controlled by the nominative argument (and never by a non-nominative subject) (Sigurðsson 1996; Bobaljik 2008; Preminger 2014). Nested Agree offers a way to formalize the intuition that T agrees with the argument to which it assigns nominative case. If the features on T are ordered, and, in particular, nominative assignment precedes the search for ϕ-features ([ucase:nom] $\succ$ [uϕ:_]), then T always ϕ-probes the nominative DP, even when there is another DP that is configurationally higher than the actual goal.[45] The operations are represented in trees (71) and (72).

(71)   [ucase:nom]

(72)   Nested Agree for [uϕ:_]
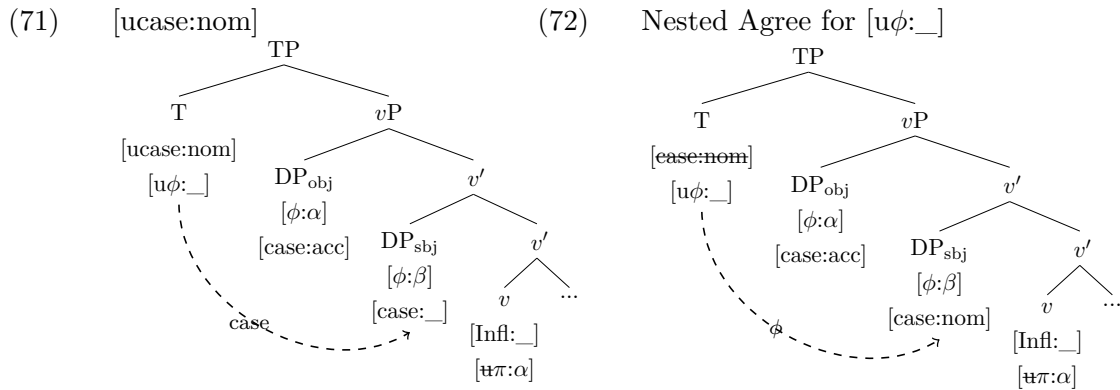
In (71), T assigns nominative case to the subject. Recall that case assignment is not subject to defective intervention. Although the object is higher in the structure, it is not a possible matching goal for [case:nom], since it already bears accusative case [case:acc]. Instead, the goal for [ucase:nom] must be an unvalued case feature [case:_]. After T has interacted with the DP$_{sbj}$ for case, it must also agree with it for [ϕ], if possible, as prescribed by Nested Agree. This is shown in (72): T agrees with the DP$_{sbj}$ across the DP$_{obj}$.

Nested Agree explains why the object is not an intervener for the relation between T and the subject in Italian, Spanish, Catalan and Romanian VOS structures. If there is a reason why VOS clauses might not be well-formed (as in example (64-b)), the problem is not object intervention. This is also suggested by the non-fully grammatical status of VSO

The Nested-Agree-analysis that I am about to propose does not take into account verbal movement, differently from Gallego (2013); Heck (2016). Further research is needed to establish the exact availability of VOS structures in connection with verbal head movement.

[44]More generally, there is a universal implication for ϕ-Agree related to case features (Bobaljik 2008, based on Moravcsik 1974). If a nominative-accusative language has agreement with the accusative argument, then it also has agreement with the nominative argument. Similarly for ergative-absolutive languages, if there is agreement with ergatives, then there is also agreement with absolutives).

[45]In the present analysis, ϕ-Agree is ordered after case assignment and both operations are triggered by the same head T. This is not compatible with the idea of a cartography of subject positions in the Infl-domain (Cardinaletti 2004), where different syntactic heads are responsible for different operations (and in particular, different heads determine case assignment and ϕ-Agree, cf. also Bobaljik and Jonas 1996).

structures. In Italian, there is a difference between VOS and VSO order: VOS clauses are in general accepted, while VSO clauses are often judged in a worse way (Belletti 2004: 35). VSO clauses are only possible when the focused subject is realized in situ and it is followed by a marginalized object (a destressed object in its base position) (Cardinaletti 2004: 117).

(73) a. Ha   letto   GIANNI il   giornale.
          have.PRS.3SG read.PRTC Gianni   the newspaper

     b. *Ha   letto   Gianni il   giornale.
          have.PRS.3SG read.PRTC Gianni the newspaper
          'Gianni has read the newspaper.'

Without a focused element, VSO structures (73-b) are clearly ungrammatical with respect to the corresponding VOS clauses (64-b). Obviously, in VSO sentences the problem cannot be object intervention. In addition, VSO structures have a more restricted distribution with respect to VOS order in other languages. For example, in Catalan VSO is excluded, whereas other orders are possible (Gallego 2013: 412-413). If VSO structures are more marked or less grammatical than VOS structure, this must be due to independent reasons. If there are other factors that play a role in inversion, these could also be active in those VOS instances that are not completely well-formed (such as (64-b)), instead of defective intervention of the object.

To sum up, agreement with the subject across the object in VOS structures is possible if case assignment precedes ϕ-Agree. Nested Agree forces T to ϕ-agree with the DP to which it has previously assigned nominative case.

One of the conclusions of this discussion is that ϕ-Agree can be parasitic on case assignment (for a similar result related to the phenomenon of inversion, cf. also the analysis of expletive constructions with the associate in situ proposed by Cardinaletti (1997)). However, I think that these two operations can also be independent, as proposed by Marantz (1991); Preminger (2014). In particular, under my approach the two operations are indeed independent either if a head bears just one of these features, or if the features are interleaved by another feature that it is not satisfied by the same goal that has satisfied the first one and would satisfy the third one. This second interposed feature changes the Agree domain for the third feature, thereby excluding the first goal. Another possibility is that the two features are interleaved by a second one that is satisfied by the same goal, but destroys the c-command condition of Agree by moving the DP in question out of the way (i.e., [case] $\succ$ [EPP] $\succ$ [uϕ]).

2.6.3.2 Dative arguments in Icelandic and Italian

A similar case of anti-minimality consists of agreement with a nominative argument across a dative DP. Relevant examples are quirky clauses, impersonal sentences, and passives with a dative recipient. In Italian and Icelandic quirky structures, the thematic subject bears

dative case; agreement on the verb is not controlled by the dative subject, but rather by a non-subject nominative argument (Sigurðsson 1996). In Italian impersonal constructions, agreement on the verb is also controlled by the direct object that bears nominative case. In both structures, the argument that is closer to T (the dative subject in the one case, the impersonal clitic *si* in the other case) is not a possible target for nominative assignment from T. I argue that this fact determines the unavailability of this higher argument as a controller for person agreement, despite it being the closest matching goal.

In (74) and (75) I show some examples of quirky subjects in Italian and Icelandic.[46]

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[46]With the term *quirky subjects*, I refer to non-nominative DPs that behave as subjects according to the subjecthood tests. For quirky subjects in Icelandic, cf. Zaenen, Maling, and Thráinsson 1985; Sigurðsson 1989. For Italian, the experiencer PP of the verb *piacere* passes (most of) these tests. I report here some of them.

(a) The dative DP (which in Italian is often a prepositional phrase) has access to exactly the same positions as nominative subjects do (although the same can be said for the nominative patient DP). It can occupy Spec,T (i-a), also stranding a quantifier (i-b), and it can be left in situ in VOS structures (i-c)

(i)   a.   A Teresa   piace   la pizza.
             to Teresa.DAT.3SG.F like.PRS.3SG the pizza
             'Teresa likes pizza.'
       b.   Alle   ragazze   piace   a tutte la pizza.
             to.the girl.DAT.3PL.F like.PRS.3SG to all   the pizza
             'All girls like pizza.'
       c.   Piace   la pizza A TERESA.
             like.PRS.3SG the pizza to Teresa.DAT.3SG.F
             'Teresa likes pizza.'

(b) The dative DP can control a PRO.

(ii)   A Teresa$_i$ piace   [PRO$_i$ non lavorare di domenica].
      to Teresa.DAT.3SG.F like.PRS.3SG   not work.INF on Sunday
      'Teresa likes not to work on Sundays.'

(c) The dative DP can be the antecedent of subject oriented reflexives.

(iii)   A Teresa$_i$ piacciono   le proprie$_i$ scarpe.
       to Teresa.DAT.3SG.F like.PRS.3PL the own   shoes
       'Teresa likes her own shoes.'

(d) The dative DP can participate in conjunction reduction with a nominative DP.

(iv)   A Teresa   piace   lavorare e   ama   studiare.
       to Teresa.DAT.3SG.F like.PRS.3SG work.INF and like.PRS.3SG study.INF
       'Teresa likes working and loves studying.'

The verb *piacere* cannot be passivized, so we cannot verify which argument can be demoted. In addition, other subjecthood tests like ECM lead to dubious results.

(v)   a.   Ritengo   Teresa   andare bene a scuola.
             believe.PRS.1SG Teresa.ACC.3SG.F go.INF   well at school
             'I believe Teresa to do well in school.'
       b. ??Ritengo   a Teresa   piacere la pizza.
             believe.PRS.1SG to Teresa.DAT.3SG.F like.INF the pizza
       c.   *Ritengo   la pizza piacere a Teresa.
             believe.PRS.1SG the pizza like.INF to Teresa.DAT.3SG.F
             'I believe Teresa to like pizza.'

The patient in nominative case (whose base position is lower than the dative argument) controls agreement on the verb. This also happens when the patient DP remains in the postverbal position, as shown in (74-b,c) (Belletti and Rizzi 1988; Cardinaletti 2004).[47]

(74)   *Italian*

    a. Solo queste caramelle   piacciono   a Maria.
        only these candy.NOM.PL like.PRS.3PL to Maria.DAT.3SG.F

    b. Piacciono   a Maria   solo queste caramelle.
        like.PRS.3PL to Maria.DAT.3SG.F only these candy.NOM.PL

    c. A Maria   piacciono   solo queste caramelle.
        to Maria.DAT.3SG.F like.PRS.3PL only these candy.NOM.PL
        'Maria likes only these candies.'   (A. Cardinaletti, p.c.)

(75)   *Icelandic*

    Það líkuðu   einhverjum   Þessir sokkar.
    EXPL like.PST.3PL someone.DAT.3SG these sock.NOM.PL
    'Someone liked these socks.'   (Jónsson 1996: 143)

Moving on to the next cases, an Italian impersonal sentence is shown in (76-a), where the patient in nominative case controls agreement on the verb. In (76-b) is an Italian passive sentence where the finite verb agrees with the nominative object, which is located in a lower position with respect to the higher recipient dative argument.[48] In (76), differently from the quirky structures discussed above, the dative DP argument (which is actually a prepositional phrase PP) does not qualify as the subject, which is instead the internal argument.

(76)   *Italian*

    a. Si=danno   a questa ragazza   dei buoni voti.
        IMPERS=give.PRS.3PL to this   girl.DAT.3SG.F some good note.NOM.PL
        'One gives good notes to the girl.'

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[47]When the dative surfaces in an intervening position, as in (74-b), the sentence is grammatical only under a focus reading, as is the case for postverbal subjects (cf. the previous section on VOS order, and in particular example (73-a) for a comparison). Hence, the meaning of (74-b) is 'MARIA likes only these candies (not ANNA).'

[48]When a verb selects both a direct and an indirect object, as the verb *dare* 'give' in (76), it may be the case that either argument can c-command the other (McGinnis 1998: 98). This is shown by the possibility of binding in both directions.

(i)   a. Sveva ha   attribuito   a ciascuna parola$_i$ il   proprio/suo$_i$ simbolo.
           Sveva have.PRS.3SG attribute.PRTC to each   word   the own/its   symbol
           'Sveva has attributed to each word its symbol.'
        b. Sveva ha   attribuito   ciascuna parola$_i$ al   proprio/suo$_i$ simbolo.
           Sveva have.PRS.3SG attribute.PRTC each   word to.the own/its   symbol
           'Sveva has attributed each word to its symbol.'   (McGinnis 1998: 98)

If binding in (i) really shows two different base positions for the direct object, no problem of intervention arises in clauses such as (76-b), assuming that in this case the direct object c-commands the indirect object in the base position.

b. Sono   stat-i   dat-i   a questa ragazza   dei
   be.PRS.3PL be.PRTC-PL.M give.PRTC-PL.M to this   girl.DAT.3SG.F some
   buoni voti.
   good note.NOM.PL
   'Good notes have been given to this girl.'   (A. Cardinaletti, p.c.)

Similar data can be found in Icelandic (77). However, here the dative DP is a quirky subject, as confirmed by the tests for subjecthood (Zaenen, Maling, and Thráinsson 1985; Sigurðsson 1989).

(77)   *Icelandic*

Um veturinn   voru   konunginum   gefnar   ambáttir.
in   the.winter be.PST.3PL the.king.DAT.3SG give.PRTC slave.NOM.PL
'In the winter, the king was given (female) slaves.'

(Zaenen, Maling, and Thráinsson 1985: 112)

In all these cases, the controller of finite agreement is the nominative argument, independently of its position. Not only the dative argument does not block the relation between T and the object (i.e., there is no defective intervention), but T agrees with the lower nominative, rather than with the dative argument. This fact requires an explanation.

There might be independent reasons that make the dative argument unavailable for Agree. For example, the dative DP could be encapsulated under a KP shell that insulates the DP ϕ-features from outside probing (Rezac 2004; Atlamaz and Baker 2018; Coon and Keine 2020). However, I would like to argue that Nested Agree offers a simple solution for this problem. In fact, under the ordering [ucase:nom] $\succ$ [uϕ:_] on T, the dative argument is not an accessible goal for the ϕ-probe on T. Even though it is higher in the structure, it has been skipped for case assignment by T (since it bears already dative case, assigned either by the quirky v or by an Applicative head). Hence, it lies outside the search domain of [uϕ:_] on T. This scenario arises with quirky subjects and with dative recipient arguments. In impersonal clauses, the impersonal clitic (whose case has not been assigned yet) is not a possible goal for agreement because it head-moves to T as soon as possible. After its incorporation into T, it can neither receive nominative from T, nor control ϕ-Agree on T (cf. section §3.3.9 in chapter 3 for details).[49]

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[49]This proposal does not consider the problem of phase boundaries. Under the assumption that every v is a phase, it should not be possible to have case assignment and agreement with the lower object, which is located within the complement of v. The Phase Impenetrability Condition disallows every interaction between T and the object. This is in general a problem for those theories that assume v to be always a phase. However, I think there are some ways out of this issue. Some possibilities are cyclic Agree with features sharing (Legate 2005), or covert movement (Polinsky and Potsdam 2013). In this dissertation, while discussing participle agreement with the controller DP in situ, I offer some evidence that sentences with nominative object can be accounted for by means covert movement. I provide some tests in favor of covert movement in section §4.5.1 of chapter 4, where I also discuss sentences such as (76-a). Let me also add that, if the internal argument covertly moves to the Spec,v, then it should actually be located in an outer Spec,v, where it is higher than the dative argument. If this is the case, there is no problem of intervention to start with.

The derivation is as follows. First of all, T assigns nominative to a DP that still lacks case. In quirky structures, the dative DP does not act as an intervener, because its case is already valued (no defective intervention for case assignment). In impersonal clauses, the clitic *si* does not intervene because it has already incorporated to T. In both cases, T assigns case to the lower internal argument, which is the highest DP with an unvalued case feature. After this operation, Nested Agree forces T to search the same DP also for ϕ-features. Thus, T agrees for $[\phi]$ with the nominative argument, rather than with the higher dative DP, as examples (74)–(77) show. This Agree operation creates an apparent anti-minimality configuration, which can be accounted for by Nested Agree.[50]

I have just shown how agreement with the nominative DP across a dative argument can be derived by means of Nested Agree. However, there are well-known cases where the presence of an intervening dative does lead to ill-formed structures. The result is either default Agree or ungrammaticality. The former can be observed in Icelandic, as example (78-a) illustrates (Boeckx 2000; Schütze 1997). The latter arises in Italian, as shown in examples (79-a) and (79-b) (Rizzi 1986: 75). Agreement with the nominative argument becomes possible again if the dative raises to an higher position, as in (78-b), (79-c) and (79-d).[51] In Italian, raising of the nominative argument next to the dative argument is preferred (79-c), although it is also possible to leave it in the lower position (79-d).[52] The Italian sentences, originally discussed by Rizzi (1986), are here slightly modified.

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[50]The difference between (74-a) and (74-c) can be derived either with different base positions of the two arguments, or by means of different feature orderings. For the former idea, cf. footnote 48. Under the latter hypothesis, (74-a) is produced with the order on T [ucase:nom] $\succ$ [uϕ:_] $\succ$ [EPP], whereas (74-c) results from the order on T [EPP] $\succ$ [ucase:nom] $\succ$ [uϕ:_]. In the analysis developed in this dissertation, I said that the order [ucase:acc] $\succ$ [uϕ:_] $\succ$ [•D•] (on transitive v) follows from strict cyclicity (cf. also discussion in section §2.4.4). This means that the order [EPP] $\succ$ [ucase:nom] $\succ$ [uϕ:_] on T should violate cyclicity. I think that the EPP can be the first feature without violating the Strict Cycle Condition if it works with a separate workspace, under the theory developed by Heck (2016); Heck and Himmelreich (2016), as I will discuss in section §5.6.2 of chapter 5. An internal Merge feature as the EPP, differently from the external Merge feature [•D•], can be decomposed into an Agree and a Merge component. If Agree is ordered before Merge, the Agree-component targets the item to be moved. Then, this is temporarily stored in the separate workspace. After other different Agree operations have applied, the Merge-component of the EPP is discharged, provoking Merge of the removed item in the landing position. Note that this consideration also changes the discussion in section §2.4.4, but, nonetheless, the A-over-A configuration is ruled out by other issues (such as wrong predictions, and difficulties in building the typology of auxiliary selection).

[51]In Icelandic, the dative argument raises to Spec,T (Zaenen, Maling, and Thráinsson 1985; Sigurðsson 1989), while in Italian it undergoes movement to an Ā-position (McGinnis 1998). This is confirmed, for instance, by the simultaneous appearance of the dative DP and the nominative DP in the preverbal position in (79-c).

[52]As noted by Cardinaletti (p.c.), the sentences (79-c) and (79-d) constitute evidence against the analysis of the raising verb *sembrare* proposed by Cinque (2004, 2006); Haegeman (2006). According to these authors, the ungrammaticality of sentences (79-a) and (79-b) is due to the fact that raising *sembrare* cannot select any argument, it being a restructuring verb according to Cinque's (2004) proposal. If this was true, the sentences (79-c) and (79-d) should be ungrammatical as well.

(78)   *Icelandic*

    a.   Mér   virðist/*?virðast   Jóni   vera   taldir   líka
        DAT.1SG seem.PRS.3SG/PRS.3PL Jon.DAT be.INF believe.PRTC.PL like.INF
        hestarnir.
        horse.NOM.PL
        'I perceive Jon to be believed to like horses.'

    b.   Jóni   ?*virðist/virðast   vera   taldir   líka
        Jon.DAT.3SG.M seem.PRS.3SG/PRS.3PL be.INF believe.PRTC.PL like.INF
        hestarnir.
        horse.NOM.PL
        'Jon seems to be believed to like horses.'   (Schütze 1997: 108-109)

(79)   *Italian*

    a.   *Gianni   sembra   a Piero   fare   il suo dovere.
        Gianni.NOM seem.PRS.3SG to Piero.DAT do.INF the his duty

    b.   *A Piero   sembra   Gianni   fare   il suo dovere.
        to Piero.DAT seem.PRS.3SG Gianni.NOM do.INF the his duty

    c.   A Piero   Gianni   sembra   fare   il suo dovere.
        to Piero.DAT Gianni.NOM seem.PRS.3SG do.INF the his duty

    d.   A Piero   sembra   fare   il suo dovere Gianni.
        to Piero.DAT seem.PRS.3SG do.INF the his duty   Gianni.NOM
        'Gianni seems to Piero to do its duty.'   (A. Cardinaletti, p.c.)

The reason for the ungrammaticality of clauses such as (78-a), (79-a) and (79-b) is often considered to be defective intervention (Chomsky 2000): even though the dative itself cannot receive case since its case feature is already valued, it can block case assignment because it bears the relevant feature [case]. If the dative moves out of the way, the sentences become again grammatical with full agreement.

Analyses based on defective intervention state that agreement with the nominative argument and raising to the subject position is enabled by Ā-movement of the experiencer (Rizzi 1986; McGinnis 1998; Anagnostopoulou 2003; Holmberg and Hróarsdóttir 2003; Zeller and Ngoboka 2006). This explains why (79-a) is ungrammatical: the dative has not undergone Ā-movement to the left periphery and blocks the embedded subject from raising. As far as example (79-b) is concerned, McGinnis (1998: 92) has argued that in languages as Italian the experiencer (which is an indirect object DP with inherent case) cannot check the EPP-feature of T. If this is true, in (79-b) the dative argument is actually located in an Ā-position, while T checks its case feature and the EPP-feature with an expletive *pro*. However, in this case the embedded subject is left with an unchecked case feature, consequently leading to a derivational crash, as the ungrammaticality of example (79-b) shows. This analysis could be adopted, but it does not explain why cases (74-b) and (74-c) are indeed grammatical. Moreover, the status of (79-d) is unclear.[53] Very similar

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[53]Let me try to explain the grammaticality of clause (79-d) by adopting McGinnis's (1998) analysis. In order to do so, I think that covert movement of the subject to Spec,T should be assumed. The clause in

proposals for the present case have been made by Bobaljik (2008); Georgi (2014); Heck (2021).

Once again, I would like to argue that the relation between T and the DP$_{sbj}$ is not disturbed by the presence of a structurally higher argument. This relation is enabled by means of Nested Agree and by the feature ordering [ucase:nom] ≻ [uϕ:_] on T. Consequently, the ungrammaticality of (78-a), (79-a) and (79-b) must be due to independent reasons. For instance, it has been highlighted that in Icelandic dative intervention effects are registered only in biclausal configurations (Bobaljik 2008). Given this asymmetry between simple and biclausal structures, Bobaljik (2008) proposes that the problem of (78-a) (and, similarly, of (79-a) and (79-b)) lies in intervention by the matrix dative with respect to (covert) A-movement of the object. In simple clauses, Ā-movement of the dative allows (overt of covert) A-movement of the subject, as already mentioned. However, in biclausal sentences the dative argument cannot move to matrix Spec,T (thereby moving out of the way), because of the presence of a matrix experiencer. In (78-a), the dative subject of the matrix predicate (*mér*) blocks movement of the dative subject of the embedded predicate (*Jon*), consequently also blocking covert raising of the nominative object (*hestarnir*) into the matrix clause. If the matrix experiencer is absent, the embedded experiencer raises to matrix Spec,T, freeing the way for covert A-movement of the object. Hence, in biclausal structures a higher dative DP bleeds movement of the lower dative, which is instead possible in simple clauses (overtly or covertly). If this is true, one could rule out the ungrammatical examples (78-a), (79-a) and (79-b) by resorting to intervention by the matrix dative DP, which would be a problem even under the analysis based on Nested Agree.

Interestingly, it has also been noticed that experiencer PPs pattern with adjunct PPs in terms of the positions that they can occupy (Bruening 2014). In particular, adjuncts of all types are banned in the same position as experiencer PPs are, even though they do not interfere with any instance of A-movement or agreement. For instance, in Romance languages adjuncts cannot occupy the position between a raising predicate and its non-finite complement. The following clauses should be compared with (79) (respectively, (80-a) with (79-a), (80-b) with (79-c)). Crucially, the grammaticality judgments have the same distribution in (80) and in (79).

(79-d) is well-formed perhaps because the subject has undergone covert movement from its base position. Hence, (79-d) has the same syntactic structure as (79-c), the difference being that in (79-c) the subject has moved overtly, and in (79-d) covertly. The reader may wonder why (79-b) is ungrammatical. In fact, one could resort to the covert movement derivation there as well. I think that the possibility of covert movement is excluded in (79-b) because the subject is not spelled out in a licit position, as I have proposed in footnote 32 and in section §4.5 of chapter 4. However, this is just a speculation.

(80) a. ??Gianni   sembra   in alcune occasioni fare   il suo dovere.
          Gianni.NOM seem.PRS.3SG in some   occasions do.INF the his duty

      b. In alcune occasioni Gianni   sembra   fare   il suo dovere.
          in some   occasions Gianni.NOM seem.PRS.3SG do.INF the his duty
          'Gianni seems to do its duty in some occasions.'   (Bruening 2014: 714)

Recall that raising clauses with an intermediate dative DP are ungrammatical (cf. (78) and (79)), while simple clauses are fine (cf. (74) and (75)). The data in (80) suggests that the problem with experiencer PPs might not be due to defective intervention in A-movement or agreement. It might be a matter of licit positions for adjuncts (I refer the reader to Bruening 2014 for some possible explanations for this generalization).

To sum up, Nested Agree gives an explanation for subject agreement across a dative argument in monoclausal configurations. This fact remains otherwise unexplained, unless assuming that dative arguments are not target for Agree (for instance, because of a KP-shell). Moreover, the difference in grammaticality between monoclausal (cf. (74) and (75)) and biclausal structures (cf. (78) and (79)) is captured under the Nested Agree analysis, assuming that the problem in biclausal structures arises for independent reasons.

2.7 Summary

In this chapter, I have introduced a new condition on ordered Agree operations, called Nested Agree. This principle is a computational constraint on Agree that determines the domain of operations when multiple triggers share the same syntactic position. Under the assumption that the features on the same head are ordered, the domain of an operation is reduced by the result of a previous operation. The domain of Agree is dynamic, in the sense that it depends both on the structure and on the accomplishment of previous operations. I have motivated my proposal by showing its differences and similarities with previous approaches to minimality violations and specificity effects. I have also sketched a solution based on Nested Agree for some different minimality problems.

I have started with the claim that auxiliary selection is a form of Agree. Then, I have shown that, if this is the case, a problem of minimality emerges. In fact, the choice of the perfect auxiliary in Standard Italian depends both on the presence and on the type of features of the internal argument. The information about the internal argument is not local to the head that is realized by the perfect auxiliary (Perf). Therefore, I have introduced Nested Agree as a way to deal with this apparently non-local configuration. If Agree operations are ordered, the domain of a subsequent operation may exclude an apparent intervener, depending on the result of the previous operation. Nested Agree allows to account for the anti-minimality challenge that the data discussed in this dissertation pose.

In the next chapter, I offer the detailed derivations of the data discussed in this dissertation, showing that Nested Agree can correctly account for the distribution of the perfect auxiliaries in Standard Italian.

3 Auxiliary selection: the analysis

3.1 Introduction

In this chapter, I provide a derivational account of the distribution of the perfect auxiliaries BE and HAVE in Standard Italian. I start with some assumptions on the syntactic structure, in particular about the heads and the features that I consider relevant for the analysis. Having set the stage, I go on with the actual derivations for transitive clauses, unergative verbs, unaccusative predicates, weather verbs, passives, reflexive transitive verbs, benefactive transitive verbs and impersonal clauses. The present analysis can account for all the cases presented in this dissertation. The account of auxiliary selection developed here will be then extended in three directions: it is flanked by the analysis of participle agreement (chapter 4), it is applied to restructuring contexts (chapter 5) and it is used to explain the cross-linguistic variation in auxiliary selection (chapter 6).

3.2 Some notes on the syntactic structure

3.2.1 The perfect projection

In the literature, different syntactic representations have been proposed for auxiliaries. For example, the auxiliary can be either the head of a related functional projection FP (Tenny 1987; Cinque 1999), the head of its own phrase AuxP selected by a semantically-interpreted functional projection (Kayne 1993; Rothstein 2004), or the head of one of some nested vPs (D'Alessandro and Roberts 2010, following an intuition already present in Ross 1969). In all these cases, the auxiliary realizes a dedicated syntactic head. The recent work of Bjorkman (2011) proposes a morpho-syntactic account of auxiliaries, instead. Under her analysis, the auxiliary is inserted to support inflectional material that is unable to combine with the main verb. This is what happens when the perfect projection is merged in the structure. In fact, the intervening head Perf prevents V from moving to T and combining with the inflectional features on T. This approach provides a unified explanation for auxiliaries of different types. However, it still needs to refer to a syntactic position for the insertion of the auxiliary (for the perfect auxiliary, the head Perf).

In this dissertation, I adopt a syntactic representation for the perfect auxiliary in line with D'Alessandro and Roberts (2010); Bjorkman (2018). Perf is a functional head that belongs to the Infl-domain (which is the locus of the verbal morpho-syntactic features). In particular, it is the first temporal functional projection outside the vP (Bjorkman 2018: 330). It introduces the perfect semantics, it selects a vP and it is selected by T. Moreover, it has the same category as v or Voice, since it is selected by T. This functional projection is located between TP and vP, as is shown in the syntactic structure in (1).

(1)

```
                 TP
              ／    ＼
          …        PerfP
                ／      ＼
            Perf          vP
             |          ／  ＼
          BE/HAVE      v      …
```
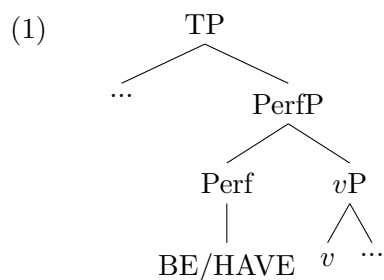
This representation avoids the use of further empty functional projections and is confirmed by the behavior of the head of the projection, which head-moves to T. In fact, when there is a perfect auxiliary, the person inflection appears on the auxiliary rather than on the lexical verb, which instead remains in a lower position and is realized as a participle (eventually, with gender and number inflection, but never with person inflection). This is shown in (2).

(2)   a.   Mangio   la   mela.
           eat.PRS.1SG the apple
           'I eat the apple.'

      b.   Ho   mangiato la   mela.
           have.PRS.1SG eat.PRTC the apple
           'I have eaten the apple.'

Given that in Standard Italian the verb obligatorily moves to T (forming the complex head V-v-T) (Belletti 1990), the data in (2) show that, when the perfect head is present, it is Perf that moves to T instead of the lower v (forming the two complex heads V-v and Perf-T). In other words, Perf behaves as v in being attracted to T, showing that Perf and v share the same categorical feature.

The location of the Perf head between v (or eventually Asp) and T is supported by semantic analyses by Iatridou, Anagnostopoulou, and Izvorski (2012); Pancheva (2012). Perf should also be higher than v because the perfect auxiliary co-occurs with the passive auxiliary and it is higher than it (Bjorkman 2018: 333). From the position in (1), the head Perf is sensitive to the argument structure, as auxiliary selection shows, although it is not immediately involved in it. This is enabled by the feature [uInfl:perf].

3.2.1.1 [uInfl:perf]

In section §2.3.1 of chapter 2, I have explained how Agree works and which features count as probes. A probe is a syntactically-uninterpretable feature of the form *uF*, where the prefix *u*- indicates the ability to start an Agree operation. The term *uninterpretable* neither refers to any condition at LF nor it has an interpretable counterpart. It means only the need to initiate a search operation for syntax-internal reasons, but it does not have any reflex on the nature of the feature itself or on its semantic interpretability. A probe can be either valued or unvalued. In the former case, successful Agree leads to the presence of the

same value for the same feature on an item in the c-command domain of the probe (either by means of valuation of an unvalued goal, or because the goal is already valued with the same value of the probe). In the latter case, successful Agree implies the valuation of the probe by a goal that bears a valued matching feature, or the lack of valuation if the goal is unvalued as well.

I said that Perf introduces the perfect semantics. I propose that this is encoded in syntax by a feature of the *[Infl]* type with the value *perf*: [uInfl:perf]. I follow here a proposal from Adger (2003), adopted also by Bjorkman (2011): inflectional heads bear inflectional features of a single type [Infl], which can have different values (such as [Infl:past], [Infl:impf], [Infl:pass]). This feature [uInfl:perf] is a probe in the sense that it needs to be checked against a feature of similar type. For instance, the head v bears an [Infl:_] feature. This feature is unvalued, but it is not a probe, meaning that it can either remain unchecked or receive a value by a probe. The former case happens when the structure does not contain any checking projection, such as Perf or passive Voice, and it leads to the insertion of a default form in the morpho-phonology. In the latter case, v receives a value from another inflectional head, like Perf. This value is then interpreted on v (which is in fact realized as a participle).[1]

3.2.1.2 The other heads

Let us now look at the featural specification on the heads. Among the different types of v, there is a non-defective, agentive v with full argument structure (v^* in Chomsky's (2001) definition) and a defective v. The head v^* assigns accusative case to the internal argument of the lexical verb ([ucase:acc]), and contains a probe for person ([uπ:_]).[2] This functional head is used with biargomental and triargomental verbs (transitive and ditransitive predicates) and with unergative verbs. I use also a quirky v, similar to non-defective v, with the difference that it assigns dative case instead (Chomsky 2001). For unergative verbs, I adopt the standard assumption originally proposed by Hale and Keyser

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[1]In the original proposal by Adger (2003: 136), v contains an uninterpretable inflectional feature [uInfl:_]. In general, this is checked with T, which assigns v a temporal value via upward Agree. Instead, in the case of a perfect projection, [uInfl:_] on v agrees upward with the auxiliary head, which bears [Perf] as a value for [Infl], as represented in (i) (Adger 2003: 139).

(i)   Aux[Infl:perf] . . . v[uInfl:_] → Aux[Infl:perf] . . . v[u̶Infl:perf]

My proposal here is very similar, although I assume that the uninterpretable Infl-feature is on Perf (rather than on v), whereas the corresponding feature on v needs not to be checked (rather than being a probe). This is represented in (ii).

(ii)   Perf[uInfl:perf] . . . v[Infl:_] → Perf[u̶Infl:perf] . . . v[Infl:perf]

[2]In Chomsky (1995), object Agree is considered to be universal, the cross-linguistic difference lying in the morphological realization of Agree, i.e. in agreement. However, the specific interaction of v with the internal object, i.e. the kind of probes that v bears (uϕ, uπ, u#...), is language specific, as the growing amount of studies on Agree (and on related phenomena, such as the PCC, noun-incorporation and so on) have shown.

(1993): they are underlyingly transitive and they merge with a covert object. Evidence for considering unergative verbs as transitive verbs, especially for the purpose of auxiliary selection, comes from the fact that there is no Romance variety where transitives and unergatives diverge in the choice of the auxiliary (Loporcaro 2001: 463, Loporcaro 2007: 180).

Differently, defective v combines with monoargumental verbs, where the sole argument is merged as the internal object of the verb. Assuming that every v is a phase (cf. next section §3.2.1.3), its function is the indication of a phase boundary. All types of v bear the Infl-feature, which determines the morphological inflection that will be realized on v and which is necessary to license any upper inflectional heads (which need to agree with a head bearing an Infl-feature in order to discharge their own [uInfl]-feature).

In addition, there are other types of functional heads that bear an Infl-feature. These are different instances of Voice, such as $\text{Voice}_{\text{pass}}$ and $\text{Voice}_{\text{impers}}$. The former is the head responsible for the passive interpretation, which is encoded by the value *pass* for the probe [uInfl]. The head bears this valued probe [uInfl:pass] and also an unvalued instance of [Infl]. The latter head is present in impersonal clauses. Its peculiarity is the presence of an unvalued person feature that licenses the impersonal argument (for details, cf. section §3.3.9)

The inflectional heads are specified as in (3) and the features are ordered as they appear in the list. With the bullet symbol [•F•] I indicate features that trigger Merge (external or internal, i.e. Move), and with the notation [uF:_] I indicate features that trigger Agree.

(3) a. defective v: [Infl:_]
     b. v: [Infl:_], [ucase:acc], [uπ:_], [•D•]
     c. quirky v: [Infl:_], [ucase:dat], [uπ:_], [•D•]
     d. $\text{Voice}_{\text{pass}}$: [uInfl:pass], [Infl:_]
     e. $\text{Voice}_{\text{impers}}$: [Infl:_], [$\pi$:_], [•D•]
     f. Perf: [uInfl:perf], [uπ:_]
     g. T: [Tense:_][3], [ucase:nom], [uϕ:_], [•D•]

The featural inventory of vs is a fundamental issue for the present analysis. Since auxiliary selection depends on the presence or absence of a π-feature on v (as proposed in chapter 2), it is crucial to draw a line between a full v, which contains, among others, a person probe, and a defective v, which does not host any person feature. The presence or absence of a person feature correlates with the defectiveness of the head. We could imagine a cline of defectiveness for v, Voice and Perf, which are the heads that bear an [Infl] feature. These heads can bear a person probe, introduce an external argument and assign it a Theta-role, assign case, bear a valued Infl-feature. The more features are lacking on a head, the more this head is defective. Table 3.1 summarizes all these properties.

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[3]This feature expresses the tense specification that the T projection brings into the syntactic structure. Its value can be [pres], [past] and so on (cf. Adger 2003 for details).

non-defective v	quirky v	impersonal Voice	passive Voice	Perf	defective v
uπ:__	uπ:__	π:__		uπ:__	
Infl:__	Infl:__	Infl:__	uInfl:pass, Infl:__	uInfl:perf	Infl:__
•D• + Θ-role	•D• + Θ-role	•D• + Θ-role			
case:acc	case:dat				

Table 3.1: Featural array on the heads.

In Table 3.1, we can examine the distribution of the person feature across the heads. There seems to be a correlation between the person probe and the ability to Merge a D category (and to assign it a Theta-role). If this property is present, then the head is also a probe for π. The two features are related to the D domain and cluster together, even though they do not target the same DP. For instance, the Merge feature of a non-defective v creates a specifier position via external Merge, whereas the person probe acts under c-command and generally targets the internal argument of V. In contrast, the property of case assignment does not seem so relevant for the presence of a person feature. Firstly, Voice$_{\text{impers}}$ does contain a π-feature (although not a person probe), but does not assign case. Secondly, there are other heads outside the Infl-domain that can act as case assigners, for example the applicative head (bearing [ucase:acc], [•D•], but no [π]) and prepositional heads (which are not relevant for this dissertation but can assign case without probing for person). Therefore, case does not stand in an implicational relationship with person.

The correlation between [•D•] and [π] is only a tendency and not a generalization. The head Perf is an exception, since it contains a person probe but it does not introduce any D category. I said that the head Perf bears the category [v], but it is different from the transitive or defective v. In fact, it is not a phase head. Even though the analysis would not change if it were a phase, there seem to be no evidence for this claim. Secondly, it contains a valued instance of the [Infl] feature that makes it different from the other vs, which host unvalued [Infl], instead. Thirdly, it takes as a complement the other heads (but it shares this property with Voice, which also takes the vP as a complement).

As far as ϕ-features are concerned, I assume that person (π), number (#) and gender (γ) are separated, independent branches below the node ϕ in the feature geometry (Béjar 2003). The different ϕ-features are not organized in entailment relationships. For instance, it is not the case that a specific ϕ-feature such as gender entails the presence of the higher node person. Instead, a specific value of a feature only implies the presence of that feature (for instance, [+Auth] requires the presence of the node π, but it is independent of the node γ). Note that, if the person feature is independent of the gender and number feature, a probe for person (as the one on Perf) cannot be satisfied by a gender or number feature.

Finally, I also assume that third person counts as a person (Béjar 2003; Bianchi 2006; Nevins 2007; Coon and Keine 2020).

3.2.1.3 Phases

I assume that every v is a phase (Legate 2003; Richards 2005; Müller 2010, 2011; Abels 2012; Heck 2016). Phases are computational chunks of syntactic structure. The phasal status of the head v is relevant because of a principle called *Phase Impenetrability Condition* (Chomsky 2000, 2001).

(4)   *Phase Impenetrability Condition (PIC)* (Chomsky 2000: 108)
        In a phase α with head H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operation.

The PIC imposes a locality constraint on syntactic operations that is based on phases. The complement of a phase head is opaque for operations triggered by heads outside the phase, whereas the head and its specifier(s) remain visible for higher heads, at least until the next phase head is merged in the derivation. If v is a phase, the internal object in its base position is not accessible for anything above the specifier of v (unless it moves, thereby escaping the phase domain). The PIC is the reason why the information from the object is copied by Perf from the head v and not directly from the object. In fact, given the definition of the PIC, the head v remains accessible for operations triggered by the higher head Perf, while the internal argument does not. The assumption that every v is a phase and that the PIC is an active constraint on phases will also be crucial for the analysis of participle agreement in chapter 4.

3.2.2 The Unaccusativity Hypothesis

In this dissertation, I assume different categorizations of verbs along a cline of intransitivity, as proposed by Sorace (2000, 2004). Sorace's influential work on auxiliary selection builds on the *Unaccusativity Hypothesis* (Perlmutter 1978; Burzio 1986). This hypothesis introduces a distinction between unaccusative and unergative verbs that correlates with different syntactic structures. Under this proposal, the split of intransitive verbs into two classes depends on the semantics of those verbs. This difference is represented in the syntax by means of different Merge positions of the sole argument. In particular, the verb is unaccusative if its argument is base-merged as the internal argument, while it is unergative if its argument is an external argument. The diagnostics are different and language-specific: passivization, *ne*-cliticization, reduced relatives, formation of deverbal agent nouns, auxiliary selection.[4] These different derivations determine the difference in auxiliary selection. In other words, the intransitivity split is syntactically represented, but the membership of a particular predicate to a given class is a semantically determined issue

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[4]This diagnostic test cannot be used here, since the central claim of this dissertation is that the different forms of the auxiliary are not lexically selected, but instead they are the result of Agree, which is influenced by the argument structure. If HAVE surfaces, it means that we have a transitive structure with fully-valued arguments, otherwise the default BE emerges. Hence, we cannot determine the argument structure of a verb on the basis of its auxiliary.

(McFadden 2007: 692).

However, the distinction between these classes is not sharp. The particular lexical verb is not the sole factor for auxiliary selection. Indeed, contextual and semantic factors determine which auxiliary should be used for which verb, when a language has the choice between two forms. An example is the verb 'to run', which swings between the two auxiliaries (5-a). If this verb is constructed as a change of state, then the auxiliary is BE (5-b). If it is an activity, taking even a direct object, the auxiliary is HAVE (5-c).

(5)   a.   Maria ha   corso   / è   cors-a   velocemente.
             Maria have.PRS.3SG run.PRTC / be.PRS.3SG run.PRTC-SG.F fast
             'Maria has run fast'.   (Sorace 2000: 876)
       b.   Maria *ha   corso   / è   cors-a   in farmacia.
             Maria have.PRS.3SG run.PRTC / be.PRS.3SG run.PRTC-SG.F to pharmacy
             'Maria has run to the pharmacy'.   (Sorace 2000: 876)
       c.   Maria ha   corso   / *è   cors-a   la   maratona.
             Maria have.PRS.3SG run.PRTC / be.PRS.3SG run.PRTC-SG.F the marathon
             'Maria has run the marathon'.

Example (5) shows that HAVE and BE can alternate with a single lexical verb in a single language, depending on the degree of agentivity of the subject and on the presence of prepositional phrases that modify the telicity of the predicate. Thus, Sorace (2000: 863) proposes an *Auxiliary Selection Hierarchy (ASH)*, developed by subsequent works (Keller and Sorace 2003; Sorace 2004; Cennamo and Sorace 2007), represented here in Table 3.2.

change of location	BE
change of state	
continuation of a preexisting state	
existence of state	
uncontrolled process	
controlled process (motional)	
controlled process (non-motional)	HAVE

Table 3.2: Auxiliary selection hierarchy.

Verbs that fall into a semantic class either at the top or at the bottom of the hierarchy systematically select for a single auxiliary. In contrast, in the central region of the scale, auxiliary selection is not a clear-cut process and the choice depends on both aspectual and thematic factors.[5]

It is important to stress that the assumption of a cline of intransitivity is orthogonal to the main proposal developed here. I consider the position of a verb on the cline as a lexical property that maps to the type of v that selects the verb (and to a specific argument structure). In syntax, this means that the very same verb can be selected by different

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[5]I refer the reader to Sorace (2000, 2004) for the detailed discussion of the factors that influence the choice of the auxiliary. In the present analysis, the chosen auxiliary is the spy of the argument structure in which the particular instance of the verb is found.

types of v, either the one with full argument structure or the defective one. Verbs that always combine with just one of these v are located at the extremities of the intransitivity cline. If a verb is always categorized as a transitive one, it will be merged exclusively with a full, transitive v; if a verb is located on the opposite pole of the cline, it means that it is always categorized by a defective v. Verbs that occupy intermediate positions on the cline allow for different categorization frames: they are optionally merged either with a non-defective v or with a defective v, depending also on the presence of other arguments (such as PPs). Given the syntactic structure into which they are merged, one or the other auxiliary will be chosen as the realization of the terminal node Perf. With exclusively transitive verbs the same auxiliary always shows up; with exclusively non-transitive verbs we always find the other auxiliary; with gradiently transitive verbs we find both, depending on the particular argument structure that each instances realizes. In other words, the position of a verb within the Auxiliary selection hierarchy is an input for syntax, which defines the syntactic argument structure in which the verb occurs. The syntactic structure, consequently, determines the features on the perfect projection that will be spelled out by the auxiliary.

3.2.3 Vocabulary entries

In the present analysis, I follow Kayne (1993); D'Alessandro and Roberts (2010); Bjorkman (2011) in considering HAVE as the most specific form, BE as the unmarked form.[6] The reason why such a lexical inventory has been proposed stems from crosslinguistic comparisons. The main observation is that HAVE always corresponds to BE plus something else. In fact, in possessive, locative and existential structures HAVE is cross-linguistically equivalent to BE plus an oblique/prepositional element (Kayne 1993). Moreover, Estonian and Celtic languages express the perfect with BE plus an aspectual particle that has prepositional content (Bjorkman 2011). The auxiliary BE also occurs as inflectional support when a further auxiliary is needed (cf. overflow pattern of auxiliary use, Bjorkman 2011).

The present analysis abstracts from the relationship between the two allomorphs. In particular, I do not adopt the idea that HAVE results from the incorporation of extra structure into BE (Benveniste 1966; Freeze 1992; Kayne 1993; Cocchi 1995). The only relevant point is the presence of a competition in the lexicon for the same terminal node Perf. The vocabulary entries I use for auxiliary selection in Standard Italian are as follows (6).

(6)   a. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi{:}\alpha]$
        b. $/\sqrt{\text{BE}}/ \leftrightarrow \text{Perf}$ elsewhere

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[6]However, not all analyses assume that BE is the elsewhere form. For Perlmutter (1989: 82), HAVE is the default allomorph. Moreover, in diachrony Latin HAVE has spread through deponent verbs, thereby substituting the periphrastic perfect with BE (Tuttle 1986). In addition, in many languages (Spanish, Sicilian) HAVE has been generalized as the only auxiliary.

In this dissertation, I adopt the framework of *Distributed Morphology* for late Vocabulary Insertion (Halle and Marantz 1993; Harley and Noyer 1999). The lexical entries in (6) map the verbal roots $\sqrt{\text{HAVE}}$ and $\sqrt{\text{BE}}$ to the syntactic terminal node Perf, depending on the π-feature it bears. In this case, the π-feature is not spelled out as person inflection on the verb, as it happens for example for subject-verb agreement in Standard Italian and in English, but it rather determines the lexical choice of the auxiliary.

Lexical insertion is subject to the *Subset Principle* (Halle and Marantz 1993; Halle 1997): the exponents in (6) are in competition for the same terminal node Perf, in such a way that the exponent that realizes the largest subset of features on Perf will be inserted. In particular, HAVE is inserted when the head Perf has agreed in π-features with another head. BE is the default exponent, which is instead inserted when Agree has failed, meaning that no π-value could be copied onto the probe. Agree may fail either because there is no matching goal in the c-command domain of the probe (as is the case for unaccusative verbs) or because the goal is a π-defective item (as it happens with reflexive clitics). The presence of BE always reflects a case of "defectiveness", either in the type of *v* or in the features of the arguments. Thus, the insertion of BE is a case of emergence of the unmarked, since the conditions of insertion of the more specific allomorph HAVE are not met.

Note that the entries in (6) are written as metarules. With the term *metarule* I mean an abstraction over the specific VI rules that realize the a head by means of different allomorphs. It is a generic formulation that does not precisely illustrate the correspondence between a particular morpho-phonological exponent and the morpho-syntactic bundle of features that it substitutes, as Vocabulary Item (VI) rules do. The rule (6-a) states that the root $/\sqrt{\text{HAVE}}/$ realizes the terminal node Perf when this bears a valued person feature $\pi{:}\alpha$, independently of the effective value of α. If this is not the case, Perf is realized by the default root $/\sqrt{\text{BE}}/$, in accordance with the Subset Principle. Indeed, the precise phonological exponents depend on the morphological features on T. The actual Vocabulary Items for the present tense for the roots $\sqrt{\text{HAVE}}$ and $\sqrt{\text{BE}}$, whose paradigm is illustrated in Table 3.3, are given in (7).

		1sg	2sg	3sg	1pl	2pl	3pl
HAVE		/ɔ/	/aj/	/ha/	/abːjamo/	/avete/	/anːo/
BE		/sono/	/sɛj/	/ɛ/	/sjamo/	/sjɛte/	/sono/

Table 3.3: Allomorphs of HAVE and BE in the present tense.

(7)   a.   /a/ $\leftrightarrow$ Perf[π]

        b.   /av/ $\leftrightarrow$ Perf[π] / T[π: +participant, #: -singular]

        c.   /son/ $\leftrightarrow$ Perf / T[π: +participant +speaker, #: +singular]

        d.   /ɛ/ $\leftrightarrow$ Perf / T[π: -participant, #: +singular]

        e.   /se/ $\leftrightarrow$ Perf

The roots in (7) are then combined with person and number inflection, which substitutes the terminal node T, creating the actual words of the paradigm in Table 3.3.[7] For inflection, I use the following vocabulary entries.

(8) a. /o/ $\leftrightarrow$ T[π: +participant +speaker, #: +singular]
     b. /i/ $\leftrightarrow$ T[π: +participant, #: +singular]
     c. /∅/ $\leftrightarrow$ T
     d. /jamo/ $\leftrightarrow$ T[π: +participant +speaker, #: -singular]
     e. /ete/ $\sim$ /jete/ $\leftrightarrow$ T[π: +participant, #: -singular]
     f. /ono/ $\sim$ /on:o/ $\leftrightarrow$ T[π: -participant, #: -singular]

The alternation between more than one allomorph for the same morpho-syntactic bundle is phonologically-driven and/or depends on the thematic vowel.

3.2.4 Clitic pronouns

I consider clitics as pronominal items that (a) do not constitute a phonological word, (b) cannot be stressed, (c) cannot be dislocated nor focused, (d) cannot appear in isolation, (e) have a fixed position in the clause (Cardinaletti and Starke 1999: 7). Given these properties, clitics do not surface in the same position as full DPs, as shown in (9).

(9) a. Teresa mangia   la   torta.
         Teresa eat.PRS.3SG the cake
         'Teresa eats the cake.'
     b. Teresa la$_i$=mangia   t$_i$
         Teresa ACC.3SG=eat.PRS.3SG
         'Teresa eats it.'

Both the full DP (9-a) and the clitic pronoun (9-b) are the internal arguments of the lexical verbs. However, the clitic cannot occur in its base position, but it has to move to the tensed verb, i.e. to the T head, which becomes its prosodic host. In this dissertation, I assume that clitics move from their base position toward their surface position (Kayne 1975, 1991; Sportiche 1989; Belletti 1999; Matushansky 2006; Bianchi 2006; Cardinaletti 2008). Evidence for this claim is participle agreement, which shows up in the case of a clitic object (cf. chapter 4 for more details).[8] The movement of the clitic to T resembles the movement of a maximal projection with respect to locality, but then the clitic adjoins

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[7]When the roots are combined with inflection, morpho-phonology is responsible for modifying the VI rules in (7) in such a way that the exponents exactly correspond to the strings in Table 3.3. For example, /ab:-jamo/ and /av-ete/ share the root allomorph $av-$, which becomes $ab:-$ in the context of a high (front) vowel. Moreover, a vowel iatus is resolved by coalescence: for instance, first person singular /a-o/ becomes /ɔ/. I leave the question whether this is productive phonology or phonological conditioned allomorphy out of the discussion.

[8]However, there are other theories that propose that the clitics are base-generated in their surface position, such as Sportiche (1996); Monachesi (2005) among others. Evidence for this approach comes mainly from clitic doubling.

as a head to T, forming a complex head with it (Belletti 1999; Matushansky 2006). In fact, the clitic and the verb cannot be separated by any other material except by other clitics. Moreover, if the verb further moves to C, as in so-called Aux-to-C movement, then the clitic moves together with the verb (10).

(10)   Gli=avesse   Gianni parlato   in anticipo, niente
       DAT.3SG.M=have.CONG.PST.3SG Gianni talk.PRTC in advance, nothing
       sarebbe   successo.
       be.COND.3SG happen.PRTC
       'If Gianni would have talked to him in advance, nothing would have happened.'
                                                      (Cardinaletti and Starke 1999: 21)

Given this behavior, it has been claimed that clitics are simultaneously heads and maximal projections (Kayne 1975; Cardinaletti and Starke 1999; Belletti 1999; Matushansky 2006). The exact internal structure of clitics is not relevant for our purposes. What is crucial is the featural specification of clitics.

Since clitics cannot be uttered in isolation and must move to T, I propose that clitics bear a selectional feature [•T•]. This triggers internal Merge (movement) of the head on which it is located with a T category. Consequently, the clitic moves to T because this selectional requirement cannot be satisfied within the verbal phrase. In fact, the clitic (via [•V•] on D) and the lexical verb (via [•D•] on V) mutually select each other; their selectional requirements are satisfied by external Merge. The head T does not select for something of the [D] type, but rather of the v type. Thus, T is externally merged with the vP that also contains the clitic with its unchecked [•T•] feature. Only at this point the clitic can be internally merged with T. In other words, the unchecked [•T•] feature makes the clitic move (as a phrase) to the edge of the phase v via successive cyclic movement, and then to T (as a head) when T is merged.[9] Once the head T is merged, before it starts discharging its features, the clitic adjoins to it. The earliness of cliticization is due to the Strict Cycle Condition.

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[9]The last step of clitic movement may happen in different ways. A possible solution, in line with the mixed behavior of the clitic as a head and as a phrase, is to split movement into two processes: a syntactic one and a postsyntatic one (Matushansky 2006). In the former, the clitic moves to Spec,T because of its [•T•] feature that triggers internal Merge under c-command. In the latter, the clitic adjoins as a head to T via morphological Merge. Syntactically, the clitics are specifiers of T; only in the post-syntax for reasons of Spell-out, Merger applies making them a proper part of the functional head T.

This approach interleaves morphology with syntax in a way that is not fully compatible with the postsyntactic framework of morphology (Distributed Morphology) that I assume in this dissertation (or it is, at least, non-standard). Another option is to think that the [•T•] simply triggers internal Merge to a T category as soon as possible, which takes the form of head movement instead of phrasal movement for whatever reason (maybe for some special characteristics of clitics). A third option would be to make use of a selectional feature such as [•cl•] on T, as Georgi (2014) does, or of an Agree feature [uF] that establishes Agree between the cliticization host and the full DP, followed by movement of the D head, as proposed by Preminger (2019). This strategy would offer a trigger for this movement, although the question about why head movement is the actual solution instead of phrasal movement is still open. I do not enter into further detail here. The important point here is that the clitic must move out of the phase and then it must adjoin to T as a head.

(11)   *Strict Cycle Condition (SCC)* (Chomsky 1973: 243)
        Within the current cyclic domain α, no operation may exclusively affect positions
        within another cyclic domain β that is dominated by α.

Since the triggering feature is on the clitic itself and not on T, it must be discharged before
going on to the features of T.

The featural array on a pronominal clitic is as follows.

(12)   Features of a clitic pronoun:
        [D] (categorical feature), [ϕ] (ϕ-features), [•V•] (selectional feature, satisfied by
        external Merge), [•T•] (selectional feature, satisfied by internal Merge)

3.2.4.1 The reflexive clitic pronoun

In Italian, reflexive pronouns can appear as direct object or indirect object of the verb.
Two strategies are possible to encode reflexivity: the reflexive argument can be either a
reflexive clitic (*se-reflexive*) or a reflexive phrase (*self-reflexive*), as shown in Table 3.4.

	1sg	2sg	3sg	1pl	2pl	3pl
Reflexive clitics	mi	ti	si	ci	vi	si
Reflexive phrases	me stess-o/a	te stess-o/-a	se stess-o/a	noi stess-i/e	voi stess-i/e	loro stess-i/e

Table 3.4: Italian reflexive pronouns.

Reflexive clitics show overt morphological person and number inflection, but they are
not inflected for gender, differently from non-anaphoric pronouns that present gender
distinctions in the third person singular (for discussion of the person, number and gender
features in pronouns, cf. Cardinaletti 2008). Moreover, a reflexive clitic must be bound
by a c-commanding antecedent (*Principle A*, Chomsky 1981). This is also the reason
why reflexive pronouns cannot appear as external arguments. In addition, reflexive clitics
move to T, as other clitics do. In contrast, the reflexive phrase is a morphologically heavy
pronoun, formed by the weak pronoun in the accusative form (following the definition
between clitic, weak and strong pronouns proposed by Cardinaletti and Starke 1999) plus
a reflexive component that shows gender and number agreement. Moreover, it needs an
antecedent as the reflexive clitic does (although it does not have to be syntactically present,
since the phrase can be uttered in isolation: *'Chi ha scelto Teresa? Se stessa.'* 'Who has
Teresa chosen? Herself.').

Crucially, the reflexive clitic and the reflexive phrase determine different realizations
for the perfect auxiliary: BE if the predicate merges with the reflexive clitic, HAVE if it
merges with the reflexive phrase.

(13)   a.   Teresa si=è   lavat-a.
              Teresa REFL.ACC.3SG.F=be.PRS.3SG wash.PRTC-SG.F

b. Teresa ha   lavato   se=stess-a.
    Teresa have.PRS.3SG wash.PRTC REFL.ACC.3SG=REFL.ACC.3SG.F
    'Teresa washed herself.'

Note that the semantics of the two sentences is equivalent. Hence, I take the presence of the auxiliary HAVE in (13-b) as a hint for the transitive argument structure of both reflexive sentences (13-a,b).[10]

I propose that the difference in the auxiliary selection between these two classes comes about because of the featural specification of the arguments (as hinted also in a footnote by Alexiadou, Anagnostopoulou, and Schäfer 2015: 102). The two types of reflexives enter the derivation with a set of ϕ-features that is differently valued: the se-reflexive has unvalued features, whereas the self-reflexive bears a valued person feature (cf. Reuland 2001 for a similar distinction in terms of valued/unvalued features). The reflexive clitic in (13-a) is a type of se-reflexive, whereas the reflexive phrase in (13-b) is an instance of self-reflexive.

The se-reflexive is morphologically underspecified and referentially defective. It enters the derivation with a set of unvalued ϕ-features. These are valued by a c-commanding antecedent DP via the process of binding (Reuland 2005; Heinat 2006; Kratzer 2009; Rooryck and Vanden Wyngaerd 2011; Sundaresan 2013, 2016). I assume, very generally, that binding is a form of coindexation plus c-command, which leads to ϕ-valuation if one of the involved items carries a set of unvalued ϕ-features. Binding leads to referential dependency, and applies independently of ϕ-feature valuation, which is a reflex of binding.[11] What is crucial for the present analysis is that the reflexive clitic enters the derivation

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[10]In contrast, it has been proposed that (13-a) and (13-b) belong to two different natural classes, in particular (13-a) is an unaccusative structure (Grimshaw 1982). However, it has been shown that the unaccusativity analysis should be rejected (Reinhart and Siloni 2004, 2005; Doron and Hovav 2007; Schäfer 2008, 2012; Sportiche 2014; Alexiadou, Anagnostopoulou, and Schäfer 2015). Therefore, BE in the case of reflexive clitics does not show up because the predicate is unaccusative, but rather because of the featural deficiency of the reflexive clitic.

[11]I consider binding to be the co-indexation relation that ensures that the reflexive phrase and the c-commanding DP bear the same index. Binding consists of the valuation of an index on the reflexive by the index on the antecedent (or, following Hicks (2009), of the feature [var:_] by the feature [uvar:i]). This is independent of ϕ-valuation, which is a consequence of binding if the bindee bears unvalued features. If the reflexive bears already valued ϕ-features, binding does not have the further consequence of enabling ϕ-valuation. Instead, if the reflexive has unvalued ϕ-features, ϕ-valuation applies parasitically on binding: the reflexive DP can copy the ϕ-features from the c-commanding co-referential DP, once binding has taken place.

Technically, binding could be implemented in different ways. Probing always applies downwards, but valuation may apply upwards, if it can make use of a "channel" that has been established by downwards probing. Binding has been modeled as an instance of upward Agree between the antecedent and the anaphor by Fanselow (1991); Reuland (2001, 2005); Heinat (2006); Kratzer (2009); Sundaresan (2013). Another possibility is chain formation, which is a semantic relation (Reuland 2001). The approach of feature sharing (Frampton and Gutmann 2000; Pesetsky and Torrego 2007) is instead not compatible with the analysis of auxiliary selection that I develop in this chapter. In a feature sharing theory of binding, once the feature is shared, it gets valued on every head, meaning also on heads that have agreed with the previously unvalued feature. For the purpose of auxiliary selection, this means that even when Agree on v has failed, as soon as the anaphor gets its ϕ-features valued via binding, also the dependent π-feature on v will be valued. Hence, HAVE would be inserted even in reflexive clauses, contrary to the facts (cf. section §3.3.2).

with unvalued ϕ-features and acquires a value via binding as soon as the antecedent (the external argument, for example) enters the derivation.[12]

In contrast, I propose that the self-reflexive (the reflexive phrase in (13-b)) starts the derivation with a valued person feature.[13] The self-reflexive contains a pronominal part that in its canonical use as weak pronominal (i.e. out of the context of the self-reflexive) contains a valued person feature and is not bound by any antecedent (*Principle B*, Chomsky 1981). Hence, I propose that the pronominal subpart of the self-reflexive is valued for the person feature. However, the self-reflexive needs to be bound in the very same way as the se-reflexive does, since only a subset of its features is valued (namely, $[\pi]$, but not $[\#]$ and $[\gamma]$). In fact, the non-pronominal part $/\sqrt{\text{STESS-}}/$, which behaves as an agreeing adjective, bears unvalued ϕ-features and receives gender and number from the binder. Binding establishes the co-referentiality relation via coindexation (Hicks 2009). Then, the missing features are copied from the c-commanding antecedent. The person feature is not acquired from the binder, but it must match because of coindexation. A difference in person feature would lead to a failure to bind, which causes ungrammaticality because of a fatal violation of Principle A. This is shown in example (14), where the arguments contain conflicting person specifications.

(14) *Io   ho   lavato   se=stess-a.
       NOM.1SG have.PRS.1SG wash.PRTC REFL.ACC.3SG=REFL.ACC.3SG.F
       'I have washed myself.'

To sum up, reflexive clitics and reflexive phrases have the following featural specification.

(15) a. se-reflexive: [D], [uV], [•T•], $[\pi:\_]$, $[\#:\_]$, $[\gamma:\_]$
      b. self-reflexive: [D], [uV], $[\pi:\alpha]$, $[\#:\_]$, $[\gamma:\_]$

In the derivations, I sometimes use *si* as a label for the reflexive clitic, independently of its ϕ-features. With si, I refer to all cases of se-reflexive illustrated in Table 3.4.

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[12]The reflexive clitic can also be bound by a PRO, as in (i).

(i)   PRO Lavar=si   è   importante.
              wash.INF=REFL.ACC.3SG be.PRS.3SG important
       'It's important to wash oneself.'

This is an impersonal clause where the external argument is actually an impersonal PRO$_{\text{arb}}$ (Cinque 1988). The impersonal argument PRO$_{\text{arb}}$ bears a plural number feature, but an unvalued π-feature (cf. section §3.2.4.2 on the impersonal pronoun). This means that the se-reflexive needs to be bound, but does not need to acquire a valued π-value.

[13]For further discussion of the differences between the two classes of reflexives, cf. also Reinhart and Reuland (1993); Spathas (2010); Bergeton and Pancheva (2011); Lechner (2012).

3.2.4.2 The impersonal *si*

The impersonal *si* is a clitic: it does not constitute a phonological word, it cannot be stressed, it has a fixed position in the clause (closer to the verb than other clitics), it cannot be dislocated and it cannot appear in isolation (D'Alessandro 2004: 11). There is a large debate in the literature about its morpho-syntactic representation.

The main question concerns its argumental status: impersonal *si* is either a syntactic argument, i.e. a referential element with a Theta-role, or a morpheme realizing a functional head. An analysis of the former type has been proposed by D'Alessandro (2004: 39-41): *si* can be merged in every argument position, can bear a Theta-role and a case specification and is at least partially referential (it refers to an unspecified group of humans including the speaker, Chierchia 1995). An example of the latter type of approach is developed by Dobrovie-Sorin (1998). Looking at Romanian, where impersonal *si* bears accusative case, she proposes the existence of a middle-passive *si*. This morpheme marks the suspension of the external Theta-role, which is a free syntactic option under this approach (Dobrovie-Sorin 1998: 401).

The mixed behavior of *si* between a full argument DP and a passivizing marker has been firstly recognized by Cinque (1988), who proposes the existence of two types of *si*, one argumental ([+arg]) and one non argumental ([−arg]). The distinction is visible from the distribution of *si* in non-finite contexts, where the impersonal *si* cannot be combined with unaccusative, passive, psych-predicates. Cinque (1988: 529) proposes the following representation for the impersonal *si*.

(16) a. syntactically: ± argument
      b. morphologically: underspecified for person (*generic* or *arb*), number plural, gender masculine (π:__, #: plur, γ: masc)
      c. semantically: [+human]

For the purpose of this dissertation, I will not go into further details about the characteristics of this clitic. My position is that the impersonal *si* is an argument and is able to be merged in every argument position. At the same time, I associate it to the functional head Voice$_{\text{impers}}$, which must be present in impersonal clauses in order to license the impersonal argument. This proposal is addressed in details in section §3.3.9. What is important for my analysis is the featural defectiveness of the clitic, as I will now explain.

The second main issue about impersonal *si* concerns the features it bears. All the above-mentioned analyses (Cinque 1988; Dobrovie-Sorin 1998; D'Alessandro 2004) share the following claim: *si* does not bear a set of completely valued syntactic ϕ-features. The reason can be either because it is not an argument at all (Dobrovie-Sorin 1998), because it has underspecified syntactic features (Cinque 1988), or because some of its features are semantic rather than syntactic (D'Alessandro 2004). Similarly, I also assume that the person feature on *si* is not specified at all: [π:__].

This proposal about the unvalued person feature of *si* can be tracked back to Burzio (1986), where impersonal *si* is considered to have no person feature. Also for Manzini (1986) the person feature on *si* is unspecified. For Cinque (1988), it bears a generic person feature, called *arb*. This *arb* is something like a syntactic marker for unspecified person, which needs to combine with a personal AgrP.[14] Also for Cardinaletti and Starke (1999) the impersonal is always arbitrary, in the sense that it is associated with a default set of features, including [+human]. A similar account has been also proposed by Nevins (2007), where defectiveness again affects the value of the attribute [person]. Impersonals are compatible with any antecedent because they have disjunctive specifications, meaning that they bear all feature specifications simultaneously, but they are underspecified for [participant] and [author].

D'Alessandro (2004) has a different position regarding the featural defectiveness of *si*. The impersonal argument is defective in its number feature, instead of person. It does not bear any syntactic number (its plural number being a semantic feature), but it is syntactically marked for person (in particular, third person), as all other pronouns are. In contrast to D'Alessandro (2004), I think that there are some pieces of evidence for the underspecification of person.

The main argument for treating *si* as equipped with an unvalued person feature, rather than without a person feature, are some PCC effects such as in (17) (D'Alessandro 2017a: 17).[15] As the example shows, the object of a transitive impersonal clause cannot be 1 or 2nd person.

(17)   *Si=vedo/vede   io/me.
        impers=see.prs.1sg/prs.3sg nom/acc.1sg
        'One sees me.'

This person restriction could suggest an analysis of *si* as specified for third person. However, I would like to argue that this PCC effect arises not only in the case of third person over local person, but also in the case of unspecified person over local person. In other words, there is a cutting point between local person (π:1, π:2) on the one side and everything else (π:3, π:_) on the other side.

Secondly, the impersonal clitic lacks morphologically inflection. It is morphologically invariant, differently from the reflexive clitic *si* and from other personal pronouns that inflect for case, number and gender.

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[14]As will become clear in section §3.3.9.1, I propose that Voice$_{impers}$ bears unvalued ϕ-features, which need to match with the same type of features on *si* in its specifier. This idea is in line with the intuition of a "special syntactic person".

[15]The *Person Case Constraint (PCC)* (an empirical generalization originally observed by Perlmutter 1971; Bonet 1991) is a ban against certain combinations of person features across multiple clitic arguments (cf. Coon and Keine 2020 for an overview of the phenomenon and of the available analyses).

(i)   *Person Case Constraint (PCC)* (Bonet 1991, 1994)
        If dat, then acc is 3rd person.

Thirdly, it can include the speakers or not, meaning that it can be semantically associated with different person specifications. This has not to do with the well-known distinction of inclusive versus exclusive person, but it refers to an interpretation of either 2 or 3ʳᵈ person plural or 1ˢᵗ person plural. For example, in a sentence such as (18), *si* can be interpreted as 1 or 3ʳᵈ person plural if the speaker is Italian (1: inclusive interpretation; 3: exclusive interpretation); instead, if the speaker is English, the only available interpretation is 3ʳᵈ person plural. Similarly, if the speaker is English and the hearer is Italian, the interpretation of the impersonal *si* in (18) would be 2ⁿᵈ person plural (*si* refers to a group of people that includes the hearer, but excludes the speaker).

(18) In Italia si=mangia   molti spaghetti.
      in Italy IMPERS=eat.PRS.3SG many spaghetti
      'In Italy one eats a lot of spaghetti.'

Fourthly, it occupies a different position in the string in comparison with person and reflexive clitics.

(19) a. Paolo e   Maria se=lo=sono   raccontato.
          Paolo and Maria REFL.DAT.3PL=ACC.3SG.M=be.PRS.3PL tell.PRTC
          'Paolo and Maria have told this to each other.'
      b. Lo=si=è   raccontato.
          ACC.3SG.M=IMPERS=be.PRS.3SG tell.PRTC
          'People have told this.' (D'Alessandro 2004, the different translation is mine)

Finally, it is associated with semantic features, such as [+human]. Whereas this point does not exclude in itself a syntactic representation of semantic features, it can also allow to represent all these features semantically, rather than syntactically.

To sum up, I consider impersonal *si* as an argumental clitic with a defective set of ϕ-features, in particular with an unvalued $[\pi]$ feature. This *si* does not need to be bound, but must be licensed by a special Voice$_{\text{impers}}$ (for similar proposals, cf. Legate 2014; Alexiadou, Anagnostopoulou, and Schäfer 2015).

3.3 Derivations

I now provide an explicit, derivational analysis for the data described in section §2.1 in chapter 2. For the sake of simplicity, I use the symbols α and β as diacritics to indicate the value for π, # and γ in the specific feature geometry under the node ϕ called α or β. In $[\pi{:}\alpha]$ and $[\#{:}\alpha]$, α indicates that both values come from the same set of features (i.e., from the same DP), with the difference that in the one case α stands for a person value for the attribute π, in the other case for a number value for the attribute #. Note that this is only a notation and not an index. In fact, the information about the source of the features is not relevant for the analysis: it does not matter whether the ϕ-values come from a single DP or from different DPs.

As I mentioned in the previous section §3.2.1.2, I consider transitive verbs and unergative verbs as predicates that are introduced by a non-defective v, and whose argument structure is fully realized (with an internal and an external argument). Unaccusative verbs are predicates that are merged with a defective v, which does not introduce any external argument; therefore, the sole argument is the internal one. For predicates that have a mixed behavior, I adopt the view of Sorace (2000): they can be categorized in different positions along a cline of intransitivity. Depending on how they are categorized, the syntactic structure corresponds either to the one of unergatives or to the one of unaccusatives.

I will now present the analysis of all cases of auxiliary selection in Standard Italian.

3.3.1 Transitive verbs

A transitive verb is a verbal root that is selected by a full argument structure v, which introduces the external argument, assigns accusative case and contains a person probe that agrees with the internal argument. In (20), an example of a transitive verb in the perfect aspect is repeated again. The lexical verb is morphologically realized as a past participle and the perfect auxiliary is a form of the verb HAVE, with the person and number inflection controlled by the subject.

(20) Teresa ha   lavato   la camicia.
      Teresa have.PRS.3SG wash.PRTC the shirt
      'Teresa has washed the shirt.'

When the higher portion of the syntactic tree contains a perfect projection Perf, the head Perf successfully agrees with v for π. Given the lexical entries in (6), repeated again in (21), Perf is then spelled out by the exponent HAVE.

(21)   a. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi{:}\alpha]$
       b. $/\sqrt{\text{BE}}/ \leftrightarrow \text{Perf elsewhere}$

I now show in details how the syntactic derivation of a sentence such as in (20) looks like.

(22)
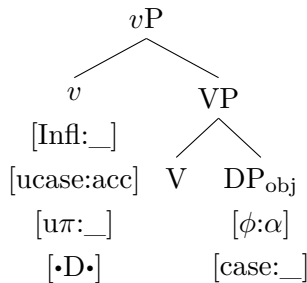
(23)
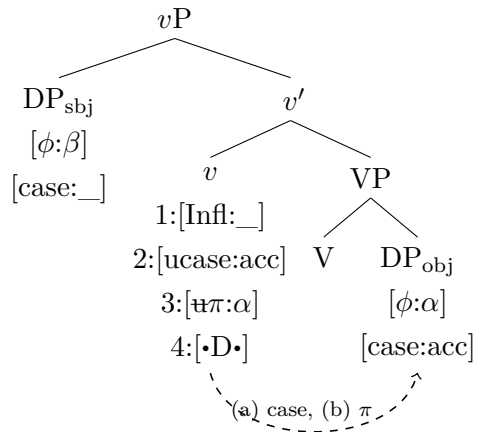
First of all, the VP is built and merged with a transitive v, which has the following feature specification: $[\text{Infl:}\_] \succ [\text{ucase:acc}] \succ [\text{u}\pi\text{:}\_] \succ [\bullet D \bullet]$, as shown in (22). All operations are performed exactly in this order. This is represented in (23). $[\text{Infl:}\_]$ cannot be checked in this first step, since there is no other item that bears [Infl] (however, it is not a probe, meaning that it does not need to be discharged). Moving on to the second feature, accusative case is assigned to the DP in Comp,V. Thirdly, v copies the π-feature from the DP object via Agree. Having acquired a π-feature, v can now become a goal for further probes. Finally, v introduces the external argument via the selectional feature $[\bullet D \bullet]$ and assigns it the external Theta-role. This precise ordering of features, and in particular the $[\bullet D \bullet]$ feature being the last one, is due to the Strict Cycle Condition.

(24)   *Strict Cycle Condition (SCC)* (Chomsky 1973: 243)
       Within the current cyclic domain α, no operation may exclusively affect positions within another cyclic domain β that is dominated by α.

This principle states that no operation can target a subpart of the tree with the exclusion of the highest terminal node. This means that a probe feature cannot carry out Agree with some items in the complement after a specifier has been merged. In the present case, the earlier discharge of $[\bullet D \bullet]$, which creates the specifier, would make impossible to perform Agree on v via $[\text{u}\pi\text{:}\_]$, since this operation involves the head and its complement with the exclusion of the specifier. I do not mean that Agree is bled by the order $[\bullet D \bullet] \succ [\text{u}\pi\text{:}\_]$: the derivation is simply impossible without violating the SCC.[16]

Now all operations inside the vP are completed. The features [Infl] on v and [case] on the DP_{sbj} have not been checked yet. The next syntactic head that is merged with vP is Perf, as shown in (25).

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[16]The SCC is considered a very important principle in this dissertation. However, even if one would like to reject this principle, the specific order of features on v that I have proposed and justified with the SCC is needed anyway. In fact, if case is assigned after the introduction of the external argument, the subject could be a competitor for case assignment. It is also true that accusative case would be assigned to the object even under different orders of features if we take into consideration other properties of the operation as well. For example, by assuming that case assignment proceeds exclusively downwards (again, as it follows from the SCC), the object would be the target for accusative assignment anyway, no matter which ordering of features is assumed. However, the Strict Cycle Condition ensures that the operations are applied in an order that provides the right derivation. This point will become clear in the section §3.3.2 on reflexive clauses.

(25)

PerfP

Perf vP

1:[~~u~~Infl:perf]   DP$_{\text{sbj}}$ v'

2:[~~u~~π:α]   [ϕ:β]

[case:__] v VP

[Infl:perf]

(a) Infl, (b) π [~~case:acc~~]   V   DP$_{\text{obj}}$

[~~u~~π:α]   [ϕ:α]

[•~~D~~•]   [case:acc]
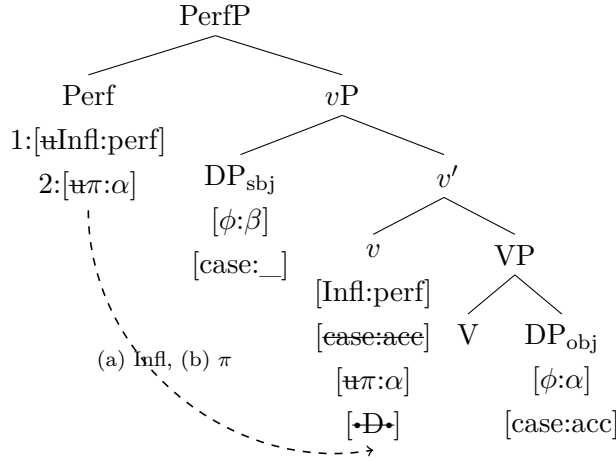
Recall that the array of features on Perf is so ordered: [uInfl:perf] $\succ$ [uπ:__]. Perf contains the probe [uInfl:perf] that needs to find another [Infl] to be checked with. The head v contains an instance of [Infl:__], it is accessible (in accordance to the Phase Impenetrability Condition[17], it is c-commanded by the probe [uInfl:perf] and it is the closest matching goal (meaning that there is no other instance of [Infl] that intervenes between the probe on Perf and this potential goal on v).[18] Therefore, Perf agrees with v. The value *perf* is copied onto v, which will be spelled out as a past participle. After this feature has been discharged, Perf goes on with the second one. [uπ:__] is a probe that looks for a matching goal. In the c-command domain of Perf there are two possible matching items, i.e. two syntactic positions with a [π] value: the DP$_{\text{sbj}}$ and v (the DP$_{\text{obj}}$ is invisible because of the PIC). Crucially, the head Perf has already carried out an operation ([uInfl:perf]) before starting this new search ([uπ:__]). Therefore, the conditions of application of Nested Agree are met. I repeat here again the definition of Nested Agree, developed in chapter 2.

(26)   *Nested Agree*

Let F$_1$ and F$_2$ be two ordered probes on the same head H. The search space of F$_1$ is the c-command domain of H.

(i)   *Maximize*: if the Agree operation A_1 for the feature F$_1$ has targeted the goal G, then the subsequent Agree operation A_2 for the feature F$_2$ must also target G.

(ii)   *No-backtracking*: If G is not a matching goal for F$_2$, the search space of F$_2$ is the c-command domain of G (not of H).

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[17]For the *Phase Impenetrability Condition* (Chomsky 2000: 108, Chomsky 2001: 13), see (4).

[18]With the term *intervention* I refer to the configuration in which a matching feature is c-commanded by the probe and is closer to the probe than the goal is. Intervention is computed via c-command and requires feature matching. For a valued probe, the possible matching feature is the same feature, either unvalued or already valued. For [uInfl:perf], the matching features are [Infl:perf], [Infl:__], and also a feature such as [Infl:pass]. Cf. chapter on Nested Agree 2 for a discussion of intervention, defective intervention and minimality.

Nested Agree states that this second operation ($[u\pi:\_]$) should check as a first possible goal the goal (G) of the previous operation ([uInfl:perf]). The first operation carried out by Perf has found its satisfaction in the feature [Infl] on the head v. Now the second operation ($[u\pi:\_]$) must start from the same head v and check if v bears another feature by which it can be satisfied. In the present case, v contains a value for the person feature. In fact, it has probed for π and has copied a value from the DP_{obj}. Thus, v can satisfy not only the first feature [Infl] on Perf, but also this second person probe. Therefore, no further search operation must be initiated for $[u\pi:\_]$, since v has already satisfied it.

Note that the DP_{sbj} is actually the structurally closest matching goal, but it is invisible for the search of $[u\pi:\_]$, because Perf is forced to use the open channel that has been established by the previous probe. In other words, the DP_{sbj} lies outside the search domain of Perf$[u\pi:\_]$ (while it was contained in the locality domain of Perf[uInfl:perf]): there is no intervention, if the domain of Agree is relativized.

In Standard Italian, the dependency of the perfect auxiliary on argument structure is achieved by Agree of the head Perf with v. The interaction with the features of the direct object is realized by means of cyclic Agree (Legate 2003) between Perf and the DP_{obj}, enabled by the mediation of v.

The derivation proceeds with Merge of T. The T head brings into the syntactic structure the required tense specification by means of a [Tense] feature that can have different values, such as present, past, non-finite and so on. Moreover, it assigns nominative case to the DP_{sbj} in its c-command domain. The second operation it triggers is ϕ-Agree. Again, there are two different goals in the c-command domain: Perf and the DP_{sbj}. Given Nested Agree (and the previous operation of case assignment), the ϕ-probe on T does not target Perf, but it targets instead the subject.[19] After T has copied the ϕ-values from the DP_{sbj}, it raises it to its specifier via the EPP-feature [•D•]. The tree in (27) represents these operations.

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[19]If Nested Agree would apply to selectional features as well, one would expect T to agree with Perf, which does not happen: we always get subject agreement on T. First of all, if case assignment precedes ϕ-Agree, as I said, the features appear in the order [•v•](triggering Merge with PerfP) $\succ$ [ucase:nom] $\succ$ [uϕ]. Under this order, the goal of [•v•] is PerfP. The goal of [ucase:nom] is, given Nested Agree, PerfP. However, this does not satisfy the probe. Hence, the search goes on within the sister of Perf, thereby finding the DP_{sbj} in Spec,v. The goal of [uπ] is, given Nested Agree, the DP_{sbj} in Spec,v, which is a matching goal. Hence, even though selectional features are subject to Nested Agree, the derivation does not change under the feature ordering that I have proposed. Nested Agree considers only the immediately preceding Agree-Link: in the definition in (13), the value of G is constantly updated to the latest probed goal. The alternative solution is to say that Nested Agree ignores selectional features (and, eventually, considers only Agree operations).

(27)
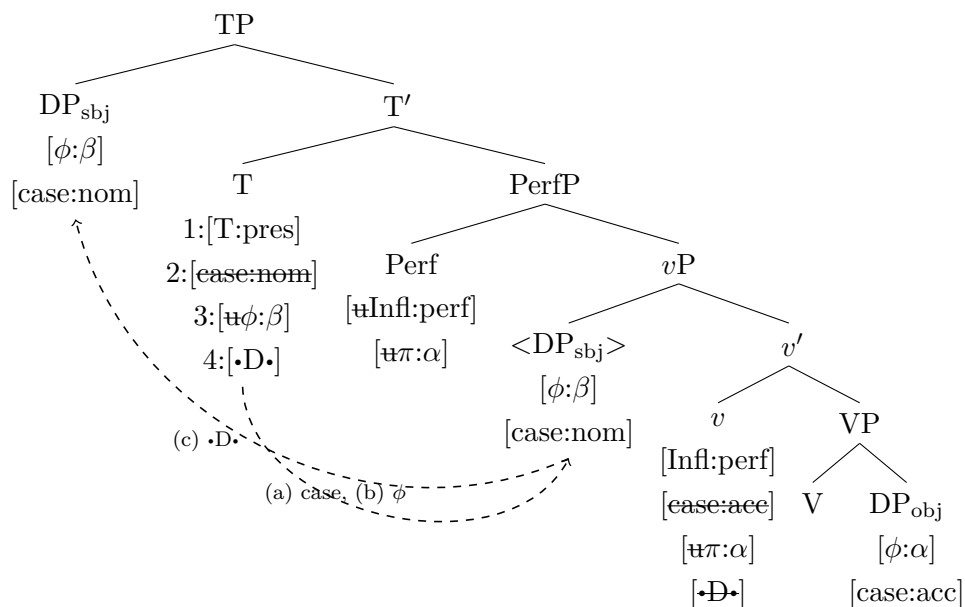
As a result of this syntactic derivation, the head Perf has copied a π value. Two complex heads are formed via head movement, V+v and Perf+T, as in (28) and (29).

(28)
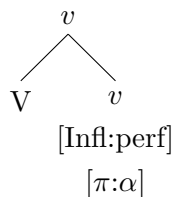
(29)
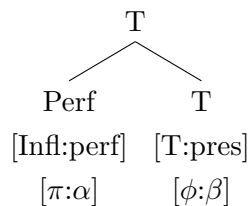
At the point of vocabulary insertion, Perf is substituted by HAVE, given the lexical entry (6-a), repeated here again.

(30) $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi{:}\alpha]$

The lexical entries for the clause in (20) are as follows.

(31)   Spell-out

    a.   /la/ /kamitʃa/ $\leftrightarrow$ DP[$\sqrt{\text{SHIRT}}$][ϕ:-part,+sg,+f][case:acc]

    b.   /lavato/ $\leftrightarrow$ v[Infl:perf][π:-part] + V[$\sqrt{\text{WASH}}$]

    c.   /a/ $\leftrightarrow$ Perf[π:-part] + T[T:pres][ϕ:-part,+sg,+f]

    d.   /teresa/ $\leftrightarrow$ DP[$\sqrt{\text{TERESA}}$][ϕ:-part,+sg,+f][case:nom]

3.3.2 Transitive verbs with reflexive object

We have seen that the auxiliary "switches" from HAVE to BE when the object of a transitive verb is a reflexive clitic pronoun, as in (32).

(32)   Teresa si=è   lavata.
       Teresa REFL.ACC.3SG.F=be.PRS.3SG wash.PRTC
       'Teresa washed herself.'

I consider BE as the default auxiliary (cf. the vocabulary entries in (6)). This means that the reflexive object causes a kind of "defectiveness" in the structure, so that the condition of insertion of the more specific auxiliary HAVE is not met and the unmarked BE must be instead inserted. The particular behavior of the auxiliary in (32) is the direct consequence of the featural defectiveness of the reflexive clitic *si*.[20] As I have proposed in section §3.2.4.1, the reflexive clitic *si* is featurally deficient. This means that it enters the derivation with unvalued ϕ-features. In contrast, self-reflexives are morphologically specified for π-features.

Note that in the present case the auxiliary BE is not due to the argument structure itself: we are not dealing with an unaccusative structure with just a single argument.[21] In fact, if the object is not a clitic but rather a self-phrase co-referential with the subject, the more specific auxiliary HAVE is inserted, as (33) shows.

(33)   Teresa ha   lavato   se=stess-a.
       Teresa have.PRS.3SG wash.PRTC self=self-SG.F
       'Teresa washed herself.'

Moreover, when the reflexive clitic is in the indirect argument position and the clause contains a non-reflexive direct object, the perfect auxiliary is again realized as BE, as shown in (34).

(34)   Teresa si=è   mangiat-a   il panino.
       Teresa REFL.DAT.3SG.F=be.PRS.3SG eat.PRTC-SG.F the sandwich.SG.M
       'Teresa ate the sandwich.'

Since (34) is clearly a transitive clause, the reason why BE shows up in (34) and in (33) cannot be an unaccusative syntactic structure.

In this dissertation, I propose to treat sentences like (32) as normal transitive clauses, since the meaning of sentences (32) and (33) is identical and it is transitive. Moreover, the reflexive clitic behave as a direct object, which is possible only with transitive verbal roots. For these reasons, I adopt the transitive-unergative analysis of reflexive clauses, which has been proposed by De Alencar and Kelling (2005); Doron and Hovav (2007); Schäfer (2012); Sportiche (2014); Alexiadou, Anagnostopoulou, and Schäfer (2015), among

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[20]This intuition is already present in Alexiadou, Anagnostopoulou, and Schäfer (2015). In a footnote, the authors hypothesize that BE-selection is due to the morpho-syntactic properties of the reflexive clitic in combination with clitic movement, although they do not present any analysis (Alexiadou, Anagnostopoulou, and Schäfer 2015: 102). That the perfect auxiliary BE in reflexives is not tied to intransitivity, but rather to the syntactic presence of the reflexive pronoun, has also been recognized by Schwarze (1998: 103-104).

[21]For the unaccusative analysis of reflexives, cf. Kayne (1975, 1989b); Grimshaw (1982); Bouchard (1982); Marantz (1984); Grimshaw (1990); Pesetsky (1996); McGinnis (1997, 2004); Sportiche (1998); Embick (2004), among others.

others.[22] In favor of the transitive analysis of reflexive clauses are the following facts: (i) the meaning is transitive (also recognized by proponents of the intransitive analysis Reinhart and Siloni 2004; Labelle 2008), (ii) the reflexive clitic in Romance (and German) reflexive verbs behaves like an object anaphor subject to principle A of the Binding Theory (De Alencar and Kelling 2005; Doron and Hovav 2007; Labelle 2008; Sportiche 2014), (iii) with the particle *only*, both a strict reading and a sloppy reading are available (the former should not be possible if reflexive clauses were unaccusative clauses) (Sportiche 2014), (iv) in a reflexive context, both the agent and the theme can be focused independently (Schäfer 2012), (v) in some languages as German and Icelandic the passive of reflexive verbs is attested (Schäfer 2012). Some other particular issues that favor the transitive analysis are pointed out by De Alencar and Kelling (2005) for German. Reflexive pronouns are subject to exactly the same ordering constraints as object pronouns; case assignment and auxiliary selection works as in transitive clauses; the behavior of reflexives in participial constructions matches that of transitive objects; the direct object must be realized as oblique when there is also a reflexive pronoun.

I now show the derivation in trees (35)–(38). In the analysis, I use the label *si* for the reflexive clitic pronoun in general, independently of the particular ϕ-specifications. With *si*, I mean the bundle of morpho-syntactic features that is realized at Spell-out as a reflexive clitic (cf. Table 3.4 for the particular phonological realizations depending on the person and number feature).

---

[22]It is true that Romance reflexive clauses show some intransitive behavior. For this reason, an unergative analysis has been proposed by Reinhart and Siloni (2004, 2005): reflexivization is due to an operation of internal role reduction. The relevant facts in favor of an intransitive, unergative analysis are the following: (i) predicates that lack an external Theta-role (passive, raising) are incompatible with reflexive clitics, (ii) reflexive clauses fail the tests for unaccusativity such as *ne*-cliticization (but note that judgments here are not uniform, cf. Reinhart and Siloni 2004: 172), agent nominals, and reduced relative clauses. Two further differences with transitive predicates, noted by Kayne (1975), are expletive insertion in French, which is impossible with transitives, and possible with reflexive verbs, and French causative constructions, where reflexives pattern with intransitives. Finally, the cross-linguistic comparison with languages as Hebrew, where reflexive clauses are intransitives, may suggest the same treatment for Romance languages. Reinhart and Siloni (2004, 2005); Labelle (2008) propose that, although the reflexive verb is syntactically unergative, its semantics retains the original roles of the transitive base entry. This might be compatible with the analysis of auxiliary selection that I propose here, where reflexive clauses contains a transitive *v* and a reflexive argument base-merged in the object position (independently of what happens later to it). I leave the question open, whether reflexive clauses deserve an unergative or transitive analysis. Nonetheless, I follow De Alencar and Kelling (2005); Doron and Hovav (2007); Sportiche (2014); Alexiadou, Anagnostopoulou, and Schäfer (2015) for the suggestion that this intransitive behavior does not necessarily imply that the syntax must be intransitive. Just to provide an example, De Alencar and Kelling (2005) have analyzed the alleged intransitive behavior in causative constructions as due to binding constraints on the reflexive pronoun.

(35)

```
              vP
          ╱       ╲
         v          VP
    1:[Infl:__]    ╱   ╲
    2:[ucase:acc] V   DP_obj-refl
    3:[uπ:__]          [φ:__]
    4:[•D•]            [case:__]
                       [•T•]
         (a) case, (b) π
```

(36)

```
              vP
          ╱       ╲
      DP_sbj        v′
      [φ:β]      ╱     ╲
      [case:__] v        VP
            1:[Infl:__] ╱   ╲
            2:[case:acc] V  DP_obj-refl
         (c) •D•              [φ:__]
            3:[uπ:__]         [case:acc]
            4:[•D•]           [•T•]
         (d) binding
```
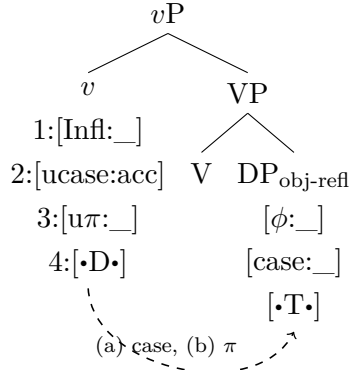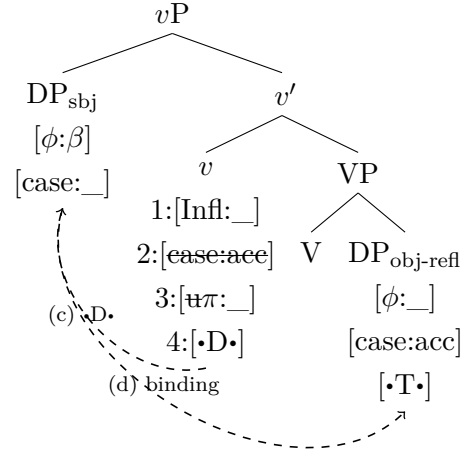
The argument structure in (35) is the same as for transitive predicates. However, the object consists of a ϕ-defective item. It is also a clitic: it bears a $[\cdot T \cdot]$ feature that must be checked with T. First of all, v agrees with the internal argument. This bears ϕ-features, although unvalued. Recall that the function of Agree is the erasure of uninterpretable features and not feature valuation (cf. section §2.3.1 in chapter 2 for details). Agree is simply the search for a matching feature, independently of its value, for syntax-internal and for interface-related reasons. The DP$_{obj}$ is a suitable goal for v: it is in its c-command domain and it contains a matching feature. Even though an unvalued matching feature is not able to provide a value for the probe, it is able to satisfy it. Therefore, v agrees with the DP$_{obj}$ for $[\pi]$. The result of this Agree operation is the following: $v[u\pi:\_]$. Agree is successful, although no value has been copied. This can be seen a case of defective intervention for valuation: an unvalued matching feature causes Agree to stop without successful valuation.

When all operations within the complement of v have been carried out, v introduces the external argument. The operation triggered by the feature $[\cdot D \cdot]$ must happen after case assignment and π-Agree because of the Strict Cycle Condition, since it involves the head and the specifier. The external argument is merged in the specifier of v. At this point binding takes place: the two DPs are now coindexed. As a consequence of coindexation, the reflexive clitic acquires the same ϕ-features as the DP$_{sbj}$.

The crucial point is the timing of the operations: Merge of the external argument (and binding) follows π-Agree on v. This is a relation of counter-feeding: binding takes place too late for feeding the successful valuation by Agree. Had the external argument been introduced by v as the first operation, Agree on v would have successfully copied the π-feature of the subject as it stands on the object, since this would have been already bound by the subject. Successful valuation on v would have determined the substitution of Perf with the more specific allomorph HAVE, exactly as we saw for transitive verbs, and against the actual data in (32). The Strict Cycle Condition ensures the earliness of Agree

(an operation between the head and its complement) with respect to the introduction of the external argument (an operation that involves the edge of the head). This has the consequence of preserving the distinction between an element with a full set of ϕ-features from an element which is ϕ-defective. The former is the case of a transitive canonical object, which determines HAVE insertion; the latter is the case of a reflexive clause, where instead BE emerges. This difference vanishes after binding has applied, as far as further operations are concerned: from now on, the clitic bears valued ϕ-features.[23] For instance, binding feeds participle agreement, as the overt inflection on the past participle in (32) shows (cf. chapter 4 for details).

At this point, all operations triggered by v has been carried out. Before the complement of v undergoes Spell-out, unchecked features must move to the edge of the phase by means of an edge feature (cf. chapter 4 for further details). The clitic in the direct object position bears an undischarged [·T·] feature. The [·T·] feature triggers the movement of the clitic out of the phase domain because of the PIC: it has to remain accessible for T later. Since it cannot be checked yet, it must escape the phase domain, thereby pied-piping the whole DP to the edge of the phase. When the clitic moves, it bears valued ϕ-features (because of binding). These cause overt morphological inflection on v for number and gender (past participle inflection).[24]

In the next step (37), Perf is merged with v.

(37)
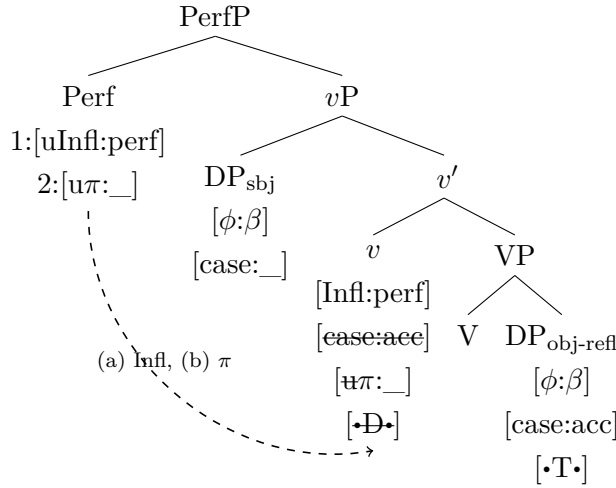
As we have already seen for the derivation in (25), Perf checks its [uInfl:perf] feature with v. The second feature [uπ:__] must start its search from v, because Nested Agree forces

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[23]Since binding is not feature sharing, but rather coindexation under c-command plus Agree, the featural information on the person probe on v is not updated after binding has applied. Agree on v has led to failed valuation and the probe remains unvalued, although now the reflexive clitic has its features valued. Cf. section §3.2.4.1 for further discussion.

[24]For the sake of simplicity, and since it is not relevant for the present analysis (but it will become important for participle agreement), I have omitted from the tree (36) the PIC-related movement of the reflexive clitic object to an outer specifier of v.

this second probe to exploit the Agree-Link of the previous probe [uInfl:perf]. v bears a π-feature, although unvalued. The presence of the matching feature on the head is enough for Agree to succeed. Therefore, Agree stops. The featural specification on Perf becomes as follows: Perf[u̶Infl:perf],[u̶π:_].

Person agreement on Perf in (37) (and on v in (35)) shows that two features match depending on the attribute, not on the value. An unvalued matching feature is a goal and stops Agree by satisfying the probe, since it is an instance of the relevant feature. Even though there is a more specific goal in the structure (i.e., the DP$_{sbj}$ with valued ϕ-features), it lies outside the search domain of the present Agree operation because of Nested Agree. In fact, the subject has already been skipped by Perf[uInfl] and cannot be reached anymore by Perf[uπ]. As Agree has lead to failed valuation on v in (35), valuation on Perf in (37) fails, too.

At Spell-out, the condition for the insertion of HAVE is not met. Even though there is a π-feature on the terminal node Perf, no value is associated with it. Thus, the elsewhere form must be inserted. Note that an unvalued feature is equal to a value for the purpose of syntax (since it is feature identity that matters), but it is equal to the lack of value for the purpose of vocabulary insertion (since it is the value itself that matters).[25]

As shown in the derivational step represented in (37), auxiliary selection in Standard Italian is the result of cyclic Agree (Legate 2003) between Perf and the DP$_{obj}$, enabled by the mediation of v. In fact, the sole dependency on argument structure cannot account for the distribution of the perfect auxiliaries in different clauses. Not only does the type of v determine the morpho-phonological realization of Perf, but also the π-feature on v, valued as a result of a prior Agree relation between v and the DP$_{obj}$. The person feature of the internal argument is the decisive factor for auxiliary selection, and this is accessible for Perf by means of the cyclic Agree configuration created by the [Infl] features on Perf and v.

Going on with the derivation in (38), T is merged with PerfP. As soon as it enters the structure, the clitic moves to T and incorporates into it, forming a complex head. Evidence for clitic placement to T as the first operation to carry out comes for example from raising across an experiencer in Romance, which is only possible if the experiencer undergoes cliticization, thereby leaving the way clear for A-movement of the experiencer (Rizzi 1986; McGinnis 1998; Heck 2016). The derivation otherwise proceeds in (38) as for transitive verbs in (27).

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[25]Even if one instead rejects the assumption that an unvalued feature is able to stop Agree, still the result here remains the same, i.e. no value is copied onto Perf. In fact, the PIC makes v the lowest possible goal for Agree on Perf: the object position is too deeply embedded. In addition, Agree on v also fails because its search domain is exhausted. Therefore, even by assuming that an unvalued feature [ϕ:_] is not able to satisfy the probe, Agree on Perf cannot succeed anyway because of the PIC.

(38)

```
                                TP
                  ┌─────────────┴─────────────┐
               DP_sbj                          T′
               [φ:β]              ┌────────────┴────────────┐
               [case:nom]         T                        PerfP
                          ┌───────┴───────┐        ┌────────┴────────┐
                       DP_obj-refl        T       Perf               vP
                       [φ:β]          1:[T:pres]  [uInfl:perf]  ┌─────┴─────┐
                       [case:acc]     2:[case:nom] [uπ:_]  <DP_obj-refl>   v′
                       [•T•]          3:[uφ:β]              [φ:β]      ┌────┴────┐
                                      4:[•D•]               [case:acc] DP_sbj    v′
                                                            [•T•]      [φ:β]  ┌──┴──┐
                                                                       [case:_]  v    VP
                                                                              [Infl:perf] ┌─┴─┐
                                                                              [case:acc]  V  <DP_obj-refl>
                                                                              [uπ:_]         [φ:_]
                                                                              [•D•]          [case:acc]
                                                                                             [•T•]
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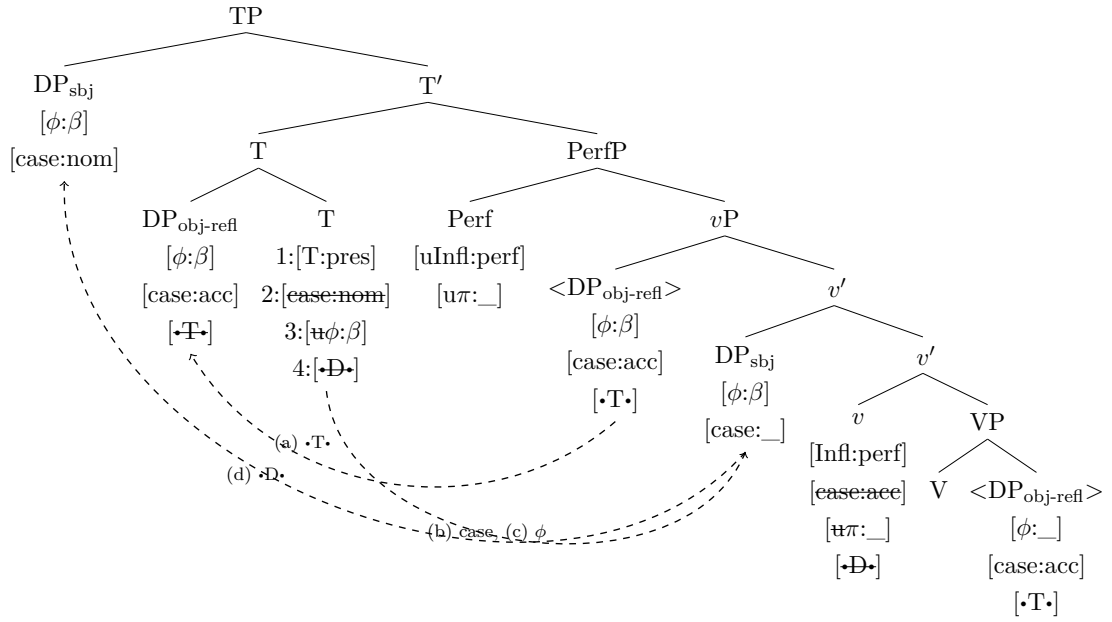
At the point of Vocabulary Insertion, Perf is substituted by BE because the π-features on Perf are unvalued. The vocabulary entries are as follows.[26]

(39)   Spell-out

    a.   /lavata/ ↔ v[Infl:perf][π:-part] + V[$\sqrt{\text{WASH}}$]

    b.   /ε/ ↔ Perf[π:_] + T[T:pres][φ:-part,+sg,+f]

    c.   /si/ ↔ DP[φ:-part,+sg,+f][case:acc]

    d.   /teresa/ ↔ DP[$\sqrt{\text{TERESA}}$][φ:-part,+sg,+f][case:nom]

To sum up, the source of BE in reflexive constructions is Agree with a π-defective item. Differently from what happens with featurally complete DPs, when the DP_obj is featurally defective Perf does not copy any π-value, since valuation on v has failed. Therefore, the condition of insertion of the allomorph HAVE is not met and the elsewhere form BE is inserted, in accordance with the Subset Principle.

3.3.3 Unergative verbs

In this dissertation, I follow the analysis of unergative verbs originally proposed by Hale and Keyser (1993), which considers these predicates as universally underlyingly transitive. According to the authors, unergative verbs merge with an object that has no phonological

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[26]As far as the VI rule for the reflexive clitic *si* is concerned, I think it should be underspecified for case in order to cover both the accusative and the dative reflexives, which both correspond to the same lexical entry. If this reflects a difference in the syntax, meaning that the reflexive clitic is not marked for case, I do not know (but cf. analysis of spurious *se* in Spanish by Halle and Marantz (1994), where *se* is underspecified for case). The additional difference between the VI entries of the reflexive *si* and of a canonical DP is probably the presence of a referential feature due to binding such as [VAR] (Hicks 2009).

realization and whose lexical features are the same as the lexical features of the verb. For example, the unergative verb 'to dance' corresponds to the transitive structure 'to dance a dance'. Unergative verbs differ from transitive verbs only because their object position is not free, but it contains instead a covert cognate object.

I adopt this hypothesis. In addition, I propose that the covert object bears morphosyntactic features, as other DPs (and even silent arguments such as *pro*) do. In particular, it bears a valued π-feature with default third person [π:3]. As shown in (40)–(41), the person feature of the object can value the probe on v, which is a standard transitive v. Therefore, for the purpose of auxiliary selection the derivation proceeds exactly as described for transitive verbs in section §3.3.1: Agree on v and, consequently, on Perf, succeeds, leading to HAVE insertion.

(40)

vP
- v
  - [Infl:__]
  - [ucase:acc]
  - [uπ:__]
  - [•D•]
- VP
  - V
  - DP$_{obj}$
    - [π:3]
    - [case:__]

(41)

vP
- DP$_{sbj}$
  - [ϕ:β]
  - [case:__]
- v'
  - v
    - 1:[Infl:__]
    - 2:[ucase:acc]
    - 3:[u̶π:3]
    - 4:[•D•]
  - VP
    - V
    - DP$_{obj}$
      - [π:3]
      - [case:acc]

(a) case, (b) π
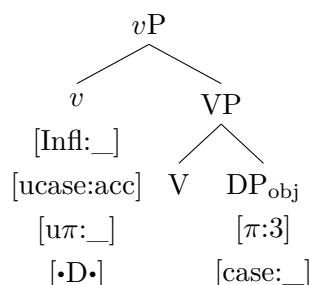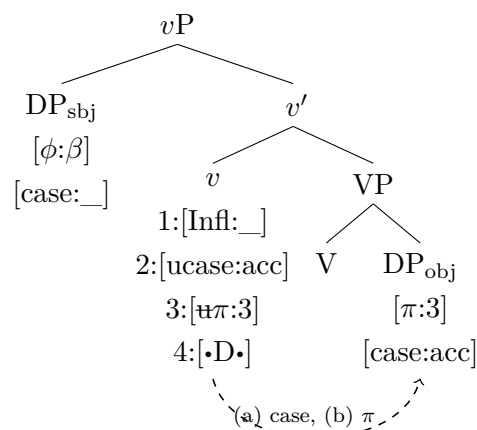
3.3.4 Unaccusative verbs

The other context where BE shows up as the perfect auxiliary is the case of unaccusative predicates. As I said in section §3.2.1.2, I assume that unaccusative roots are selected by a defective v, which neither introduces the external argument, nor assigns the external Theta-role, nor assigns accusative case. Moreover, I consider defective v to be a phase, as other vs are (Legate 2003; Richards 2005; Müller 2010, 2011; Abels 2012; Heck 2016). The main function of defective v is to determine the phase boundary. Evidence for this assumption comes from participle agreement, which shows up with unaccusative verbs, as shown in (42). In chapter 4, I will claim that participle agreement is the morphological reflex of movement out of a phase domain.

(42) Teresa è   arrivat-a.
      Teresa be.PRS.3SG arrive.PRTC-SG.F
      'Teresa has arrived.'

As will be clear from the derivation in (43)–(46), Agree on Perf fails because defective v does not bear any π-feature and because there is no other possible goal in the structure.

Given the absence of π-features on Perf, the default BE is the selected allomorph.

Turning now to the syntactic structure in tree (43), V selects its internal argument and is selected by defective v. This functional head does not interact with the DP: it is neither a case assigner, nor a π-probe. The DP has not received case yet. This fact causes its movement to the edge of the phase for reasons that I will clarify in chapter 4 (namely, edge feature insertion because of an unchecked feature).

(43)
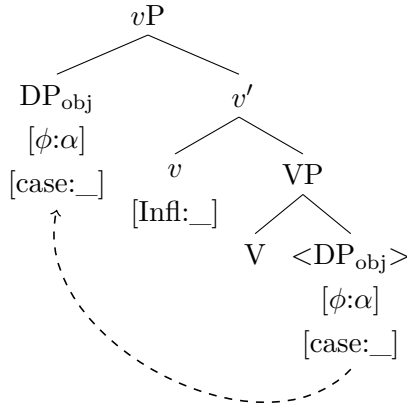
When the head Perf is merged in the structure, it firstly checks its [uInfl:perf] on v. Agree between Perf and v is successful: the uninterpretability of [Infl] on Perf goes away and v copies the value *perf* onto the attribute [Infl]. Subsequently, the second feature on Perf must be discharged. Perf[uπ:__] starts looking at v as the first potential goal, given Nested Agree, repeated here again for convenience.

(44)   *Nested Agree*
       Let F_1 and F_2 be two ordered probes on the same head H. The search space of F_1 is the c-command domain of H.

   (i)   *Maximize*: if the Agree operation A_1 for the feature F_1 has targeted the goal G, then the subsequent Agree operation A_2 for the feature F_2 must also target G.

   (ii) *No-backtracking*: If G is not a matching goal for F_2, the search space of F_2 is the c-command domain of G (not of H).

The first step *Maximize* causes [uπ:__] on Perf to probe v. However, in this case v does not bear the relevant feature. Hence, Perf cannot use the same Agree-Link for the two separate probes it bears, but instead a new search must be started. Now Perf initiates its search downwards, as the second step of Nested Agree *No-backtracking* requires. The new Agree domain is not the c-command domain of Perf, since the search has already started from a position that is more embedded than Perf. The new domain of Agree is the

sister of v, instead of the sister of Perf. In this portion of structure, there is no matching feature. This is due to the phasal status of v. In fact, the complement of v is opaque for any further syntactic operation because of the PIC, since it has been already sent to the interface for Spell-out. In other words, the phase head v constitutes the lower boundary for Agree. In addition, the DP_{obj} is now located in Spec,v, which is not an accessible position for Perf because of the *No-backtracking* condition of Nested Agree.

It is noteworthy that this result is obtained also without resorting to the PIC as a constraint on Agree, differently from what the present dissertation does. In fact, if Agree is not considered to be subject to the PIC, as it has sometimes been proposed (Stjepanović and Takahashi 2001; Bošković 2007), there is no possible goal below v, since the object has already raised to Spec,v (that is, it is located outside the domain of Perf[uπ:_]). As Nested Agree ensures, it is not possible for Perf to reach the syntactic position between itself and v: once a portion of the tree has been skipped for an operation triggered by a head, this head cannot reach it anymore even for other operations.

Consequently, Agree fails and Perf cannot copy any π-feature. However, this does not cause any derivational crash (Béjar 2003; Preminger 2014). If Agree has failed because there is no matching goal in the c-command domain, then the feature remains unvalued and the elsewhere form is inserted at Spell-out.[27] Once the search stops, either because a matching feature has been found, or because the whole domain has been scanned, the uninterpretability of the probe is erased, independently of the result of the operation. Agree between Perf and v for [Infl] and failed Agree for [π] on Perf is represented in tree (45).

(45)

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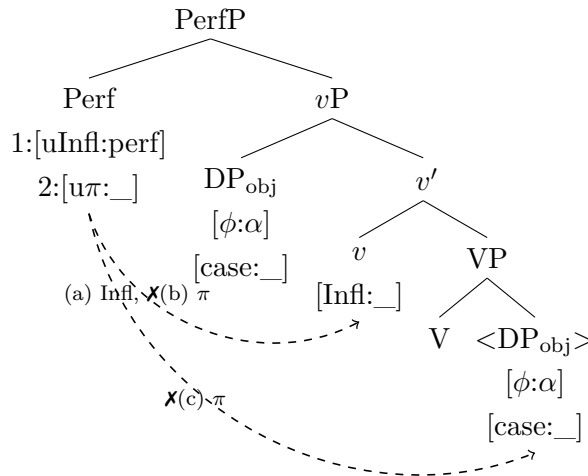
[27]Under Béjar's (2003) and Preminger's (2014) proposal, a default value is inserted on a probe when Agree fails. I actually depart from this idea: the probe [π:_] on Perf remains unvalued if Agree fails. Instead, I adopt the idea that the derivation does not crash if Agree fails, and the probe can remain unvalued. Under this assumption, the emergence of the elsewhere form is due to the lack of value, rather than to default valuation.

In the following step, T is merged in the structure. T assigns nominative to the DP$_{obj}$, probes it for π-features and triggers its movement to Spec,T. The result of Agree on T will be spelled out as inflectional agreement.

(46)
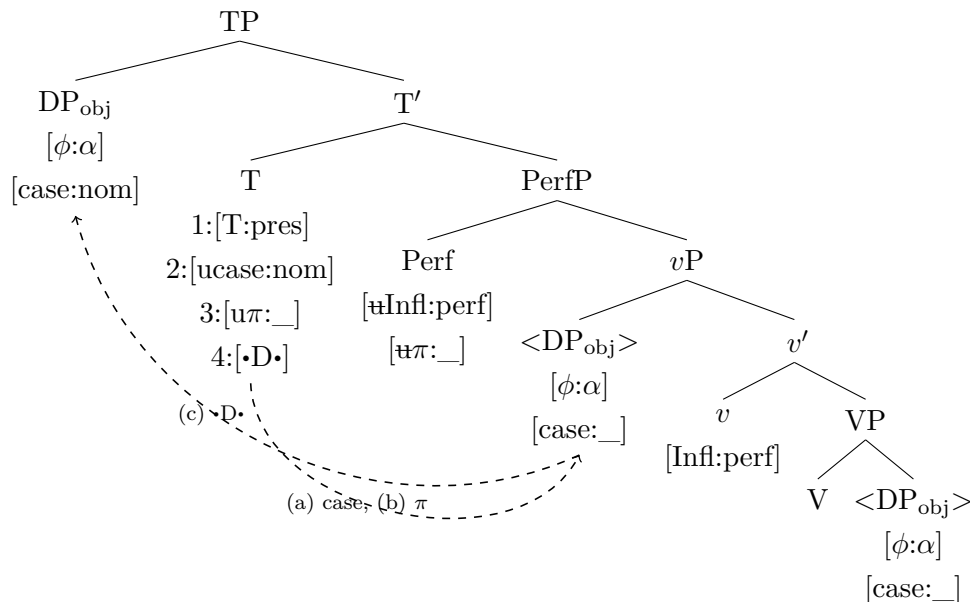
To sum up, for unaccusative verbal roots the unmarked BE is inserted in the terminal node Perf because Agree has failed: there is no possible goal in the structure that can satisfy the π-probe on Perf. At Spell-out, the morpho-syntactic features are substituted as follows.

(47) Spell-out

   a. /arrivata/ ↔ v[Infl:perf][π:-part] + V[$\sqrt{\text{ARRIVE}}$]
   b. /ε/ ↔ Perf[π:__] + T[T:pres][φ:-part,+sg,+f]
   c. /teresa/ ↔ DP[$\sqrt{\text{TERESA}}$][φ:-part,+sg,+f][case:nom]

In general, I conclude that the auxiliary BE emerges from the inability to copy a person value, which can be due either to the absence of an accessible goal (as is the case for unaccusative verbs) or to the presence of a defective goal (as for transitive verbs with a reflexive object).

3.3.5 Weather verbs

Verbs with null valency (0-place predicates, Adger 2003: 61-62), such as weather verbs, can be combined with both auxiliaries, as example (48) shows.

(48) a. Ha   piovuto   molto.
          have.PRS.3SG rain.PRTC a lot

      b. È   piovuto   molto.
          be.PRS.3SG rain.PRTC a lot
          'It has rained a lot'

I argue that this alternation is of the same kind of the variation found for other intransitive verbs, as the cline of intransitivity describes (Sorace 2000) (cf. section §3.2.2). These verbs can be categorized with two different vs: a transitive v (48-a), or an unaccusative v (48-b). In the former structure (48-a), the internal argument is a covert object with valued π-feature [π:3], and the external argument is a *pro* (cf. notion of quasi-argument in (Chomsky 1981)). The derivation is exactly as for unergative verbs (section §3.3.3) Agree between the covert object and v, and, consequently, between v and Perf (with successful valuation), leads to HAVE insertion. In the latter case (48-b), the sole argument is a *pro* (quasi-argument) that raises to the subject position. The derivation is as for unaccusative predicates in section §3.3.4. Perf does not find any π-feature, neither on defective v nor on *pro*, which is not accessible because of Nested Agree. Therefore, the Perf head will be spelled out by the elsewhere form BE.

3.3.6 Passive predicates

In the case of passive clauses, I adopt a representation where a passive Voice$_{pass}$ selects a defective v.[28] As all other inflectional heads, the head Voice$_{pass}$ bears an [Infl:__] feature, which can either acquire a value by an upper projection, or remain unvalued. Moreover, it contains a probe [uInfl:pass] that checks the [Infl] feature on v. Consequently, v[Infl:pass] is spelled out as a passive participle. Similarly, Collins (2005b) has proposed that the participle (PartP, here vP[Infl:pass]) must be licensed by the presence of VoiceP; Bruening (2013) has claimed that agreement between Pass (here Voice$_{pass}$), Voice (here v) and V is spelled out as a past participle. In addition, a by-phrase can be introduced in Spec,Voice, if it is present in the numeration. In (50), I illustrate the syntactic representation of a passive sentence in the present tense such as (49).

(49) Teresa è   promoss-a.
      Teresa be.PRS.3SG promote.PRTC-SG.F
      'Teresa is promoted.'

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[28]The defectiveness of this head is not inherent, but it is rather derived. In fact, in Standard Italian it is impossible to passivize unaccusative predicates, as in many other languages. I do not address the question how a full argument structure v is reduced to the kind of v selected by passive Voice. It could be due to VoiceP (Collins 2005b), to a morpho-syntactic operation that prevents the realization of the external argument as an argument (Bruening 2013), to a lexical operation prior to the syntactic computation (Chomsky 1981), or to a structure removal feature (Müller 2016). Note that for the purpose of this analysis is not relevant whether the person probe is preserved on v or if it goes away together with ability of introducing the external argument and assigning accusative case. The important point is the presence of a passive Voice head, which is assumed by all the most recent analyses of passive clauses (Collins 2005b; Bruening 2013; Legate 2014; Alexiadou, Anagnostopoulou, and Schäfer 2015).

(50)

$$
\begin{array}{c}
\text{TP} \\
\diagup \quad \diagdown \\
\text{DP}_{\text{obj}} \qquad \text{T}' \\
[\phi{:}\alpha] \\
[\text{case:nom}]
\end{array}
$$
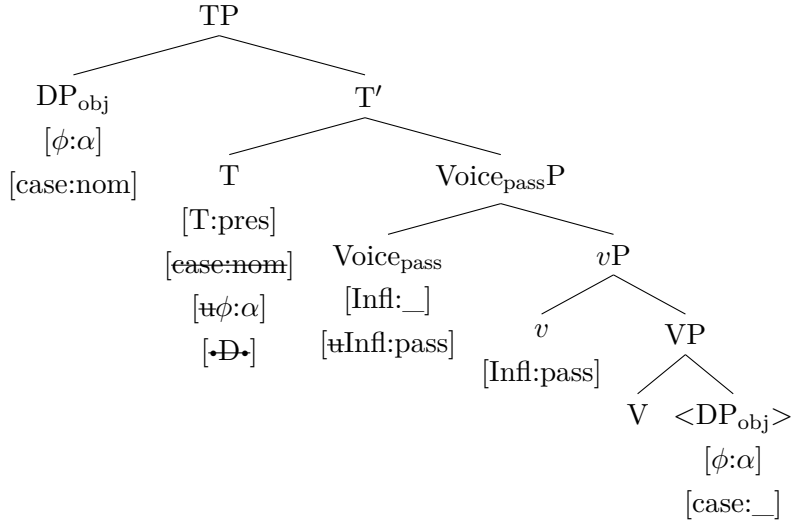
In (50), Voice$_{\text{pass}}$ probes v for [Infl] and it assigns it the valued *pass*. The internal argument moves first to Spec,v, then to Spec,Voice$_{\text{pass}}$, because of edge feature insertion (here omitted in the tree), since its case feature is not valued and it must remain PIC-accessible to T. When T enters the derivation, it assigns nominative case to the object, it agrees with it for ϕ-features and it raises it to the subject position.

The head Voice$_{\text{pass}}$ is realized by a passive auxiliary that is always spelled out as BE. This is possible either if there is a specific VI rule that spells out only the terminal node Voice$_{\text{pass}}$ (51-a), or if BE is inserted as the elsewhere form when there is no person feature on a head of the type v (51-b).

(51)   a. $/\sqrt{\text{BE}}/ \leftrightarrow$ Voice$_{\text{pass}}$
         b. $/\sqrt{\text{BE}}/ \leftrightarrow v$ elsewhere

The former hypothesis is suggested by the passive auxiliary in German, which exhibits a dedicated auxiliary just for passives, *werden*, and cf. also Italian motion verb *venire* 'to come' that is used as a passive auxiliary. The latter idea works under the assumption that v, Voice and Perf are heads of the same type, as the feature [Infl] seems to indicate.[29]

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[29]If BE is the elsewhere form not only for the head Perf, but also for v in general, we might expect it to realize transitive and defective v in simple clauses, which is not the case. A possible solution is to say that BE spells out specific heads, assuming a difference of "flavor" between v, Voice and Perf, and modifying the VI in (51-b) as in (i).

(i)   a. $/\sqrt{\text{BE}}/ \leftrightarrow$ Voice elsewhere
        b. $/\sqrt{\text{BE}}/ \leftrightarrow$ Perf elsewhere

Alternatively, the insertion of BE for v can be blocked by the more specific VI rule in (ii) (F. Heck, p.c.).

(ii) $/\emptyset/ \leftrightarrow v$ / V

This rule says that v is spelled out as zero when it is adjacent to a V head. The rule refers to the surface structure, not to syntactic selection. However, it is standardly assumed that the verbal root undergoes

If we now look at the perfect auxiliary, we see that this is always realized as BE, as (52) shows. This is due to the fact that Voice$_{pass}$ contains an [Infl] feature, but no π-feature.

(52) Teresa è   stat-a   promoss-a.
      Teresa be.PRS.3SG be.PRTC-SG.F promote.PRTC-SG.F
      'Teresa has been promoted.'

In a perfect passive sentence such as (52), the perfect auxiliary BE (*è*) spells out the complex head Perf + T, the passive auxiliary BE (*stat-a*) in the form of a past participle spells out Voice$_{pass}$ and the passive participle of the lexical verb (*promoss-a*) realizes the complex head v + V. The presence of participle agreement on Voice$_{pass}$ and on v shows that both heads are phases, as will become clear in the chapter on participle agreement 4. This means that the object (since its case remains unchecked until T is merged in the structure) will have to move to Spec,Voice$_{pass}$ via the edge of v. It also means that the head Voice$_{pass}$ is accessible for Agree on Perf, but the head v is not.

I now show the derivation (53)–(54) for (52). First of all, in (53) we build the passive VoiceP as we did in (50).

(53)
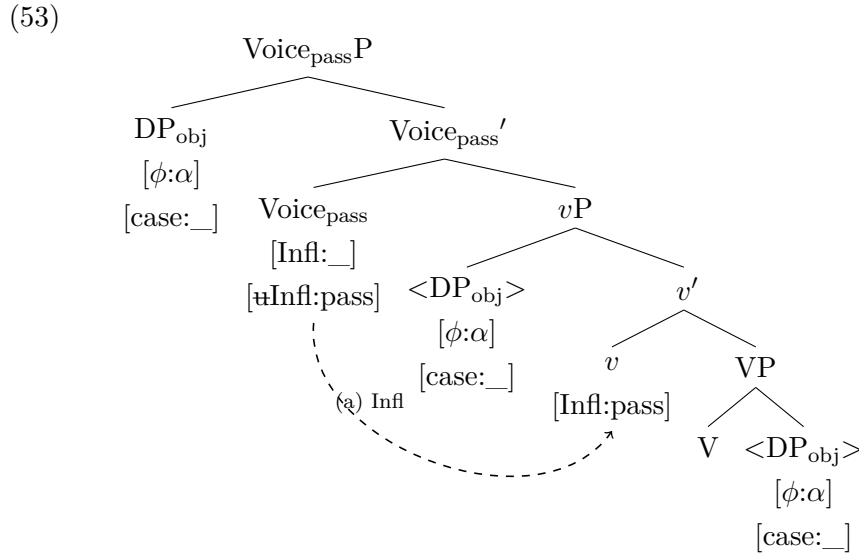
The VP is selected by a defective v, which is in turn selected by Voice$_{pass}$. Neither v, nor Voice$_{pass}$ contains a π-probe.[30] Voice$_{pass}$ agrees with v for [Infl] and this is the only

___

head-movement to the lowest v. If (ii) is adopted next to (51-b), v and v* are realized by the zero VI (ii) that blocks (51-b). However, passive Voice is spelled out by the elsewhere form (51-b) because the condition of insertion of the more specific rule (ii) is not met: Voice$_{pass}$ is a type of v, but it is not directly adjacent to a V head (because it selects for a vP). Note that rule in (ii) might be needed even together with the rules (i), since they are elsewhere rules that can be applied when there is no specific rule for v, assuming that Perf, Voice and v are different flavors of v.

[30]I assume that the modification of v introduced by Voice$_{pass}$ causes the elimination of the person probe from transitive v, as a consequence of the suppression of the ability of introducing an external argument and assigning accusative case. However, for the purpose of the present analysis there could also be a π-feature on v. This would not change the result on Perf, since v is not visible to Perf because of the PIC (Voice being a phase, as shown by participle agreement in (52)). This works under the assumption

operation between the two heads.

In the next step (54), Perf is merged in the structure. It checks its Infl-feature with Voice$_{pass}$. As a next step, Perf probes for person. Voice does not contain any $[\pi]$. Therefore, given Nested Agree, Perf starts its search downwards from the sister of Voice. However, since Voice is a phase head, its complement is opaque for Agree, as the PIC prescribes. This means that Perf cannot access anything below the head Voice and Agree stops without having caused valuation. Note, again, that even if one does not assume the PIC as a constraint on Agree, the result is the same. In fact, v does not contain any person feature either. Moreover, the object has already moved out of its base position. Hence, Agree does not succeed in finding a goal. The result on Perf is Perf[ʉπ:__]. Therefore, BE will be inserted at Spell-out.

(54)
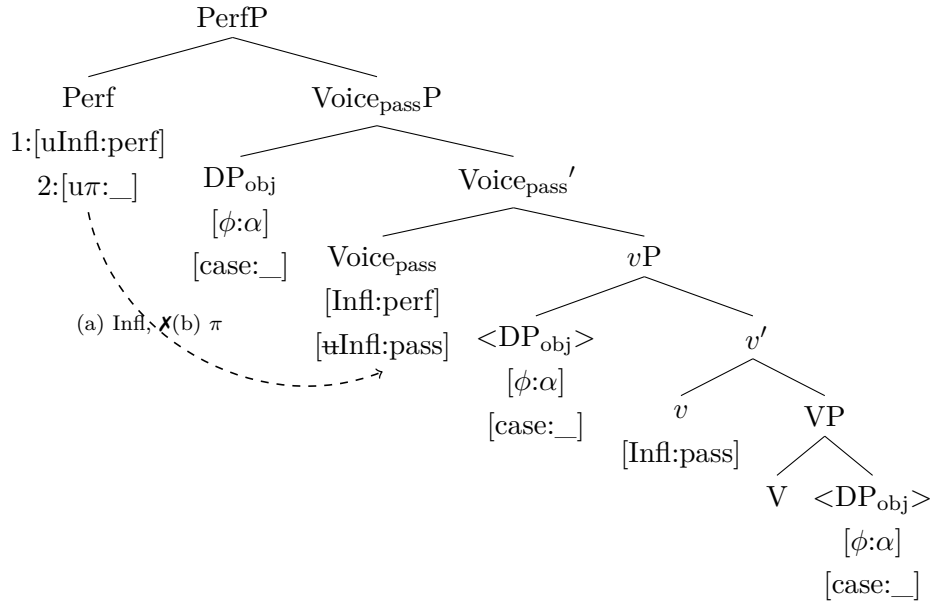
The derivation proceeds with Merge of T, which assigns nominative case to the object, agrees for ϕ-features with it and raises it to its spec. This step is identical to the derivation for unaccusative verbs in (46).

At Spell-out, the vocabulary entries for sentence (52) are as follows.

(55)   Spell-out

   a.   /promos:a/ $\leftrightarrow$ v[Infl:pass] + V[$\sqrt{\text{PROMOTE}}$]

   b.   /stata/ $\leftrightarrow$ Voice$_{pass}$[Infl:perf]

   c.   /ε/ $\leftrightarrow$ Perf[π:__] + T[T:pres][ϕ:-part,+sg,+f]

   d.   /teresa/ $\leftrightarrow$ DP[$\sqrt{\text{TERESA}}$][ϕ:-part,+sg,+f][case:nom]

---

that v does not move to Voice, as it seems the case looking at possible intervening adverbs or constituent negation and so on (for example: *Teresa è stata subito promossa* 'Teresa has been immediately promoted', *Teresa è stata non promossa, ma bocciata* 'Teresa has been not promoted, but rejected').

To sum up, in the case of passive clauses the perfect auxiliary is always BE because the projection responsible for the passive interpretation Voice$_{\text{pass}}$ does not contain a valued person feature.

3.3.7 Transitive verbs with reflexive indirect object

In section §3.3.2, I have offered the derivation for transitive verbs with a reflexive direct object. The reflexive clitic *si* can be merged not only as the direct object, but also as the indirect object, with benefactive meaning. An example of a clause with a reflexive, benefactive dative argument is repeated in (56).

(56)   Teresa si=è   mangiat-a   il panino.
          Teresa REFL.DAT.3SG.F=be.PRS.3SG eat.PRTC-SG.F the sandwich.SG.M
          'Teresa ate the sandwich.'

The perfect auxiliary in (56) is BE. Let me highlight that, even though some authors have proposed an unaccusative analysis for reflexive clauses as (32) in section §3.3.2, especially relying on the presence of the perfect auxiliary BE as a sign of unaccusativity, it is much more difficult to accept an unaccusative approach for clauses with reflexive indirect object, which clearly contain an internal argument and an external argument that are distinct and bear, respectively, patient and agent thematic roles. Hence, the derivation of BE in clauses such as (56) is quite problematic.

The starting assumption is, again, that the reflexive dative clitic *si* bears unvalued ϕ-features and needs to be bound in the derivation, exactly as the reflexive clitic object does.[31] Furthermore, I assume that the reflexive clitic in the indirect object position is introduced by an applicative head, which in addition brings in the benefactive semantics and assigns accusative case to the DP object (Marantz 1993; Ura 1995, 2000; McGinnis 1998; Pylkkänen 2008; Anagnostopoulou 2004). The applicative phrase is merged with a special type of *v*, similar to the transitive one because it is a full argument structure *v* (Anagnostopoulou 2001; D'Alessandro 2017a). This *v* assigns dative to the argument introduced by the Appl head, instead of accusative case. In addition, it introduces a further argument and assigns the external Theta-role to it. This head can be called *quirky v* and it is specified as follows.

(57) v_{quirky}: [Infl:__], [ucase:dat], [uπ:__], [•D•]

The formulation *quirky v* refers to quirky subject constructions in Icelandic (and in Italian), where the thematic subject bears dative case instead of nominative. These structures are created by a dative assigning head, similar to this one in (57) (Zaenen, Maling, and Thráinsson 1985; Taraldsen 1995; Sigurðsson 1996; Boeckx 2000; Alexiadou 2003).

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[31]Again, I use the label *si* for a generic reflexive clitic, which is then realized by different morphemes depending on the ϕ-features it acquires via binding.

I propose the following derivation for sentence (56). First of all, V is merged with the DP$_{obj}$ and the VP is merged with the Appl head. Appl assigns accusative case to the object and introduces the benefactive DP, which in this structure is also a reflexive clitic, co-referential with the external argument.

(58)
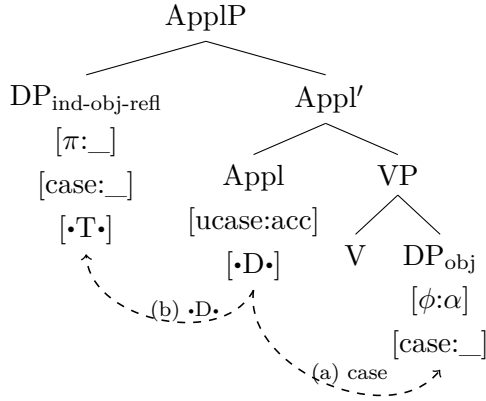
After this step, quirky v is merged in the structure, as the tree (59) shows.

(59)
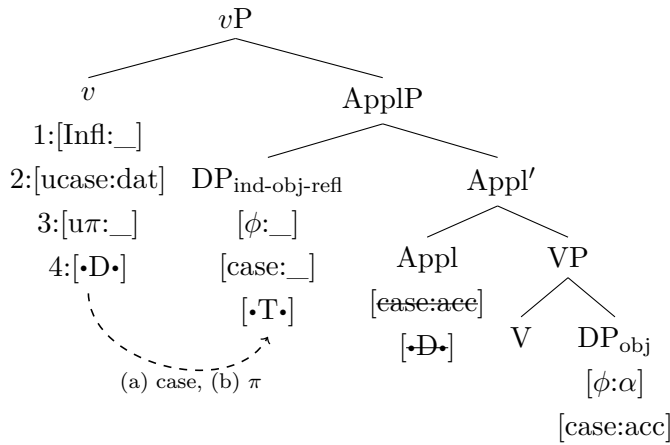
Firstly, v assigns dative case to the reflexive clitic *si*. Then it probes for person. In its c-command domain, the closest matching goal is the clitic *si*, which bears the relevant feature [π]. Agree targets this DP and the probe is satisfied; however, valuation does not succeed. In fact, the clitic is featurally defective, meaning that its π-feature is unvalued when it enters the derivation. Via binding, the clitic will acquire a value for its person feature, but at this point of the derivation *si* has not been bound yet.

As we have already seen in section §3.3.2, unvalued features lead to defective intervention (i.e., Agree stops). For almost all the derivations proposed in this dissertation, this assumption of unvalued features as matching features is superfluous, because the Phase Impenetrability Condition restricts Agree in the relevant way (cf. also footnote 25).

However, the PIC cannot help in the present derivation: if the unvalued π-feature on the reflexive indirect object cannot stop Agree, then the person probe on v goes on searching, and finds the valued π-feature on the direct object. This ultimately causes HAVE insertion for the terminal node Perf, as in the case of transitive clauses (cf. section §3.3.1). Hence, if this assumption about unvalued features is rejected, one should admit, instead, that Applicative heads in Italian are phases. In order to avoid this alternative assumption, and because in the case of restructuring with TP complement unvalued π-features may stop Agree (cf. section §5.7.4 in chapter 5), I assume that unvalued ϕ-features count as valued ones and are possible target for Agree.[32]

In the next step (60), the external argument is introduced by v.[33]

(60)
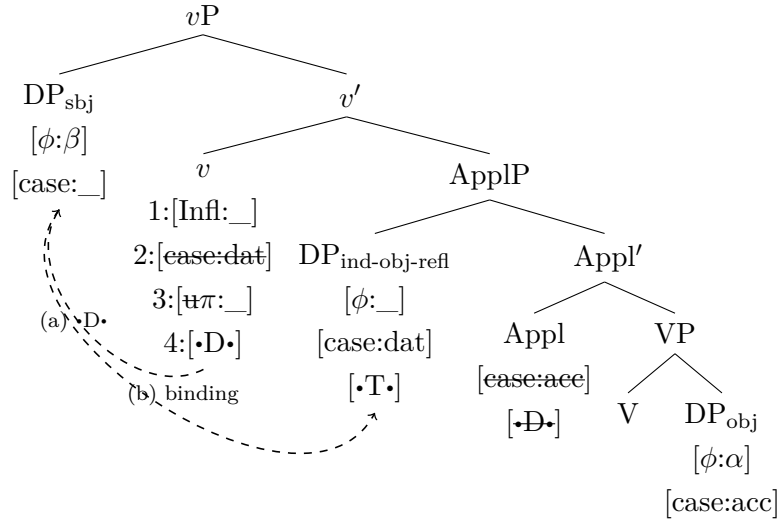
This DP binds the clitic *si*: from now on, *si* bears valued ϕ. As is the case for reflexive

---

[32]The applicative head might be subject to some cross-linguistic variation. In chapter 6, I show that in Logudorese Sardinian the same type of clause requires the auxiliary HAVE, whereas if the reflexive clitic is the direct object then the auxiliary is BE, as in Italian. I present here example (31) of chapter 6.

(i)   a.   Maria z=ɛs   samuna:ð-a.
         Maria REFL.ACC.3SG.F=be.PRS.3SG wash.PRTC-SG.F
         'Maria has washed herself.'   (direct transitive reflexive)
   b.   Maria z=a   ssamuna:ðu zal ma:nɔs.
         Maria REFL.DAT.3SG.F=have.PRS.3SG wash.PRTC   the hands
         'Maria has washed her hands.'   (indirect transitive reflexive)

The difference between (56) and (i-b) can be derived in one of the following ways. (i) Sardinian has a high Applicative that selects v, Italian has a lower one that is selected by v. (ii) In general, unvalued features do not lead to defective intervention, and in Sardinian the applicative head is not a phase (while it is in Italian). (iii) In Sardinian, the applicative phrase assigns dative to its specifier (rather than accusative to its complement) and combines with a transitive v (rather than with a quirky v). I refer the reader to section §6.6.1 for discussion.

[33]In tree (60), I have omitted the PIC-related movement of the benefactive clitic to an outer specifier of v. Cf. section §3.3.2 for a brief discussion of the parallel case of reflexive clitic objects.

clitics in the object position, binding by the external argument takes place after Agree on v has applied. The introduction of the external argument (and, consequently, binding) takes place too late for leading to successful valuation on v.

The failure of copying a value for the π-feature on v leads to the same result on Perf. In (61), Perf is merged in the structure. It targets v for [uInfl:perf] and for [uπ], given Nested Agree. v bears a [π] feature, although unvalued. This is enough to stop the search for [π], resulting in no valuation. At Spell-out, BE will be inserted because Perf does not contained any valued π-feature.

(61)
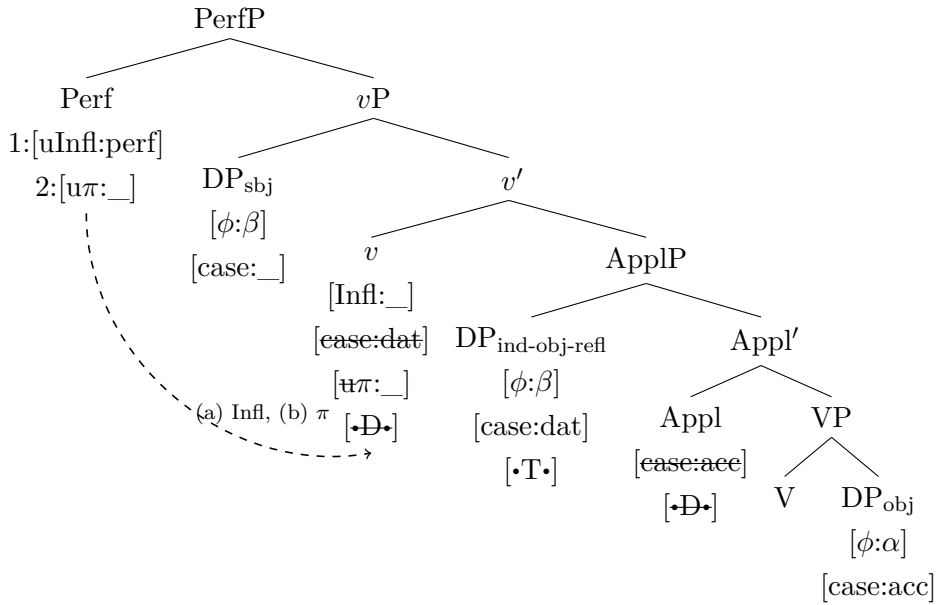
In the next step, T selects for the PerfP. This is shown in tree (62). When T is merged, the indirect object clitic is located in the outer Spec,v because it has moved out of the phase domain of v (in tree (61), I left the clitic in its base position for the sake of simplicity). Cliticization happens as soon as T is merged in the structure (Rizzi 1986; McGinnis 1998; Heck 2016), resulting in a complex head that contains T and the clitic. After cliticization, T assigns nominative case to the subject and agrees with it in ϕ-features, giving rise to the expected subject agreement. As I have already clarified for the previous derivations, T always agrees with the subject. This is due to the ranking of features on T and to Nested Agree. The earliness of cliticization, which removes the clitic from the intervening position between T and the DP$_{sbj}$, is not relevant for subject agreement. In fact, even though the clitic moves out of the way before T probes for ϕ-features, there are other cases of apparent intervention, where T agrees nonetheless with the subject, such as VOS structures (for discussion, cf. section §2.6.3 in chapter 2). Under the present analysis, T agrees with the subject if it assigns nominative case as the first operation. Assuming lack of defective intervention for case assignment, T[ucase:nom] targets the DP$_{sbj}$. After this operation, Nested Agree forces T to agree for ϕ-features with the same DP. Thus, it is not

the earliness of cliticization that favors subject agreement on T (although in the present case it would be enough to clarify the issue), but rather Nested Agree. Finally, the DP$_{sbj}$ moves to Spec,T because of the EPP-feature [•D•] on T.

(62)

```
                              TP
                  _____/ _____
              DP_sbj                        T′
              [φ:β]              _____/ _____
              [case:nom]        T                         PerfP
                          _____/ \_____          _____/ _____
                     DP_ind-obj-refl    T      Perf                 vP
                     [φ:β]              1:[T:pres]  [u̶Infl:perf]  __/ \__
                     [case:acc]         2:[c̶a̶s̶e̶:̶n̶o̶m̶]  [u̶π:__]  DP_sbj      v′
                     [•T̶•]              3:[u̶φ:β]              [φ:β]    __/ \__
                                        4:[•D̶•]              [case:__]  v      ApplP
        (d) •D•                                                    [Infl:perf]  __/ \__
                                                                   [c̶a̶s̶e̶:̶d̶a̶t̶]  <DP_ind-obj-refl>  Appl′
                                                                   [u̶π:__]      [φ:β]          __/ \__
                                 (b) case, (c) π                   [•D̶•]        [case:dat]   Appl      VP
                                                                                [•T•]      [c̶a̶s̶e̶:̶a̶c̶c̶]  _/ \_
                                                                                                    V    DP_obj
                                                                                                         [φ:α]
                         (a) •T•                                                                          [case:acc]
```
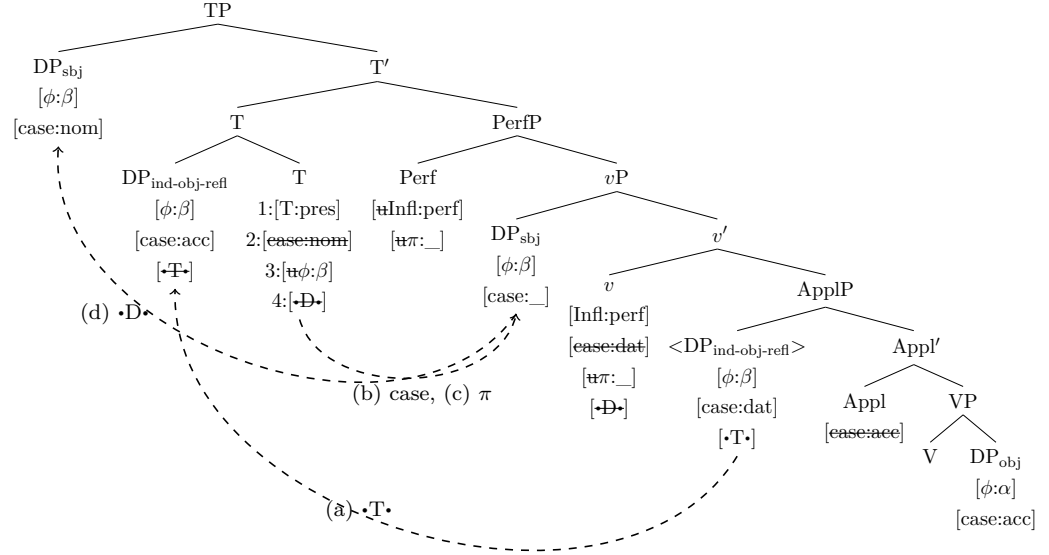
At Spell-out, the terminal nodes are substituted as follows.

(63)   Spell-out
  a.   /un/ /panino/ ↔ DP[$\sqrt{\text{SANDWICH}}$][φ:-part,+sg,+m][case:acc]
  b.   /mandʒata/ ↔ v[Infl:perf][π:-part] + V[$\sqrt{\text{EAT}}$]
  c.   /ɛ/ ↔ Perf[π:__] + T[T:pres][φ:-part,+sg,+f]
  d.   /si/ ↔ DP[φ:-part,+sg,+f][case:dat]
  e.   /Teresa / ↔ DP[$\sqrt{\text{TERESA}}$][φ:-part,+sg,+f][case:nom]

3.3.8 Quirky verbs

The quirky v that is used in the presence of an applicative head is also responsible for the argument structure of some psychological verbs, for example the verb *piacere* 'to like'. These verbs select for an internal argument, which bears the Theta-role of theme, is assigned nominative case and agrees with the verb, and for an experiencer argument that bears dative case. Sentences with a dative experiencer and a thematic nominative object are called *quirky subject constructions* (Taraldsen 1995; Sigurðsson 1996). An example is shown in (64-a). The perfect auxiliary is always BE, as (64-b) shows.

(64) a. A Teresa   piacciono i   panini.
          to Teresa.DAT.3SG.F like.PRS.3PL the sandwiches
          'Teresa likes the sandwiches.'

      b. A Teresa   sono   piaciut-i   i   panini.
          to Teresa.DAT.3SG.F be.PRS.3PL like.PRTC-PL.M the sandwiches
          'Teresa liked the sandwiches.'

The syntactic structure of quirky constructions involves a quirky v. As proposed by
Belletti and Rizzi (1988: 293), I assume that the experiencer is merged as the indirect
object within a complex VP, resulting in a double object construction with a non-thematic
argument position, shown in (65).

(65)   [$_{vP}$ v_{quirky} [$_{VP}$ IO V DO]]

The experiencer IO in Spec,V gets its Theta-role and dative case from quirky v. Differently
from the quirky v that merges with an ApplP (cf. previous derivation in section §3.3.7),
this quirky v triggers internal Merge with its [•D•] feature, rather than external Merge.
This means that in the configuration in (65) Theta-role assignment does not take place
locally under c-selection (as is the case for V and the internal argument, and for transitive
v and the external argument), but this is rather a case of raising to a Θ-position. The
experiencer acquires its Θ-role via internal Merge, and not via external Merge.

Moreover, this quirky v is not a probe for person. As I have discussed in section
§3.2.1.2, the presence of a person probe on a functional head seems to be related to the
ability of introducing a new argument. This v actually *raises* the indirect object, instead
of introducing a new argument, although it assigns it a Theta-role. Hence, it can be
considered the defective version of the quirky v, already introduced for the derivation of
benefactive structures in section §3.3.7. Quirky v comes in two flavors: full quirky v^*,
which takes as an argument the ApplP, introduces a new DP and contains a person probe,
and defective quirky v that selects for a VP, raises the DP and does not bear a person
probe.[34] The features of the two heads are illustrated in (66).

---

[34]The reader may wonder if one can also get rid of the person probe on non-defective quirky v^*. I think
this leads to wrong predictions. In fact, if in a sentence such as (56) (repeated here again in (i-a)) the
benefactive argument is not a reflexive clitic, then the auxiliary is again HAVE (i-b).

(i)   a. Teresa si=è   mangiat-a   il panino.
          Teresa REFL.DAT.3SG.F=be.PRS.3SG eat.PRTC-SG.F the sandwich
          'Teresa ate her sandwich.'
      b. Teresa gli=ha   mangiato   il panino perchè lui   invece
          Teresa DAT.3SG.M=have.PRS.3SG eat.PRTC-SG.F the sandwich because NOM.3SG.M instead
          voleva   mangiare la pizza.
          want.PST.3SG eat.INF   the pizza
          'Teresa ate his sandwich because he wanted to eat Pizza instead.'

Quirky v^* behaves as a transitive v^* as far as auxiliary selection is concerned, meaning that it should
contain a probe for person.

(66) a. quirky v*: [Infl:__], [ucase:dat], [uπ:__], [•D•] + Agent Theta Role via external Merge

  b. quirky v: [Infl:__], [ucase:dat], EPP + Experiencer Theta Role via internal Merge

The sentence in (66-b) contains an instance of the defective v. The derivation for (66-b) is as follows. The VP contains one argument in the complement position, and one in the specifier. Quirky v assigns dative case to the higher argument, which is the experiencer in Spec,V. It also raises it to Spec,v and assigns it the experiencer-Theta-role. Instead, the DP$_{obj}$ has remained with unvalued case. When T is merged, it assigns nominative to the object and agrees with it. This is shown in (67).

(67)

```
                    TP
         ┌──────────┴──────────┐
      DP_exp                   T'
      [φ:β]          ┌─────────┴─────────┐
      [case:dat]     T                   vP
                  [T:pres]        ┌───────┴───────┐
                  [c̶a̶s̶e̶:̶n̶o̶m̶]    <DP_exp>          v'
                  [u̶φ:α]         [φ:β]      ┌───────┴───────┐
                  [•D̶•]          [case:dat]  v             VP
                                        [Infl:__]    ┌──────┴──────┐
                                        [c̶a̶s̶e̶:̶d̶a̶t̶] <DP_exp>      V'
                                        [•D̶•]       [φ:β]      ┌───┴───┐
                                                    [case:dat]  V    DP_obj
                                                                      [φ:α]
                                                                      [case:nom]
```
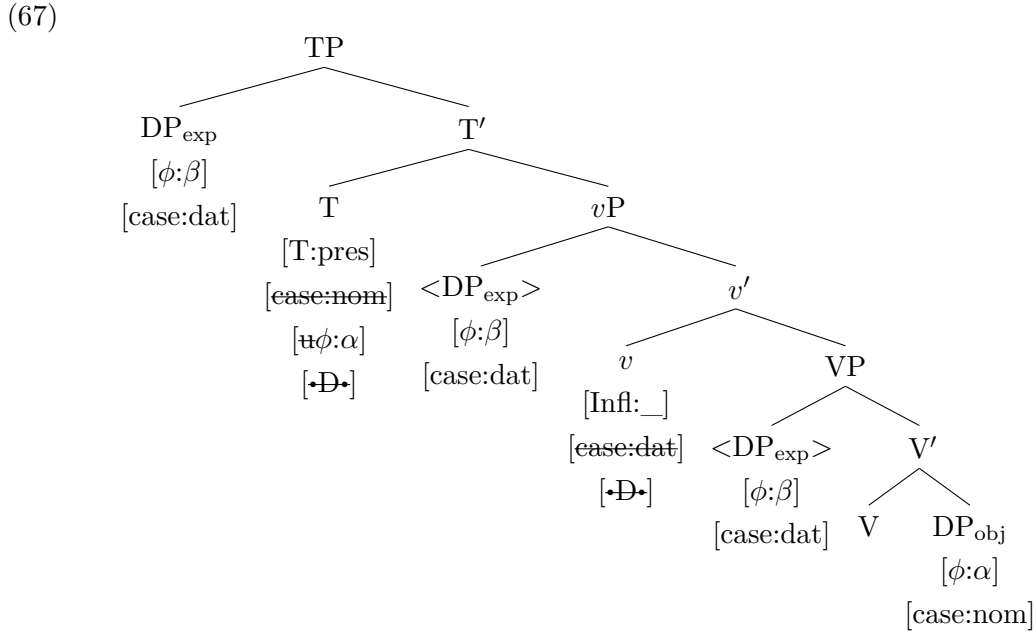
In this tree, the object should not be PIC-accessible for T. However, in the actual derivation the object moves to the edge of the phase v. I have omitted from the graphic representation this movement for the sake of simplicity. Given its unvalued case feature, the DP$_{obj}$ escapes the domain of the phase and moves to the edge because of the PIC. From this position, it is not visible for Perf because of Nested Agree (since Perf firstly agrees with v for [Infl]), but it is actually accessible for T. The fact that the DP$_{obj}$ can surface in the object position as in (64-a) is not in contradiction with this claim. In fact, movement can take place covertly (cf. section §4.5 in chapter 4 for discussion). The DP$_{obj}$ can also surface in the subject position, as (68) shows.

(68) I   panini   piacciono   a Teresa.
      the sandwiches like.PRS.3PL to Teresa.DAT.3SG.F
      'Teresa likes the sandwiches.'

In tree (69), I show what happens on the Perf head in a perfect sentence such as (64-b).

(69)

PerfP

Perf
1:[Infl:perf]
2:[π:__]

vP

DP$_{\text{exp}}$
[ϕ:β]
[case:dat]

v'

v
[Infl:__]
[~~case:dat~~]
[•D•]

<DP$_{\text{exp}}$>
[ϕ:β]
[case:dat]

VP

V'

V   DP$_{\text{obj}}$
[ϕ:α]
[case:__]

(a) Infl, ✗ (b) π
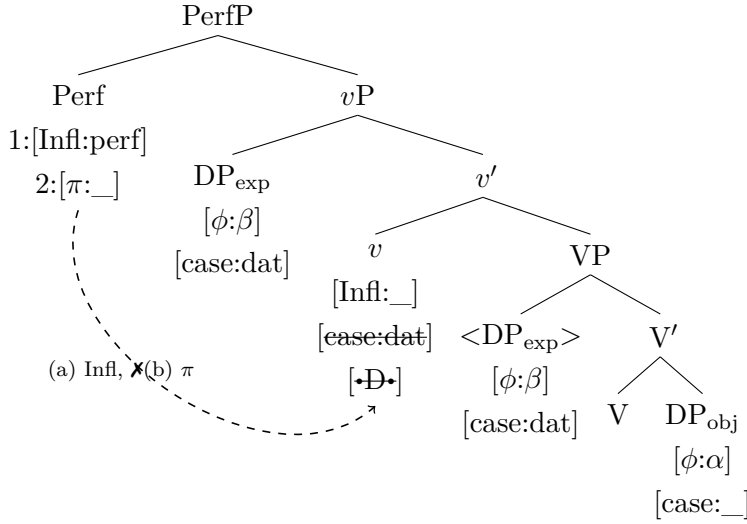
As I said, the vP contains a quirky v. The experiencer argument is base-merged in the VP, but it is raised to Spec,v via the [•D•] on v. The object is also raised to an outer Spec,v via EF, since its case feature is unchecked (I have omitted this step in tree (69)). When Perf enters the derivation, it discharges its [Infl] feature with v, which acquires the value *perf*. When it goes to the second feature [uπ:__], Perf must search v because of Nested Agree. However, this defective quirky v does not contains any π-feature. Perf goes on with its search, scanning the sister of v. However, given the phasal status of v, it is not possible to search into Comp,v (and, anyway, the object has already moved to the edge of the phase because of its unvalued case feature). Therefore, Agree on Perf fails because there it cannot find any suitable goal in the structure. The result on Perf is [~~u~~π:__], leading to BE insertion.

The derivation then proceeds as in (67). The T head enters the structure. It assigns nominative to the DP$_{\text{obj}}$ in Spec,v and it ϕ-agrees with it. The result of this operation at Spell-out will be object agreement on the auxiliary. The vocabulary entries are in (70).

(70)   Spell-out

    a.   /i/ /panini/ $\leftrightarrow$ DP[$\sqrt{\text{SANDWICH}}$][ϕ:-part,-sg,+m][case:nom]

    b.   /piaciuti/ $\leftrightarrow$ v[Infl:perf] + V[$\sqrt{\text{LIKE}}$]

    c.   /sono/ $\leftrightarrow$ Perf[π:__] + T[T:pres][ϕ:-part,-sg,+m]

    d.   /a/ /teresa/ $\leftrightarrow$ DP[$\sqrt{\text{TERESA}}$][ϕ:-part,+sg,+f][case:dat]

3.3.9 Impersonal clauses

3.3.9.1 The structure of impersonal clauses

Let us now move on to impersonal sentences. The impersonal clitic *si* can be the agentive argument of a transitive verb (71-a), of an unergative verb (71-b), the patient of an unaccusative predicate (71-c) or of a passive verb (71-d). However, it can never be the object of a transitive verb (71-e).[35]

(71)   a.   In Italia si=mangia   molti spaghetti.
            in Italy   IMPERS=eat.PRS.3SG many spaghetti
            'In Italy one eats a lot of spaghetti.'

       b.   In Italia si=lavora   molto.
            in Italy   IMPERS=work.PRS.3SG a lot
            'In Italy one works a lot.'

       c.   In Italia si=arriva   sempre in ritardo.
            in Italy   IMPERS=arrive.PRS.3SG always in delay
            'In Italy one arrives always late.'

       d.   In Italia si=è   lodat-i   per la cucina.
            in Italy   IMPERS=be.PRS.3SG praise.PRTC-PL.M for the cuisine
            'In Italy one is praised for the cuisine.'

       e.   *In Italia le   persone si=mangiano.
            in Italy the people   IMPERS=eat.PRS.3PL
            'In Italy people eats things/people.' (grammatical with the meaning: 'In Italy people eats each other.')

As we saw in the data section in chapter 2, the perfect auxiliary in impersonal clauses is always realized as BE. The sentences in (71) correspond to the perfect sentences in (72).

(72)   a.   In Italia si=sono   mangiat-i   molti spaghetti.
            in Italy   IMPERS=be.PRS.3PL eat.PRTC-PL.M many spaghetti
            'In Italy one has eaten a lot of spaghetti.'

       b.   In Italia si=è   lavorato   molto.
            in Italy   IMPERS=be.PRS.3SG work.PRTC a lot
            'In Italy one has worked a lot.'

       c.   In Italia si=è   arrivat-i   sempre in ritardo.
            in Italy   IMPERS=be.PRS.3SG arrive.PRTC-PL.M always in delay

---

[35]To the best of my knowledge, this fact has not found a coherent explanation yet. Cinque (1988) argues that *si* needs to combine with a finite T and a personal AgrP, since it is underspecified for the π-feature. However, this cannot be the explanation. In fact, *si* moves to T anyway because it is a clitic. As pronominal clitic objects do, it could move even from the object position. What seems crucial is the incompatibility of *si* with accusative case. Note, however, that in Romanian the impersonal *si* is morphologically marked as accusative (Dobrovie-Sorin 1998).

The ungrammaticality of (71-e) and its well-formedness with the reciprocal meaning also suggests that the clitic in the object position is actually bound by the external argument, receiving the reflexive/reciprocal interpretation. This hints at a unified treatment of impersonal *si* and reflexive *si*, the difference being that impersonal *si* cannot be bound. As a consequence, impersonal *si* must be the highest DP in the relevant domain, excluding the transitive object position as an available position for it. Cf. footnotes 41 and 50 for further discussion.

'In Italy one has arrived always late.'

d. In Italia si=è   stat-i   lodat-i   per la
    in Italy IMPERS=be.PRS.3SG be.PRTC-PL.M praise.PRTC-PL.M for the
    cucina.
    cuisine
    'In Italy one has been praised for the cuisine.'

First of all, I discuss the case of transitive clauses, where the impersonal *si* has the function of a subject, as in (71-a). However, there is variation in the inflection on T and in the realization of participle agreement. Either object agreement is realized both on the participle (gender and number agreement) and on the auxiliary (person and number agreement) (73-a), or default third person is realized on the auxiliary and participle agreement does not show up (73-b).

(73)   a. Si=sono   mangiat-i   gli spaghetti.
           IMPERS=be.PRS.3PL eat.PRTC-M.PL the spaghetti

       b. Si=è   mangiato gli spaghetti.
           IMPERS=be.PRS.3SG eat.PRTC the spaghetti
           'One has eaten the spaghetti.'

The two structures are not equally distributed across speakers and the variation seems to be idiolectal (D'Alessandro 2004: 56). The clause in (73-a) is the standard expression, while (73-b) is more marked. Moreover, a difference in specificity of the object correlates with the availability of the two structures. In particular, (73-b) improves if the object is a bare noun: *si=è mangiato spaghetti*. For the purpose of the present dissertation, which is focused on the morpho-phonological realization of the auxiliary, I will leave the specificity issue out of the discussion.

I argue that the two possible inflections in (73-a) and (73-b) correspond indeed to two different structures. Evidence for this claim comes from some tests that are useful for detecting the function of the arguments. The first test involves case. In Italian, pronouns bear overt case inflection. If we substitute the DP_{obj} in (73) with a pronoun, we see that it can be replaced by a nominative pronoun (or by *pro*) in (73-a), whereas in (73-b) we get an accusative pronoun (D'Alessandro 2004, 2017a).[36]

(74)   a. pro/Essi/*Li   si=sono   mangiat-i.
           PRO/NOM.3PL.M/ACC.3PL.M IMPERS=be.PRS.3PL eat.PRTC-M.PL

       b. *pro/*Essi/Li   si=è   mangiat-i.
           PRO/NOM.3PL.M/ACC.3PL.M IMPERS=be.PRS.3SG eat.PRTC-M.PL
           'One has eaten them.'

This suggests that the DP_{obj} bears a different morpho-syntactic case in the two structures

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[36]Participle agreement in (74-b) shows up because of the substitution of the full DP object in (73-b) with the clitic pronoun, whose movement to T triggers overt inflection on the participle. For the analysis of participle agreement triggered by clitic movement, cf. sections §4.4.2 and §4.4.5 in chapter 4.

in (73). It bears nominative in (73-a), as a subject does, and accusative in (73-b), as a transitive object does.[37]

Secondly, the DP in (73-a) can move to the preverbal subject position, while in (73-b) it cannot.[38]

(75)   a.   Gli spaghetti si=sono   mangiat-i   tutti.
             the spaghetti IMPERS=be.PRS.3PL eat.PRTC-M.PL all

        b.   *Gli spaghetti si=è   mangiato tutti.
             the spaghetti IMPERS=be.PRS.3SG eat.PRTC all
             'One has eaten all the spaghetti.'

These data show that the internal argument in (75-a) (and in (73-a)) behaves as a subject as far as the position is concerned, whereas this syntactic property is unavailable in (75-b) (and in (73-b)).

The third test concerns depictive secondary predicates. These are adjuncts that are co-referential with an argument of the main verb. In general, they are co-referential with the thematic object in passives, and with the initiator in impersonals (Legate 2014: 96). When applied to (73), this test shows that the depictive phrase patterns with the thematic object in (73-a), hinting at a passive structure for this sentence. In contrast, the depicitive is coindexed with the clitic *si* in (73-b), which refers to a general group of people acting as an agent, hinting at an impersonal structure for (73-b).

(76)   a.   Si=sono   derubat-i   due ragazzi$_i$ [da   ubriachi]$_i$.
             IMPERS=be.PRS.3PL rob.PRTC-M.PL two boys   while drunk
             'One has robbed two boys while drunk.' (meaning: the boys were drunk)

        b.   Si$_i$=è   derubato due ragazzi [da   ubriachi]$_i$.
             IMPERS=be.PRS.3SG eat.PRTC two boys   while drunk
             'One has robbed two boys while drunk.' (meaning: the thieves were drunk)

Fourthly, the distribution of the by-phrase (i.e., the agent argument in passive clauses)

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[37]Next to the examples in (74-a) and (74-b), Cardinaletti (2009) notes that a third variant is possible.

(i)   Li=si=sono   mangiat-i.
      ACC.3PL.M=IMPERS=be.PRS.3PL eat.PRTC-M.PL
      'One has eaten them.'

This sentence is produced by speakers of Standard Italian from Northern Italy. Cardinaletti (2009) explains it as an interference of the dialectal competence on Italian. Considering it as the product of reanalysis between the two structures in (73-a) and (73-b), I leave it out of the present discussion.

[38]In these examples, I put the floating quantifier *tutti* because otherwise the focus interpretation is available in (73-a). With the quantifier, the object *spaghetti* in (75-a) is not focused, whereas without the quantifier it is. Note that if the object is focused, both sentences are grammatical.

(i)   a.   Gli spaghetti, si=sono   mangiat-i.
          the spaghetti   IMPERS=be.PRS.3PL eat.PRTC-M.PL

      b.   Gli spaghetti, si=è   mangiato.
          the spaghetti   IMPERS=be.PRS.3SG eat.PRTC
          'The spaghetti, one has eaten.'

can shed light on the syntactic structures in (73). If the impersonal sentence with object agreement (73-a) is a passive structure, where *si* identifies the agent, it should be impossible to add an overt by-phrase. In (77-a) I show a canonical passive clause with a by-phrase. Example (77-b) illustrates that an overt by-phrase is impossible in the passive-like sentence (77-b). The sentence (77-c) shows that the by-phrase is also ruled out in the impersonal-like clause without object agreement.

(77) a. Gli spaghetti sono   stat-i   mangiat-i   dal   cliente.
          the spaghetti be.PRS.3PL be.PRTC-M.PL eat.PRTC-M.PL by.the client
          'The spaghetti have been eaten by the client.'

      b. *Si=sono   mangiat-i   gli spaghetti dal   cliente.
          IMPERS=be.PRS.3PL eat.PRTC-M.PL the spaghetti by.the client
          'One has eaten the spaghetti.'

      c. *Si=è   mangiato gli spaghetti dal   cliente.
          IMPERS=be.PRS.3SG eat.PRTC the spaghetti by.the client
          'One has eaten the spaghetti.'

The ungrammaticality of (77-b,c) is expected for opposite reasons. If (77-b) is a passive-like clause, it is impossible to add a by-phrase because the agent is already expressed by the argument *si*. If (77-c) is an active clause, the agent cannot be expressed with a by-phrase. Hence, I propose that impersonal clauses with agreement ((77-b) and (73-a)) are passive clauses with a morphologically realized by-phrase *si*, while impersonal clauses without agreement ((77-c) and (73-b)) are active clause with an agentive argument *si*. A similar interpretation of the impersonal DP as initiator has already been proposed by Legate (2014): the impersonal DP saturates the external argument position and makes it impossible to merge an agentive by-phrase.

However, there is a problem in considering an impersonal clause with agreement (73-a) as a simple passive. First of all, the form of the by-phrase is somehow special. In Italian, the agent of a passive predicate, when it is overt, is realized as a prepositional phrase (PP). However, *si* is not a PP, as its complementary distribution with DPs (78-a,b) and its ability to trigger plural agreement when it is base-generated as an object in unaccusative clauses (78-c) show (PPs are not controller for Agree).

(78) a. Si=lavora   molto.
          IMPERS=work.PRS.3SG a lot
          'One works a lot.'

      b. Teresa lavora   molto.
          Teresa work.PRS.3SG a lot
          'Teresa works a lot.'

      c. Si=è   arrivat-i   ieri.
          IMPERS=be.PRS.3SG arrive.PRTC-M.PL yesterday
          'One has arrived yesterday.'

A possible explanation for the lack of the preposition *by* lies in the lack of case on *si*. As

we will see in the analysis, impersonal *si* seems not to bear case. If it is not marked for case, then it can show up in this context without a preposition, in contrast to other DPs, which need case and therefore must be merged either in a case position or with a case assigner such as a preposition.

A further difference with passive clauses is that impersonal clauses are possible also with unaccusative verbs, differently from what happens cross-linguistically with passives. In Italian, only transitive sentences can be passivized; in German, transitive and unergative sentences can be passivized, but not unaccusative predicates. As example (78-c) shows, *si* can also be the patient object of unaccusative verbs, differently from an agentive by-phrase.

In addition, the auxiliaries that show up with the impersonal on the one side and with the passive on the other side are different. Example (79-a) shows that a passive clause in the present tense needs a single auxiliary. In case of a passive in the perfect tense, two distinct auxiliaries appear (79-b). This is not the case for the impersonal perfect clause. In the present tense, there is no auxiliary (79-c). In the perfect tense, there is a single auxiliary (79-d), instead of two (79-e).[39]

(79) a. <u>Sono</u>   mangiat-i   gli spaghetti (da Paolo).
          be.PRS.3PL eat.PRTC-M.PL the spaghetti by   Paolo
          'The spaghetti are eaten (by Paolo).'

      b. <u>Sono</u>   <u>stat-i</u>   mangiat-i   gli spaghetti (da Paolo).
          be.PRS.3PL be.PRTC-M.PL eat.PRTC-M.PL the spaghetti by   Paolo
          'The spaghetti have been eaten (by Paolo).'

---

[39]The presence of a dedicated passive auxiliary located between the perfect auxiliary and the passive participle allows to verify the phasal status of Voice$_{pass}$ with quantifier floating at the edge of Voice$_{pass}$.

(i) Le ragazze sono   tutte stat-e   promosse-e.
     the girls   be.PRS.3PL all   be.PRTC-PL.F promote.PRTC-PL.F
     'The girls have all been promoted.'

This test is not straightforward for Voice$_{impers}$, because this forms a complex head with v and it is not spelled out by a dedicated auxiliary. However, it seems that there is evidence against the phasal status of Voice$_{impers}$, if any. This is shown in example (ii-b), where the placement of the floating quantifier between the perfect auxiliary and the past participle leads to non-fully grammaticality (with respect to (ii-c)).

(ii) a. Si=sono   promosse   tutte le ragazze.
          IMPERS=be.PRS.3PL promote.PRTC-PL.F all   the girls

      b. ?Le ragazze si=sono   tutte promosse.
          the girls   IMPERS=be.PRS.3PL all   promote.PRTC-PL.F

      c. Le ragazze si=sono   promosse   tutte.
          the girls   IMPERS=be.PRS.3PL promote.PRTC-PL.F all
          'One has promoted all the girls.'

Assuming that v has head-moved to Voice$_{impers}$, the position occupied by the quantifier in (ii-b) is Spec,Voice$_{impers}$, which does not constitute a landing site for successive cyclic movement, if Voice$_{impers}$ is not a phase. Instead, in examples (ii-a,c) the floating quantifier is located either in the specifier or in the complement of v, which are below the past participle that realizes the complex head Voice$_{impers}$ + v. In other words, Spec,v is available as an escape hatch, and this position is postverbal because v has moved to Voice$_{impers}$. In contrast, Spec,Voice$_{impers}$ is not a possible landing site for the quantifier. This is the case if Voice$_{impers}$ is not a phase (although nothing crucial changes for the analysis, even for participle agreement, which realizes the EF-related ϕ-features on v, and not on Voice$_{impers}$, cf. section §4.4.7.3 in chapter 4).

> c. In Italia si=mangia gli spaghetti.
>   in Italia IMPERS=est.PRS.3SG the spaghetti
>   'In Italy one eats the spaghetti.'
>
> d. In Italia si=<u>sono</u> mangiati gli spaghetti.
>   in Italia IMPERS=be.PRS.3PL eat.PRTC-M.PL the spaghetti
>   'In Italy one has eaten the spaghetti.'
>
> e. *In Italia si=<u>sono</u> <u>stat-i</u> mangiati gli spaghetti.
>   in Italia IMPERS=be.PRS.3PL be.PRTC-M.PL eat.PRTC-M.PL the spaghetti
>   'In Italy one has eaten the spaghetti.'

Examples (78) and (79) show that the impersonal clause cannot be simply treated as a passive clause with *si* as the by-phrase, even though there are many similarities with it.

To sum up, the tests provided above have shown that the impersonal clause with agreement and the impersonal clause without agreement behave quite differently. In particular, the former looks like a passive clause, although it is different from a canonical passive; the latter seems to be an active impersonal clause. In what follows, I introduce my proposal for the syntactic structure of impersonal sentences.

I argue that in impersonal clauses the argument structure is created by an impersonal Voice that has passive-impersonal semantics (according to the cline of impersonals proposed by Legate 2014). I call this head Voice$_{\text{impers}}$. The head selects a defective v and introduces the impersonal argument *si* in its specifier by means of a [•D•] feature, either via external Merge (transitive predicates) or via internal Merge (unaccusative verbs).

I propose that Voice$_{\text{impers}}$ is associated with a π-feature that semantically restricts the external argument position, but does not saturate it. This idea is developed by Legate (2014: 2): Voice can be "associated with ϕ-features that semantically restrict the external argument position, but do not saturate it". Legate's (2014) analysis is based on two semantic operations: *saturation* and *predicate restriction* (Chung and Ladusaw 2003). The former is a process that satisfies the requirements in the argument position through function application or existential closure. The latter is the operation that modifies the argument position by specifying which kind of arguments it can host (Legate 2014: 38). The equivalent of these processes in syntax are Merge of a DP in an argumental syntactic position (saturation) and a licensing operation (in the form of Agree or c-selection) between argument and functional head (predicate restriction).

Following Legate's (2014) proposal, I argue that Voice$_{\text{impers}}$ bears an unvalued π-feature, which restricts the specifier of Voice$_{\text{impers}}$ to arguments that bear an unvalued person feature as well. This is ensured by the presence of $[\pi:\_]$ on the Voice head. This assumption has the effect that only an impersonal argument may saturate the external argument position, since it also contains an unvalued π-feature, as I have proposed in section §3.2.4.2. The clitic *si* can be merged either as the external argument of Voice$_{\text{impers}}$, or as the internal argument of the verb and then raised to Spec,Voice$_{\text{impers}}$ in order to saturate the Voice$_{\text{impers}}$ external argument position (as is the case for unaccusatives). No argument with a valued π-feature can occupy Spec,Voice$_{\text{impers}}$.

This proposal also exhibits some similarities with the analysis of reflexive and anticausative structures developed by Alexiadou, Anagnostopoulou, and Schäfer (2015).[40] In particular, reflexively marked anticausatives contain an expletive Voice head that projects a specifier, which can host only a se-reflexive (Alexiadou, Anagnostopoulou, and Schäfer 2015: 106), as illustrated in (80-b).

(80)   a.   [$_{\text{VoiceP}}$ DP Voice [$_{v\text{P}}$ v se-refl]] (semantically reflexive verb)
        b.   [$_{\text{VoiceP}}$ se-refl Voice [$_{v\text{P}}$ v DP]] (reflexively marked anticausative)

Only a se-reflexive can be merged in the specifier of expletive Voice because this position can host only DPs without denotation (given the expletive nature of the head Voice). A se-reflexive can act as such if it lacks a c-commanding antecedent, and, consequently, it does not express any denotation (Alexiadou, Anagnostopoulou, and Schäfer 2015: 110).[41]

As far as the operation that matches the unvalued π-feature on Voice and on the impersonal argument is concerned, I consider it as a predicate restriction operation, as Legate (2014) does. In other words, the [•D•] feature on Voice is relativized to DPs with an unvalued person feature: [•D[π:_]•].[42] This specific selectional requirement is similar to what happens for the passive Voice. Voice$_{\text{pass}}$ requires to be merged with something of type v ([•v•]), but defective (this could be represented by the need of having unvalued case inside the phrase: [•case:_•]), resulting in the relativized c-selectional feature [•v[case:_]•].

The featural array on Voice$_{\text{impers}}$ is as follows.

(81)   Voice$_{\text{impers}}$: [•v•], [Infl:_], [π:_], [•D[π:_]•]

This head selects for a vP. I said above that v must be defective, but this is not always the case. Instead, I propose that Voice$_{\text{impers}}$ can take as a complement either a defective v or a transitive v. The difference between the two types of impersonal sentences (the one

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[40]Alexiadou, Anagnostopoulou, and Schäfer (2015: 99) do not offer any analysis of impersonal clauses, but they argue that these should involve a thematic Voice projection (with an implicit thematic external argument) that developed out of reflexively marked expletive Voice.

[41]This discussion concerns the difference between reflexive *si* and impersonal *si*. Is unvalued *si* (reflexive *si*) different from underspecified *si* (impersonal *si*)? The former must be bound, differently from the latter. Lack of binding for the impersonal *si* seems to suggest either that impersonal *si* cannot bear any index, or that it bears [π:arb] instead of [π:_]. If the latter is the case, *arb* should not count as a syntactic person (because of auxiliary selection), but it should be only a semantic value, in accordance with Cinque's (1988) intuition. It could also be the case that impersonal *si* must be bound, but only by Voice$_{\text{impers}}$, similarly to the Agree relation that Alexiadou, Anagnostopoulou, and Schäfer (2015) uses for expletive Voice or to Legate's (2014) predicate restriction.

In any case, there should be a featural difference between the two, in order to allow for the sentence in (i), where reflexive *si* is merged in the object position and it is bound by impersonal *si* in Spec,Voice$_{\text{impers}}$.

(i)   Ci=si=lava.
       IMPERS=REFL.ACC.3SG=wash.PRS.3SG
       'One wash themselves.'

[42]Instead, under Alexiadou, Anagnostopoulou, and Schäfer's (2015) approach, the unvalued ϕ-features on Voice must be valued with the closest DP in its m-command domain, with the result that Voice agrees with its specifier if there is one (Alexiadou, Anagnostopoulou, and Schäfer 2015: 111).

with object agreement (73-a), the other one with default agreement (73-b), repeated here again) stems exactly from the different types of v.

(82) a. Si=sono   mangiat-i   gli spaghetti.
          IMPERS=be.PRS.3PL eat.PRTC-M.PL the spaghetti
          'One has eaten the spaghetti.'   (defective v)

      b. Si=è   mangiato gli spaghetti.
          IMPERS=be.PRS.3SG eat.PRTC the spaghetti
          'One has eaten the spaghetti.'   (transitive v)

I propose that Voice$_{impers}$ selects a defective v in (82-a), and a transitive v in (82-b).[43] The former scenario is similar to a passive derivation. Since Voice$_{impers}$ selects a defective v, accusative case is not assigned and *si* is introduced as the agent in Spec,Voice$_{impers}$. The consequence is object agreement on T and nominative case on the object. This is the canonical derivation for clauses containing a Voice$_{impers}$.

Occasionally, Voice$_{impers}$ can also select a non-defective v, giving rise to the more marked structure in (82-b). Here, v assigns accusative case and *si* is introduced as the external argument in Spec,v. The impersonal argument moves to Spec,Voice$_{impers}$ because the specifier of this head must be filled by a DP that bears an unvalued person feature. As I will show in the derivation, in this case agreement on T is realized as default and nominative is not assigned at all (because the clitic head-moves to T and because the object already bears accusative case).

The difference between the two options is neutralized in the case of unaccusatives. Since unaccusative verbal roots cannot combine with transitive v, the only v which is possibly selected by Voice$_{impers}$ is the defective one. This is confirmed by the fact that for unaccusatives there is no contrast similar to (73-a),(73-b), as (83) shows.

(83) a. Si=è   arrivat-i   ieri.
          IMPERS=be.PRS.3SG arrive.PRTC-M.PL yesterday

      b. *Si=è   arrivato   ieri.
          IMPERS=be.PRS.3SG arrive.PRTC yesterday

---

[43] As for the optionality with respect to the type of v selected by Voice$_{impers}$, the scenario is similar to what happens with passives. Transitive verbal roots are normally selected by a non-defective v, but occasionally (namely, when the upper projection is a passive Voice) they must be selected by a defective v. Voice$_{impers}$ has a similar selectional requirement. Note, however, that there are some differences: (i) the less marked option for Voice$_{impers}$ is the defective v (instead transitive verbs are selected by non-defective v and only occasionally by defective v) (ii) both options are possible (the distribution is instead complementary in the active/passive case).

Therefore, the selectional requirements of Voice$_{impers}$ is as follows.

(i)   Voice$_{impers}$: [•v[case:__]•], optionally [•v•]

Note that [•case:__•] is not a specification on the head v, since defective v is not specified at all for case, but it is instead a feature located into the vP, namely on the DP$_{obj}$ which is located at the edge of the phase v. In other words, Voice$_{impers}$ normally selects a maximal projection that contains the head v and an unvalued case feature. Sometimes this requirement is dropped, leading to the generic selection of vP.

c. *Si=sono   arrivat-i   ieri.
   IMPERS=be.PRS.3PL arrive.PRTC-M.PL yesterday
   'One has arrived yesterday.'

3.3.9.2 Transitive verbs with impersonal *si*

Let us now look at the derivation for a transitive impersonal clause with object agreement. I repeat here the relevant example (73-a).

(84)   Si=sono   mangiat-i   gli spaghetti.
         IMPERS=be.PRS.3PL eat.PRTC-M.PL the spaghetti
         'One has eaten the spaghetti.'

First of all, the VP is built with a transitive verbal head and a DP complement. The difference with a canonical transitive clause concerns the type of v that selects this VP: a defective v. As shown in (85), v does not trigger any operation.

(85)

(86)
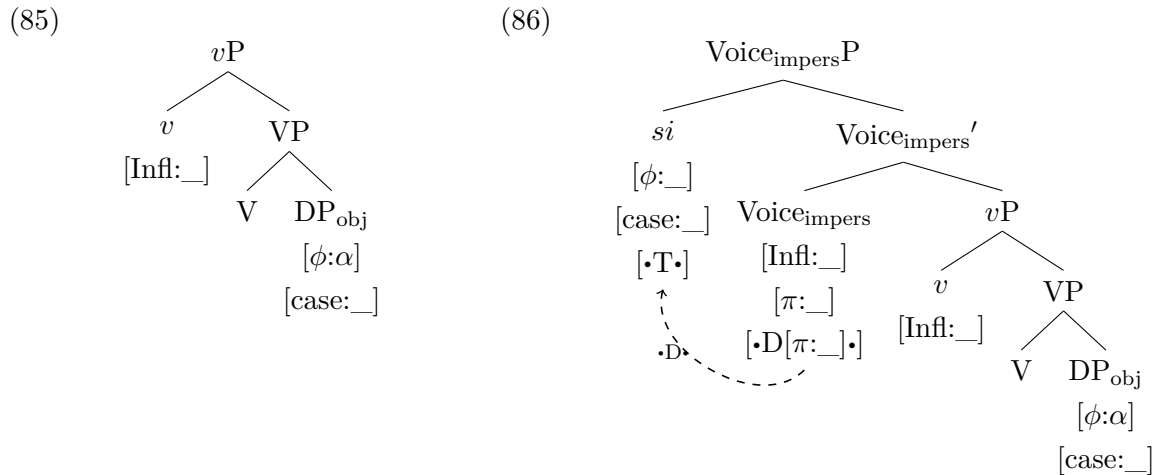
In the next step in (86), Voice$_{\text{impers}}$ is merged with the vP. As I have said above, this head is associated with an unvalued π-feature, which restricts the external argument position to an argument that bears the same type of feature. The head requires in its specifier an argument of the category D ([•D•]), which must be equipped with an unvalued π-feature (π:__). I express this with the feature [•D[π:__]•]. The impersonal *si* can saturate the specifier position of Voice$_{\text{impers}}$, since it bears the right type of feature (π:__). Hence, Voice$_{\text{impers}}$ introduces the DP *si* as the external argument, which receives the Theta-role of initiator.

The next head that enters the derivation is Perf, as (87) shows. This checks the [Infl] feature on Voice, which acquires the value *perf*. Consequently, the complex head V + v + Voice$_{\text{impers}}$ that arises via head movement will be spelled out as a past participle. The [Infl] feature on v remains unchecked, but this is not problematic: it is exactly what happens in the present tense, when Perf is not part of the numeration and v is selected by T. The next operation performed by Perf is the search for person. Given Nested Agree, Perf must probe Voice$_{\text{impers}}$ also for π. Voice is actually a matching goal for the person

probe, since it contains a π-feature, although unvalued. Therefore, Agree stops and the result on Perf is lack of valuation for the person feature.

(87)

PerfP

Perf
1:[uInfl:perf]
2:[uπ:__]

(a) Infl, (b) π

Voice$_{impers}$P

si
[ϕ:__]
[case:__]
[•T•]

Voice$_{impers}$'

Voice$_{impers}$
[Infl:__]
[π:__]
[•D[π:__]•]

*v*P

v
[Infl:__]

VP

V   DP$_{obj}$
[ϕ:α]
[case:__]
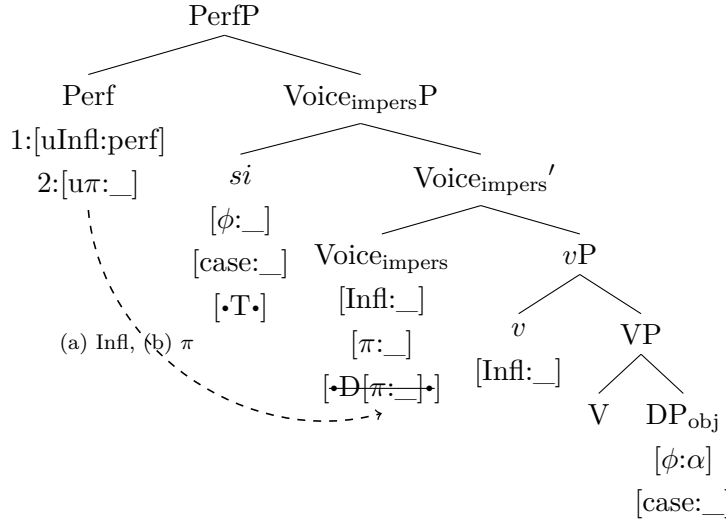
The derivation proceeds in (88). As soon as T is merged in the structure, the clitic *si* incorporates into it, because of its [•T•] feature. The clitic and T form a complex head. From this position, the clitic can neither receive its case from T, nor be a target for ϕ-Agree on T. Hence, the clitic *si* ends up with an unvalued case feature in this derivation.[44] Differently from Cinque (1988), where *si* is nominative, and from Dobrovie-Sorin (1998: 418), where *si* is a middle passive accusative *si*, I claim that impersonal *si* does not bear a valued case feature. In contrast, nominative case is assigned to the internal argument, whose case is still unchecked.[45] After having assigned nominative case to the internal argument, T also probes for ϕ-features. Given Nested Agree, it must probe the DP$_{obj}$, which contains a set of ϕ-features. Consequently, the ϕ-probe on T skips Voice, which contains an unvalued π-feature, resulting in object agreement.

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[44]This is compatible with Baker's (1988) theory of incorporation, according to which incorporated elements do not need case. Moreover, I follow Bošković (2007) in assuming that case features on a case assigner head (such as T) can remain unchecked without causing any problem in the derivation.

[45]The internal object should not be accessible for T, given the phasal status of *v*. I discuss this issue in section §4.5 of chapter 4, when addressing participle agreement with in situ objects. I think that there is movement of the object out of *v*P and Voice$_{impers}$P in order to be accessible for T. This movement can be either covert (cf. section §4.5.1 in chapter 4 for some tests for covert movement), or overt, but not visible because of the further movement of Voice-*v*-V to T. Another solution is given by Cyclic Agree, which would also maintain the DP accessible to T (Legate 2005).

(88)
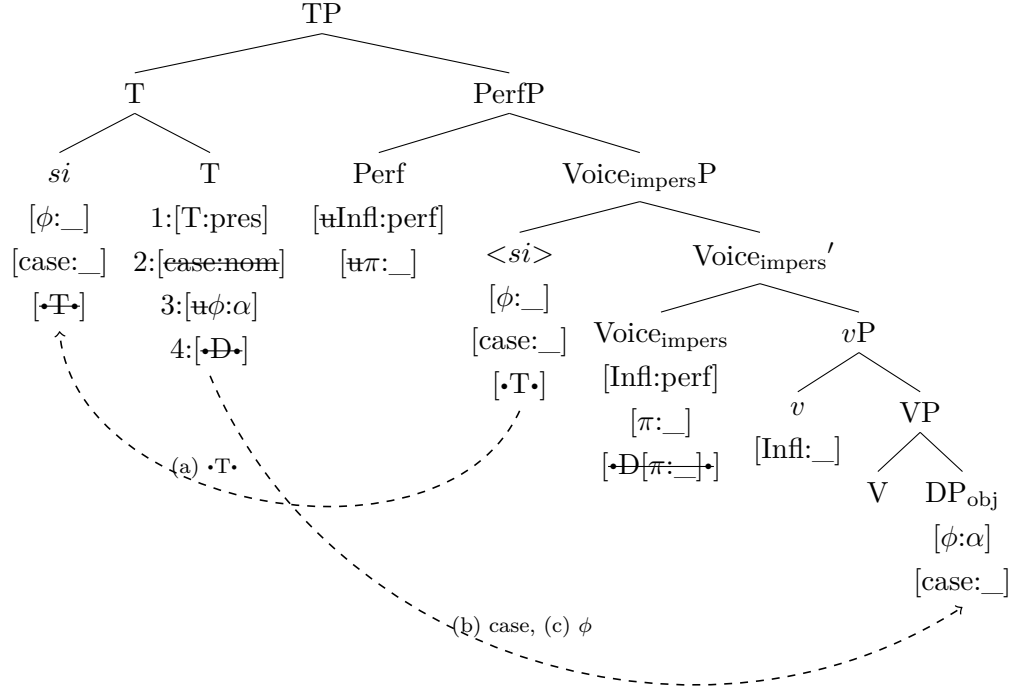
The sentence (84) *si=sono mangiat-i gli spaghetti*, which I am analyzing here, does not contain any DP in the subject position. As far as the EPP-feature on T is concerned, it can be satisfied by a *pro*. A further possibility is that the EPP is satisfied by cliticization or movement of the auxiliary to T (Alexiadou and Anagnostopoulou 1998). Note also that the EPP can alternatively attract the DP$_{obj}$, generating the clause *gli spaghetti si=sono mangiat-i*.

The vocabulary entries at Spell-out are as follows.

(89)   Spell-out

   a.   /gli/ /spaget:i/ ↔ DP[$\sqrt{\text{SPAGHETTI}}$][ϕ:-part,-sg,+m][case:nom]
   b.   /manʤati/ ↔ v + Voice[Infl:perf][π:__] + V[$\sqrt{\text{EAT}}$]
   c.   /sono/ ↔ Perf[π:__] + T[T:pres][ϕ:-part,-sg,+m]
   d.   /si/ ↔ DP[ϕ:__][case:__]

To sum up, in the impersonal sentence with object agreement (84) BE shows up on Perf because of Agree with π-defective Voice$_{impers}$. The internal argument bears nominative case and controls the inflection on T because of the defectiveness of v (which is not a case assigner).

Let me now illustrate the derivation of the impersonal clause with default agreement (73-b), repeated here again.

(90) Si=è   mangiato gli spaghetti.
      IMPERS=be.PRS.3SG eat.PRTC the spaghetti
      'One has eaten the spaghetti.'

As I have said, the derivation is very similar to the one just sketched. The main difference is that the v that is selected here by Voice$_{\text{impers}}$ is non-defective. The perfect auxiliary is always realized as BE, since the unvalued π-feature of Voice$_{\text{impers}}$ intervenes. It is noteworthy that, in the case of impersonal clauses, the type of argument structure of the verb does not matter for the purpose of auxiliary selection. In all clauses containing an impersonal si the auxiliary is realized as BE because of Voice$_{\text{impers}}$. The unvalued person feature on Voice$_{\text{impers}}$ always leads to defective intervention: Agree stops without any feature being copied on Perf, resulting in BE insertion.

The first step of the derivation is shown in (91). Non-defective v assigns accusative case to the object, agrees with it for the person feature and introduces the external argument. The numeration contains the impersonal clitic si, which is selected as the external argument by v. At this stage, there is no restriction on the type of argument. However, the derivation would crash at the level of Voice$_{\text{impers}}$, if v would introduce an element that is featurally different from the impersonal si. Hence, the numeration must contain all and only the necessary items for the present derivation.

(91)
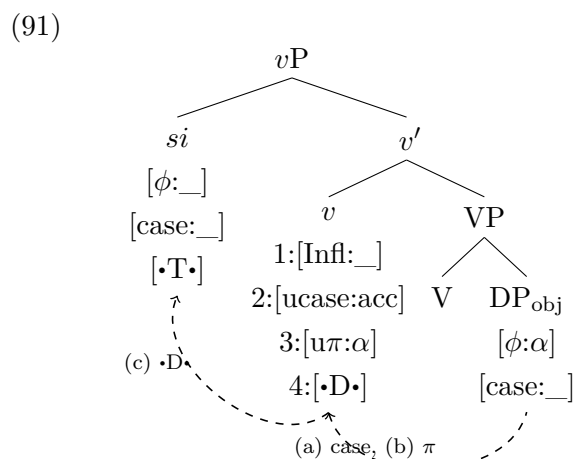
In the next step (92), this vP is merged with Voice$_{\text{impers}}$. As I said, Voice$_{\text{impers}}$ can either select a defective v, as in the previous derivation, or a full argument structure v, as in (92). Voice$_{\text{impers}}$ restricts its external argument position to a π-defective item, as it did in the previous derivation. The impersonal si is firstly merged as the external argument of v, as I have shown in (91). Then, it moves to Spec,Voice, attracted by the [·D[π:__]·] feature on Voice$_{\text{impers}}$. No other argument with valued ϕ-features would be able to satisfy the selectional restriction imposed by Voice. In this case, the [·D[π:__]·] feature triggers internal Merge instead of external Merge. This is because the numeration does not contain

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any other DPs that could satisfy this feature.[46] As far as the initiator Θ-role assigned by Voice$_{impers}$ is concerned, the idea is that this is related to the operation of predicate restriction carried out by Voice. The initiator Θ-role can be composed with another one, previously assigned, resulting in a composed Θ-role on the impersonal argument. Alternatively, one could argue that Voice$_{impers}$ is able to assign a Θ-role only when it triggers external Merge, and not via internal Merge, as is the case in this derivation, and, for instance, in the derivation in section 3.3.9.4 (cf. also footnote 46).

(92)
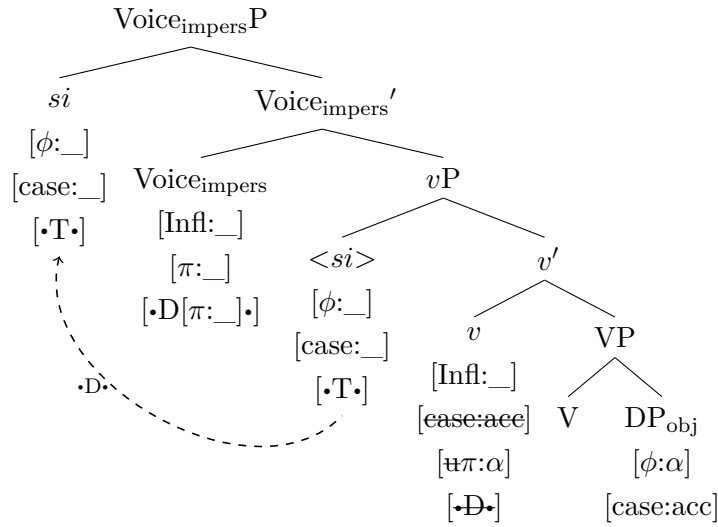
In the next step (93), Perf is added to the structure. The first operation that Perf carries out is [Infl]-Agree. The highest matching goal in the structure is Voice$_{impers}$. The two heads agree for [Infl]. After that, the second probe on Perf initiates its search. Nested Agree forces [uπ:__] on Perf to verify if Voice$_{impers}$, the last head that Perf has interacted with, can satisfy it. In this case Voice$_{impers}$ bears a π-feature, although unvalued. Voice$_{impers}$

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[46]The reader may wonder what happens if the numeration contains a further DP, which can be merged in Spec,v instead of *si*. For example, if the numeration contains the three DPs *Teresa, spaghetti, si*, the derivation with a non-defective v could be as follows.

(i)   a.   [$_{vP}$ Teresa v [$_{VP}$ V gli spaghetti]]
        b.   [$_{VoiceP}$ *si* Voice [$_{vP}$ Teresa v [$_{VP}$ V gli spaghetti]]]

The resulting sentence is in (ii), which is ungrammatical with impersonal meaning and can be interpreted only of *si* is a reflexive dative clitic (cf. section §3.3.7) and the subject is focused.

(ii)   *Si=mangia   Teresa gli spaghetti.
        impers=eat.prs.3sg Teresa the spaghetti
        'The spaghetti are eaten by Teresa.' (grammatical: 'Teresa eats the spaghetti.')

A possible way to rule out the derivation in (i) is to consider the Theta-criterion (Chomsky 1981). This derivation violates the Theta-criterion: *si* needs a Theta-role and there is only one such role (agent) that is provided by v. The necessary assumption is that Voice$_{impers}$ is a Theta-role assigner only if it combines with a defective vP, namely when it introduces *si* via external Merge and not when it raises it. Note that this assumption is also needed because otherwise in the derivation of (90) the impersonal *si* would get two Theta-roles (one from non-defective v, one from Voice$_{impers}$).

is the highest matching goal (even if, structurally, there is a higher item with π-feature, namely the clitic *si*; but this lies outside the search domain of [uπ:__] on Perf). The matching feature on Voice$_{\text{impers}}$ stops Agree, independently of the specific value of that feature. The result on Perf is [u̶π:__].

(93)

PerfP
├─ Perf
│   1:[uInfl:perf]
│   2:[uπ:__]
│   (a) Infl, (b) π
└─ Voice$_{\text{impers}}$P
   ├─ *si*
   │   [ϕ:__]
   │   [case:__]
   │   [•T•]
   └─ Voice$_{\text{impers}}'$
      ├─ Voice$_{\text{impers}}$
      │   [Infl:__]
      │   [π:__]
      │   [•D̶[π:__̶]•]
      └─ vP
         ├─ $<si>$
         │   [ϕ:__]
         │   [case:__]
         │   [•T•]
         └─ v'
            ├─ v
            │   [Infl:__]
            │   [c̶a̶s̶e̶:a̶c̶c̶]
            │   [u̶π:α]
            │   [•D̶•]
            └─ VP
               ├─ V
               └─ DP$_{\text{obj}}$
                   [ϕ:α]
                   [case:acc]
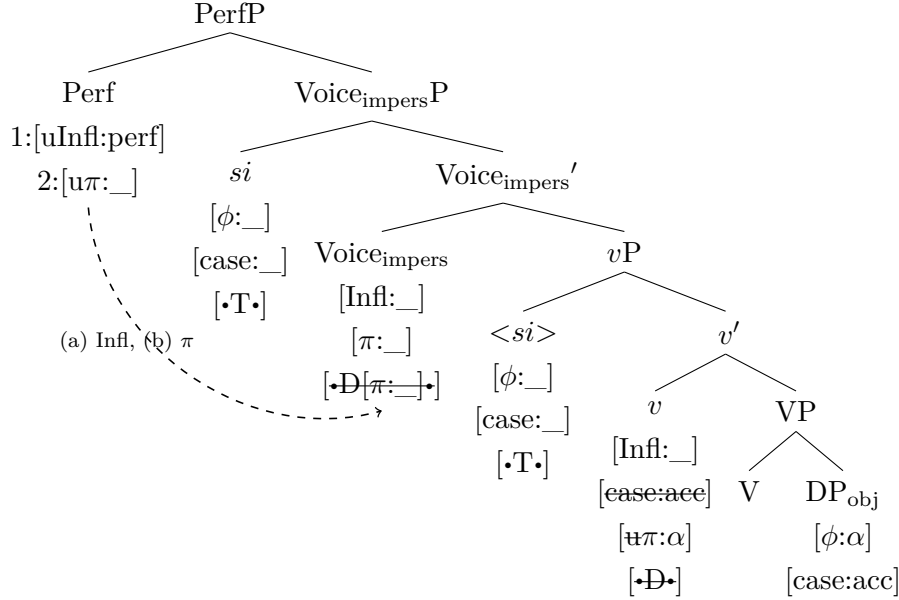
In the next tree (94), the head T is merged. As soon as T is merged in the structure, the clitic *si* moves to T, thereby forming a complex head. Now the clitic is not accessible anymore for operations triggered by T, since it has become part of T itself. When T tries to assign nominative case, there is no possible goal in the structure. In fact, the DP$_{\text{obj}}$ is too deeply embedded (the phase boundary v intervenes) and it has already received case. Therefore, nominative case is not assigned to any DP.

After case assignment has failed, T goes on with the second feature: [uϕ:__]. Since the previous operation ([ucase:nom]) has not succeeded in returning a goal, the subsequent operation ([uϕ:__]) is not constrained by Nested Agree. The probe for person starts its search from the sister of T. It finds Perf, which bears the relevant feature, although unvalued. Hence, Agree stops without copying any value.[47] At Spell-out, T will be spelled out with default inflection.

Finally, the EPP-feature on T must be satisfied. In the present case, there is no DP that can be attracted to Spec,T, since the clitic is incorporated into T and the object is not accessible anymore because of the PIC. Hence, the EPP is satisfied either by an expletive *pro* or by cliticization or movement of the auxiliary to T (Alexiadou and Anagnostopoulou

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[47]Note that Voice$_{\text{impers}}$ contains a subset of the features required by T (π instead of ϕ). Therefore, the suparts of the probe [u#:__] and [uγ:__] go on probing. The phasal status of Voice prevents the probe from searching below it. However, Voice$_{\text{impers}}$ is part of the complex head V-v-Voice after head movement. Thus, v is actually available for Agree with T. However, it does contain neither #, nor γ, but only π. Hence, Agree on T for # and γ fails.

1998).

(94)

```
                              TP
                   ┌──────────┴──────────┐
                   T                    PerfP
            ┌──────┴──────┐      ┌───────┴────────┐
           si            T      Perf         Voice_impers P
         [φ:_]      1:[T:pres]  [uInfl:perf]  ┌──────┴──────┐
        [case:_]    2:[case:nom] [uπ:_]     <si>      Voice_impers′
         [•T•]      3:[uφ:_]               [φ:_]   ┌──────┴──────┐
                    4:[•D•]               [case:_] Voice_impers    vP
                                           [•T•]  [Infl:perf]  ┌────┴────┐
                                                   [π:_]     <si>       v′
                                                  [•D[π:_]•] [φ:_]   ┌───┴───┐
                                                           [case:_]  v      VP
                                                            [•T•]  [Infl:_] ┌──┴──┐
                                                                  [case:acc] V  DP_obj
                                                                  [uπ:α]       [φ:α]
                                                                   [•D•]    [case:acc]
```

Annotations on the tree: (a) •T•; (b) case; (c) φ
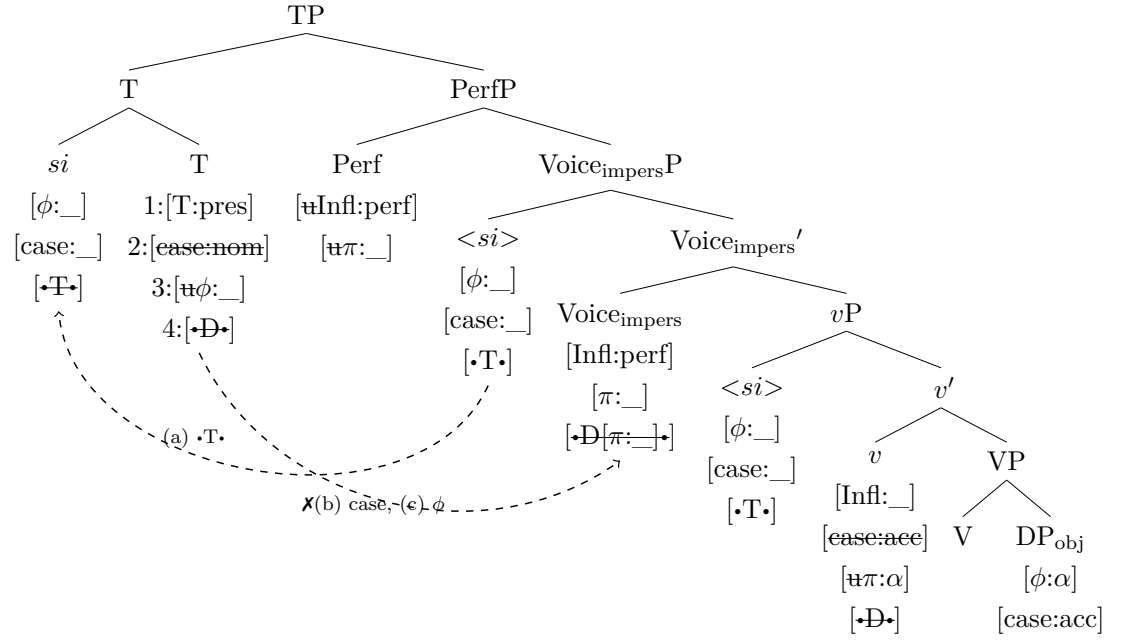
At Spell-out, the vocabulary entries are as follows.

(95)   Spell-out

a.   /gli/ /spaget:i/ ↔ DP[$\sqrt{\text{SPAGHETTI}}$][ϕ:-part,-sg,+m][case:acc]

b.   /mandʒato/ ↔ v + Voice[Infl:perf][π:_] + V[$\sqrt{\text{EAT}}$]

c.   /ɛ/ ↔ Perf[π:_] + T[T:pres][ϕ:_]

d.   /si/ ↔ DP[ϕ:_][case:_]

To sum up, an impersonal sentence with a transitive verb where there is no participle agreement and the auxiliary is inflected as default third person can be derived if Voice_impers selects a full argument structure vP.[48]

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[48]According to D'Alessandro (2004: 60), for some speakers the sentence in (i) is also grammatical.

(i)   Si=è   mangiat-i   gli spaghetti.
      IMPERS=be.PRS.3SG eat.PRTC-M.PL the spaghetti
      'One has eaten the spaghetti.'

In (i), the presence of participle agreement shows that v is defective, but inflection on T is not controlled by the internal argument as it should (cf. derivation for the sentence (84)).

First of all, it could be the case that these speakers have a more liberal strategy to get participle agreement than edge feature insertion. In fact, in Old Italian and in many Southern dialects it is possible to have object agreement even in sentences without object movement (Loporcaro 2010, 2016; Belletti 2017). If this is true, then (i) involves a non-defective v and participle agreement is due to a gender and number probe on v (cf. section §4.7 in chapter 4 for details).

Another explanation for the lack of finite agreement on T with the object could be the lack of application of Nested Agree or a different order of case assignment and ϕ-Agree on T ([uϕ] ≻ [ucase:nom]), so that T probes Voice_impers for the person feature, instead of the object.

Since I cannot consult the speakers of the varieties where (i) is grammatical, I leave the issue open.

3.3.9.3 Unergative verbs with impersonal *si*

In the case of unergative predicates, there is only one way to form an impersonal clause, shown in (96).

(96)   Si=è   lavorato   molto.
            IMPERS=be.PRS.3SG work.PRTC a lot
            'One has worked a lot.'

The derivation for unergative verbs is exactly the same as for transitive verbs. Recall that unergative verbs are underlyingly transitive verbs: they select for a covert cognate object and they are selected by a non-defective v (cf. section §3.3.3). In the analysis of impersonal clauses with a transitive verb in section §3.3.9.2, I have argued that for transitive predicates there are two different possibilities in agreement, depending on the type of v that is selected by Voice$_{\text{impers}}$ (namely, defective v or transitive v). Similarly, Voice$_{\text{impers}}$ can select either a defective v or a transitive v also when the verb is unergative.

The representation in (97) summarizes the derivation with a defective v. The detailed description is equal to the derivation proposed for (84) in the previous section. The only difference concerns the internal argument, which is phonologically not realized and bears invariably the following ϕ-features: [ϕ: 3,sg,m].

(97)
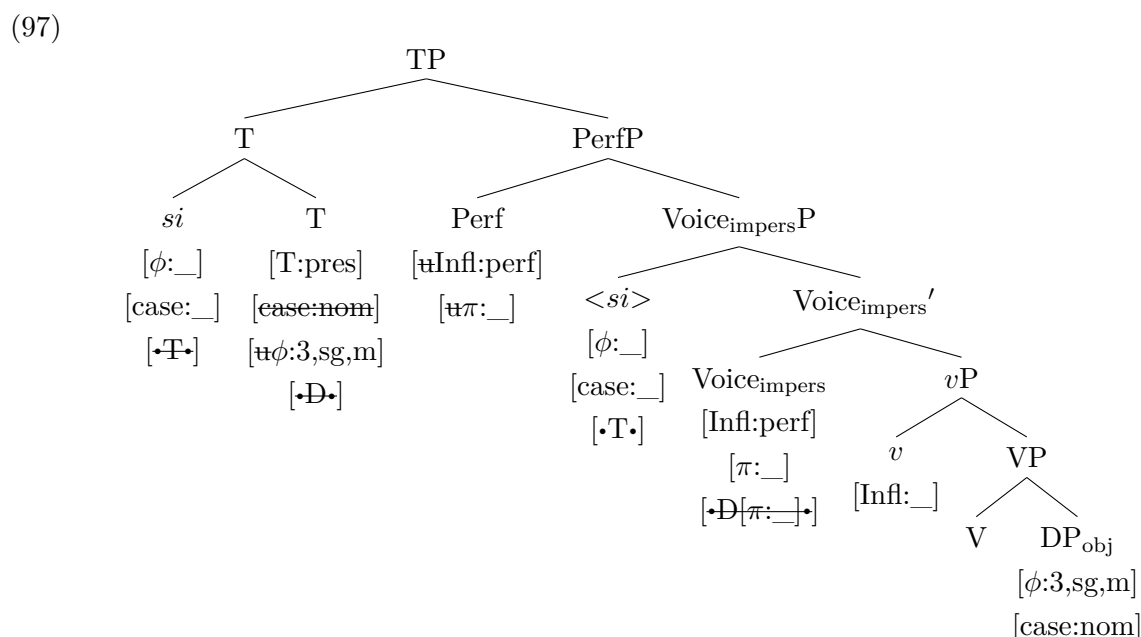
If Voice$_{\text{impers}}$ selects a defective v (as for example (84)), v neither contains a π-feature, nor does it assign accusative case. Therefore, the case of the covert object remains unvalued. Then, this vP is merged with Voice$_{\text{impers}}$, which bears an unvalued π-feature, in order to restrict its external argument position to impersonal arguments. The impersonal *si* is introduced in its specifier. When Perf enters the derivation, it targets Voice$_{\text{impers}}$ for

person-Agree (after having agreed with it for [Infl]). The person probe on Perf cannot copy any value, leading to BE insertion. When T is merged, *si* incorporates into it; nominative case is assigned to the cognate object and its ϕ-features (crucially, 3sg), are copied onto T. For this reason, the inflection on the auxiliary is third person singular. The inflection on T is due to agreement with the cognate covert object, rather than to default insertion.[49]

Turning now to the second scenario, *v* can also be non-defective, as I have argued for the transitive clause in (90). This head assigns accusative case to the covert object and contains a π-probe that copies the person feature of the object. However, the presence of a π-feature on *v* does not change the result of Agree on Perf. As in the previous case, the goal for person-Agree on Perf (after Agree for the Infl-feature) is Voice$_{\text{impers}}$, since it bears a π-feature. Therefore, Perf agrees with Voice$_{\text{impers}}$, without copying any value, and leading to BE insertion at Spell-out. As soon as T is merged, *si* incorporates into it. Then, T tries to assign nominative case, but case assignment fails, since in the c-command domain there is no DP that lacks case. When it comes to [uϕ:__], Nested Agree cannot apply because the previous operation has failed: the domain of [uϕ:__] on T is the sister of T. As a consequence, the person probe targets Voice$_{\text{impers}}$. At Spell-out, the unvalued features on T will realized by the default third person singular. The derivation is shown in (98).

(98)
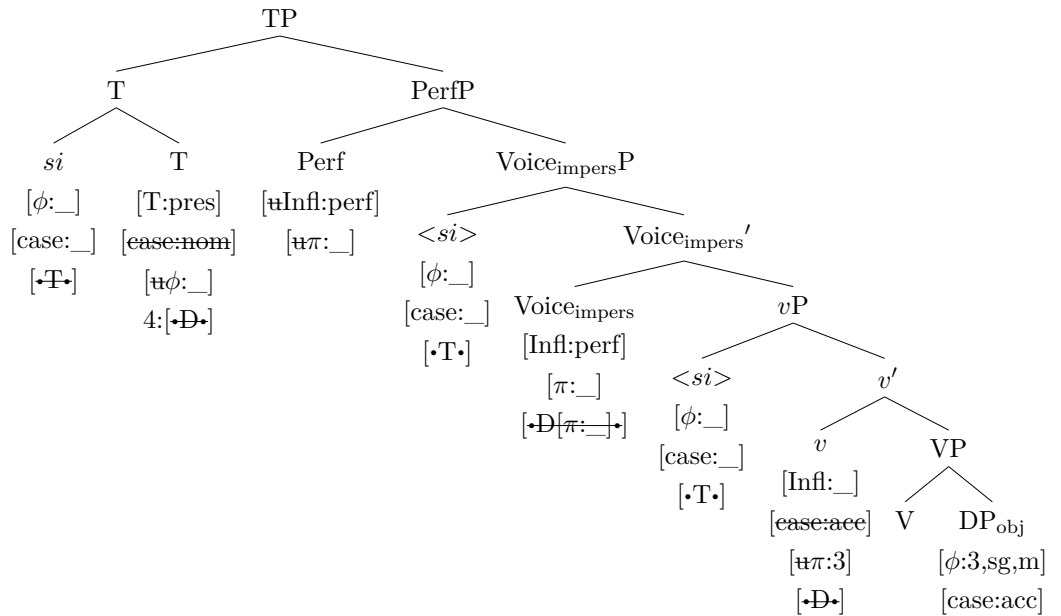
At Spell-out, the vocabulary entries for sentence (96) are as follows (I have omitted from the trees the adverbial 'a lot', which is an adjunct to Spec,*v*).

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[49]With *default insertion*, I mean the substitution at Spell-out of a terminal node with the elsewhere form, in correspondence of an unvalued morpho-syntactic feature. It is not the case that a value is inserted in the syntax if valuation fails (differently from Béjar 2003; Preminger 2014). In the case of Perf[uπ:__], the elsewhere form is BE. For T[uϕ:__], the elsewhere form is third person singular. Voice$_{\text{impers}}$ is always realized by the null exponent.

(99)   Spell-out

    a.   /molto/ $\leftrightarrow$ AdvP[$\sqrt{\text{A LOT}}$]

    b.   /lavorato/ $\leftrightarrow$ v + Voice[Infl:perf][π:__] + V[$\sqrt{\text{WORK}}$]

    c.   /ɛ/ $\leftrightarrow$ Perf[π:__] + T[T:pres][ϕ:__]

    d.   /si/ $\leftrightarrow$ DP[ϕ:__][case:__]

To sum up, both the derivations with a defective v and with a transitive v are available also for unergative verbs. In the former case, T agrees with the covert object, which bears nominative case (represented in (97)). In the latter case, the inflection on T is due to default insertion, the covert object bears accusative case and nominative is not assigned at all (shown in (98)). However, in both derivations the resulting string is the same: the sentence (96) is ambiguous between two syntactic structures.

3.3.9.4 Unaccusative verbs with impersonal *si*

In the case of unaccusative impersonal clauses, there is only one possibility: the perfect auxiliary is always BE in third person singular and the participle exhibits plural agreement (generally with masculine gender, but also feminine is possible), as shown in (100).

(100)   Si=è   partit-i   presto.
          IMPERS=be.PRS.3SG leave.PRTC-M.PL early
          'One has left early.'

Unaccusative verbal roots can combine only with defective v. A full-argument structure v can never select an unaccusative verb. Therefore, there is only one option when it comes to the type of v selected by Voice$_{\text{impers}}$: the vP complement can be built only with the defective v.

The derivation for (100) proceeds as follows. In (101), the unaccusative vP is built as in section §3.3.4. The main difference is that the impersonal argument *si* is merged as the internal argument.[50] The head v introduces a phase boundary; the clitic moves to Spec,v, because it bears the unchecked features [case:__] and [•T•]. This EF-movement triggers participle agreement (in general, plural masculine; plural feminine if *si* refers to a feminine

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[50]In section §3.3.9.1, I have shown in example (71-e) that *si* cannot be the direct object of a transitive verb. In the present derivation, *si* is merged as the internal argument in presence of a defective v. Moreover, *si* can be merged in the object position even with a transitive verb if v is defective, as the derivation of impersonal passives in the next section §3.3.9.5 will clarify. The incompatibility of *si* with the function of transitive object seems to be related to two aspects. First of all, impersonal *si* is incompatible with accusative case. We saw that *si* ends up with an unvalued case feature. Hence, it could be that *si* cannot receive case at all, and the problem with the transitive derivation is that accusative assignment fails. However, we also saw that nominative case assignment can fail without causing a crash in the derivation. The second problem, which seems to me the relevant one, is that if impersonal *si* is c-commanded by another DP, it is bound by it, and the impersonal interpretation disappears, resulting in a reciprocal/reflexive meaning. Therefore, impersonal *si* is incompatible not with the internal argument position, but rather with the dependent-case position (meaning a position that is c-commanded by another DP) for reason of binding. Cf. Alexiadou, Anagnostopoulou, and Schäfer (2015) for a similar analysis of expletive/anticausative *si* with respect to reflexive *si*. Cf. footnote 35 for further discussion.

group).

In (102) Voice_impers is merged in the structure. The clitic further moves to its specifier, driven by the [·D[π:_]·] feature on the head. The featural specification of the clitic is compatible with the requirement on Voice ([π:_]).

(101)

vP
├── *si*
│   [φ:_]
│   [case:_]
│   [·T·]
└── v'
    ├── v [Infl:_]
    └── VP
        ├── V
        └── <*si*>
            [φ:_]
            [case:_]
            [·T·]

(102)

Voice_impers P
├── *si*
│   [φ:_]
│   [case:_]
│   [·T·]
└── Voice_impers'
    ├── Voice_impers
    │   [Infl:_]
    │   [π:_]
    │   [·D[π:_]·]
    └── vP
        ├── *si*
        │   [φ:_]
        │   [case:_]
        │   [·T·]
        └── v'
            ├── v [Infl:_]
            └── VP
                ├── V
                └── <*si*>
                    [φ:_]
                    [case:_]
                    [·T·]
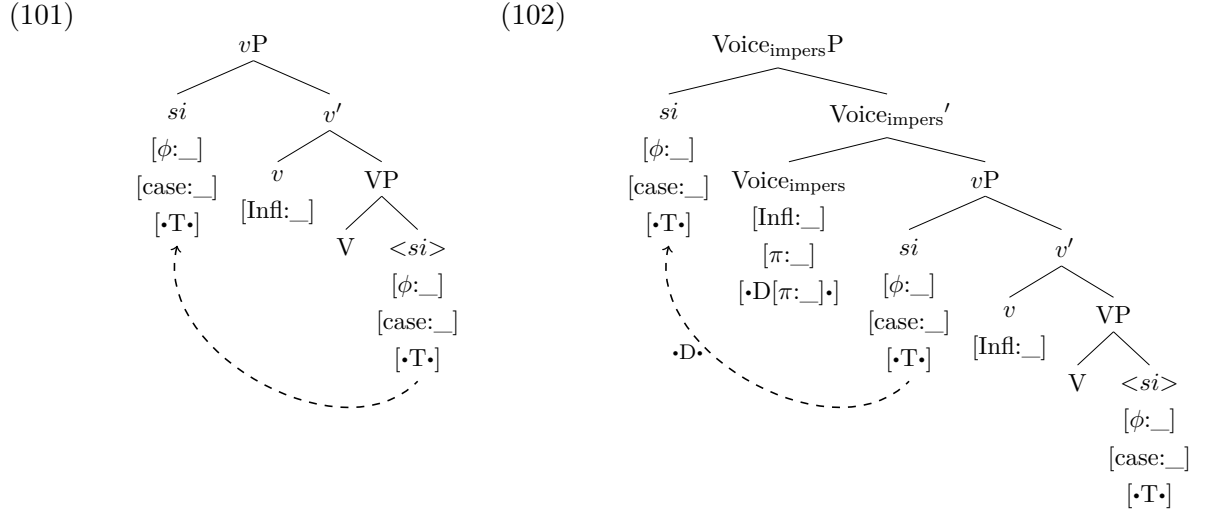
In (103), the head Perf enters the derivation. Perf checks the [Infl] feature on Voice_impers and agrees with it for π. However, no value is copied, leading to BE insertion at Spell-out.

(103)

PerfP
├── Perf
│   1:[uInfl:perf]
│   2:[uπ:_]
│   (a) Infl, (b) π
└── Voice_impers P
    ├── *si*
    │   [φ:_]
    │   [case:_]
    │   [·T·]
    └── Voice_impers'
        ├── Voice_impers
        │   [Infl:_]
        │   [π:_]
        │   [·D[π:_]·]
        └── vP
            ├── v [Infl:_]
            └── VP
                ├── V
                └── <*si*>
                    [φ:_]
                    [case:_]
                    [·T·]
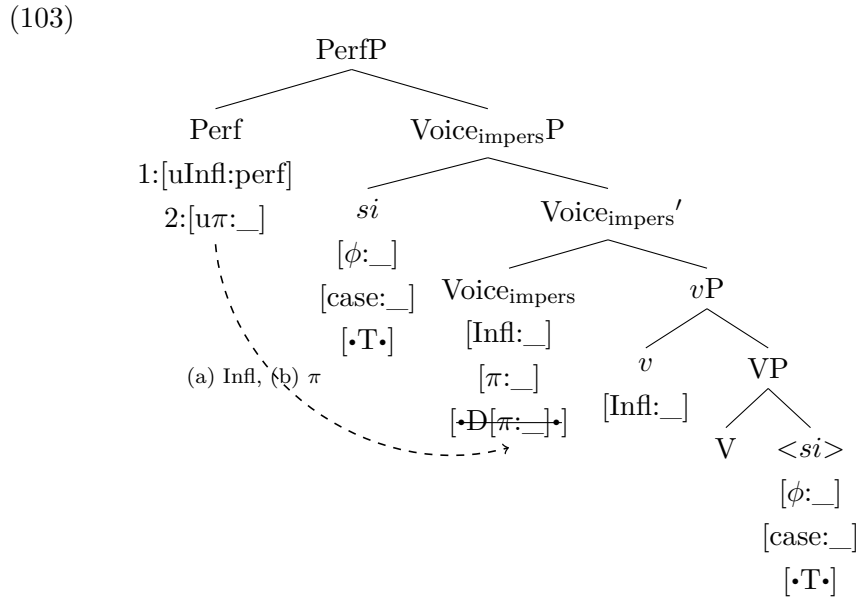
In tree (104), T is merged in the structure. The clitic incorporates into it. In addition, T cannot assign nominative case, since there is no possible goal in the structure. The impersonal *si* is the only DP in the structure, and it is not a target for case assignment from T because it is part of T itself. As far as φ-Agree is concerned, T agrees with Perf, which is the closest matching goal in the c-command domain of T. In this case, φ-Agree is

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not subject to Nested Agree, because the previous operation of case assignment has failed. Agreement with Perf does not lead to successful π-valuation. At Spell-out, the inflection on T will be realized by the elsewhere form third person singular.

(104)
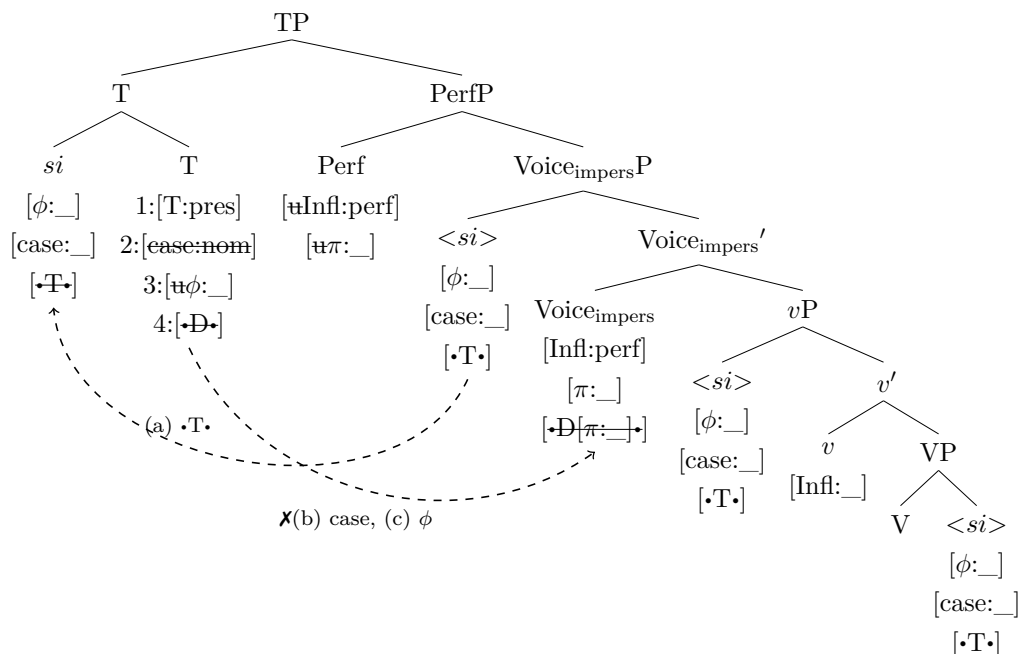
At Spell-out, the vocabulary entries for sentence (100) are as follows (I have omitted from the trees the adverbial 'early', which is an adjunct to Spec,v).

(105)   Spell-out

    a.   /presto/ $\leftrightarrow$ AdvP[$\sqrt{\text{EARLY}}$]

    b.   /partiti/ $\leftrightarrow$ v + Voice[Infl:perf][π:__] + V[$\sqrt{\text{LEAVE}}$]

    c.   /ɛ/ $\leftrightarrow$ Perf[π:__] + T[T:pres][ϕ:__]

    d.   /si/ $\leftrightarrow$ DP[ϕ:__][case:__]

To summarize, since unaccusative roots can be selected only by defective v, impersonal clauses with unaccusative predicates can only involve defective v as the complement of Voice$_{\text{impers}}$. This determines only one possible derivation, where participle agreement is due to movement of the clitic si across v, the auxiliary BE is caused by Agree between Perf and Voice$_{\text{impers}}$, and third person singular inflection is the result of Agree between T and Perf.

3.3.9.5 Impersonal passives

In Standard Italian, it is also possible to have passive clauses with an impersonal patient, as in (106).

(106)   Si=è   stat-i   lodat-i.
        impers=be.prs.3sg   be.prtc-m.pl   praise.prtc-m.pl
        'One has been praised.'

This possibility is expected if *si* can be merged as the internal argument of a transitive verb with a defective *v*, as in the case of passives. The derivation is shown in (107).

(107)
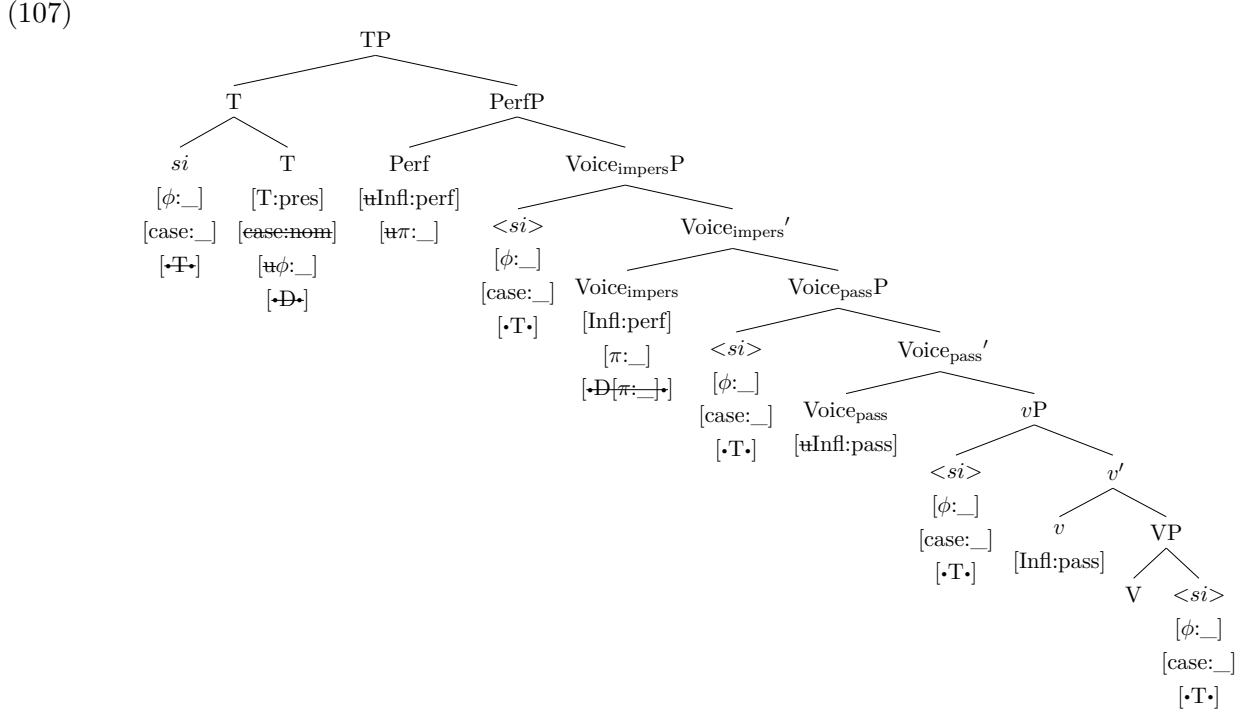
The transitive verb must select the impersonal argument *si* (cf. footnote 50 for discussion) and be selected by a defective *v*. The DP *si* moves to Spec,*v* because it needs to escape the phase domain (given its unchecked features), causing participle agreement. The *v*P is then selected by Voice$_{\text{pass}}$, and *v* acquires the value *pass* for the Infl-feature via Agree with Voice$_{\text{pass}}$, determining its realization as a passive participle. The clitic *si* moves to Spec,Voice$_{\text{pass}}$, leading to participle agreement also on the passive auxiliary *stat-i*.[51]

---

[51]Gender and number values (due to EF-movement of the clitic *si*) are located on the head Voice$_{\text{pass}}$, whereas [Infl:perf] is on the head Voice$_{\text{impers}}$. Voice$_{\text{pass}}$ is spelled out as a past participle with agreement even though it does not bear itself the feature [Infl:perf]. The past participle realization of Voice$_{\text{pass}}$ is possible because it bears [uInfl:pass], which corresponds to a passive participle, homophonous with the past participle. Moreover, Voice$_{\text{impers}}$ and Voice$_{\text{pass}}$ form a complex head. We have already seen a similar case in the derivation for impersonals with transitive verbs (section §3.3.9.2). There, the gender/number features are on *v*, but the Infl-feature is on Voice$_{\text{impers}}$. Still, the complex head V + *v* + Voice$_{\text{impers}}$ is realized as a past participle, given the VI in (89-b), repeated here in (i-a). Similarly, here *v* is spelled out as a passive participle, and the two Voice heads are spelled out as a unique passive auxiliary with perfect morphology due to [Infl:perf]; inflection on the participle is due to the ϕ-features on Voice$_{\text{pass}}$, given the VI in (108-b), anticipated here in (i-b), with detailed ϕ-features.

(i)   a.   /mandʒati/ ↔ *v*[#:pl,γ:m] + Voice$_{\text{impers}}$[Infl:perf][π:__] + V[$\sqrt{\text{EAT}}$]
      b.   /stati/ ↔ Voice$_{\text{pass}}$[Infl:pass][#:pl,γ:m] + Voice$_{\text{impers}}$[Infl:perf][π:__]

After this step, Voice$_{\text{impers}}$ is merged in the structure. The clitic *si* moves to its specifier, given the [·D[π:_]·] feature. Voice$_{\text{impers}}$P is then selected by Perf. Perf probes Voice$_{\text{impers}}$ for [Infl], and then for [uπ:_], resulting in failed π-valuation, and, consequently, in BE insertion. When T is merged, cliticization applies. Nominative assignment fails; T probes Perf for φ-features (Nested Agree does not apply because the first operation, nominative assignment, has not returned any result). The default third person singular on the auxiliary in T shows up because, as in the case of unaccusative impersonals, person valuation on T fails, since Perf bears unvalued an π-feature. At Spell-out, the unvalued φ-features on T are realized with the elsewhere form, third person singular.

The vocabulary entries for sentence (106) are as follows.

(108)   Spell-out

    a.   /lodati/ ↔ v[Infl:pass] + V[$\sqrt{\text{PRAISE}}$]

    b.   /stati/ ↔ Voice$_{\text{pass}}$[Infl:pass] + Voice$_{\text{impers}}$[Infl:perf][π:_]

    c.   /ɛ/ ↔ Perf[π:_] + T[T:pres][φ:_]

    d.   /si/ ↔ DP[φ:_][case:_]

3.4 Summary

In this chapter, I have developed a detailed derivation for auxiliary selection in different types of clauses in Standard Italian: transitive verbs, transitive verbs with a reflexive object, unergative verbs, unaccusative predicates, monoargumental verbs, passive constructions, transitive verbs with a reflexive indirect object, quirky verbs and impersonal clauses (combined with transitive, unergative, unaccusative, and passive verbs). The perfect auxiliary realizes a functional head Perf located between v and T. The selected allomorph spells out the result of person-Agree on the head Perf: if Perf has successfully copied a π-feature via Agree from another head, then the selected root is HAVE; if Agree has failed, then the elsewhere form BE is inserted.

Standard Italian is a language where the alternation between BE and HAVE for the perfect auxiliary depends on the argument structure. However, it is clear that in such a system auxiliary selection depends both on the featural make-up of the functional heads and on the features of the arguments. When the unmarked auxiliary BE emerges, it means that there is some kind of defectiveness in the structure. Either the inflectional head is defective (i.e., unaccusative v), or an argument is person-defective, for example reflexive pronouns that enter the derivation with unvalued person features. In the former case, Agree on Perf fails because of the absence of a matching goal in the c-commanded domain. In the latter scenario, Agree with a φ-defective item leads to a failure of valuation. The head Perf can access the π-information on v because of a principle on ordered instance of Agree, called Nested Agree (cf. chapter 2). This configuration results in cyclic Agree (Legate 2003) between Perf and the DP$_{\text{obj}}$, enabled by the mediation of v.

Auxiliary selection is not the sole morpho-syntactic phenomenon that characterizes the perfect tense. Indeed, overt morphological inflection can be realized on the past participle. In the next chapter, I propose an analysis of participle agreement that is compatible with the derivation of auxiliary selection developed in this chapter. The central idea is that participle agreement arises when there is some kind of defectiveness in the structure, which appears under the form of unchecked features. Participle agreement is the morphological reflex of syntactic successive cyclic movement, due to the defectiveness either of functional heads (in the case of the unaccusative object), or of arguments (in the case of clitic pronouns). Auxiliary selection and participle agreement are independent phenomena, although they are both reflexes of defectiveness.

4 Past participle agreement: the analysis

4.1 Introduction

The aim of this chapter is to develop an account of participle agreement that is compatible with the analysis of auxiliary selection argued for in this dissertation. In Standard Italian, past participles can bear overt inflection for gender and number, but not for person. Participle agreement is a type of "nominal Agree": it realizes those morpho-syntactic features that are normally found on nominal modifiers (gender and number), rather than on predicates (person). In fact, adjectival agreement is restricted to gender and number, excluding person; in contrast, verbal agreement targets person and number. It has also been proposed that the category of past participles is both verbal and adjectival (Embick 2000; Alexiadou 2001).

The past participle shows overt morphological inflection for gender and number in the following cases: with the unaccusative subject (1-a), with the accusative clitic object of a transitive verb (1-b), with a resumptive accusative clitic in the context of left dislocation (1-c), with the reflexive clitic as direct object or indirect object of a transitive verb (1-d,e), with the passive subject (1-f), with the theme of a quirky verb (1-g), with the object of a transitive impersonal clause (1-h), with the subject of an unaccusative impersonal clause (1-i), with the partitive clitic object of a transitive verb (1-j).

(1)   a.   Teresa è   uscit-a.
              Teresa be.PRS.3SG go.out.PRTC-SG.F
              'Teresa has gone out.'

        b.   Teresa l=ha   lavat-a.
              Teresa ACC.3SG.F=have.PRS.3SG wash.PRTC-SG.F
              'Teresa has washed her/it.'

        c.   La camicia, Teresa l=ha   lavat-a.
              the shirt   Teresa ACC.3SG.F=have.PRS.3SG wash.PRTC-SG.F
              'The shirt, Teresa has washed it.'

        d.   Teresa si=è   lavat-a.
               Teresa REFL.ACC.3SG.F=be.PRS.3SG wash.PRTC-SG.F
              'Teresa has washed herself.'

        e.   Teresa si=è   lavat-a   il   vestito.
              Teresa REFL.DAT.3SG.F=be.PRS.3SG wash.PRTC-SG.F the dress
              'Teresa has washed her dress.'

        f.   La camicia è   stat-a   lavat-a.
              the shirt   be.PRS.3SG be.PRTC-SG.F wash.PRTC-SG.F
              'The shirt has been washed.'

        g.   A Teresa   sono   piaciut-e   le   caramelle.
              to Teresa.DAT.3SG.F be.PRS.3PL like.PRTC.PL.F the candies
              'Teresa has liked the candies.'

> h. Si=sono mangiat-e le caramelle.
> IMPERS=be.PRS.3PL eat.PRTC-PL.F the candies
> 'One has eaten the candies.'
>
> i. Si=è arrivat-i in ritardo.
> IMPERS=be.PRS.3SG arrive.PRTC-PL.M in delay
> 'One has arrived late.'
>
> j. Ne=hanno lavat-e molte.
> of=have.PRS.3PL wash.PRTC-PL.F many.PL.F
> 'Of them, they have eaten many.'

Agreement on the participle is not present in these contexts: with the subject or object of transitive verbs (2-a), with the unergative subject (2-b), with dative arguments (2-c) (DPs and clitics; instead, the participle agrees with reflexive dative clitics, cf. (1-e)), with topicalized/focused DPs without resumption (2-d), with wh-phrases (2-e), with relative pronouns (2-f), with the object of a transitive impersonal clause (2-g) (in alternation with (1-h)).

(2) a. Teresa ha lavato la camicia.
     Teresa have.PRS.3SG wash.PRTC the shirt
     'Teresa has washed the shirt.'

  b. Teresa ha lavorato.
     Teresa have.PRS.3SG work.PRTC
     'Teresa has worked.'

  c. Alla ragazza, le=ho dato la torta.
     to.the girl DAT.3SG.F=have.PRS.1SG give.PRTC the cake
     'To the girl, I have given her the cake.'

  d. La camicia, Teresa ha lavato (non la giacca).
     the skirt Teresa have.PRS.3SG wash.PRTC not the jacket
     'The skirt, Teresa has washed it (not the jacket).'

  e. Quante torte hanno mangiato i ragazzi?
     how many cakes have.PRS.3PL eat.PRTC the boys
     'How many cakes have the boys eaten?'

  f. La camicia che ho lavato è asciutta.
     the shirt that have.PRS.1SG wash.PRTC be.PRS.3SG dry
     'The shirt that I have washed is dry.'

  g. Si=è mangiato caramelle.
     IMPERS=be.PRS.3SG eat.PRTC candies
     'One has eaten candies.'

What brings together all the instances of participle agreement in (1) is phrasal movement. In most of the examples in (1), the DP that controls agreement on the participle does not surface in its base position. Examples (1-g) and (1-h) seem to be an exception, since the participle agrees with the object (apparently) in situ, but note that the object is "special", since it bears nominative case and controls finite agreement on T. I will discuss these cases in section §4.5. If we now examine the examples in (1) (excluding (1-g) and (1-h)), they

all involve movement of the argument that controls agreement on the participle. In fact, given the assumptions of this dissertation, the unaccusative subject and the passive subject move for case assignment, whereas the clitics move to T because of a Merge feature. These are all instances of A-movement, namely movement triggered by case assignment, ϕ-Agree or Merge features (for the A vs. Ā distinction, cf. Mahajan 1990; Müller 1995; van Urk 2015; Safir 2019). Hence, the following implicational relation between movement and past participle agreement (*ppa*) can be drawn from the data.

(3)   a.   A-movement → ppa
       b.   no ppa → no A-movement

The generalization in (3) states that if an XP moves across the syntactic position of the participle because of reasons such as case assignment, Merge features, Agree features, then it triggers overt inflectional agreement on the participle (ppa). Similarly, if there is no overt inflection on the participle, then this implies that movement driven by a feature of the A-type has not taken place across the participle.

I exclude here all instances of Ā-movement, such as wh-movement, focus, topicalization, and so on, since they do not trigger participle agreement in Standard Italian.[1] Note also that the correlation in (3) does not say anything about Agree when nothing moves. We will see in section §4.5 that it is possible to have participle agreement also with constituents that seem to be in situ (cf. examples (1-g) and (1-h)). However, for the sake of simplicity, at this stage of the analysis I just assume that the implication in (3) holds and covers all cases of participle agreement.[2]

That participle agreement is dependent on movement has already been proposed by Kayne (1985, 1989a); Déprez (1998); Belletti (2005b, 2017); D'Alessandro and Roberts (2008), among others. However, some of these accounts (Kayne 1985, 1989a; Bouchard 1982; Branigan 1992; Friedemann and Siloni 1997; Belletti 2005a) are framed within a theory that is not accepted anymore for its mechanisms, such as Spec-head-agreement or a dedicated agreeing head (not fully compatible with the assumptions of this dissertation, couched in Minimalism). Other proposals (D'Alessandro and Roberts 2008; Belletti 2017; Longenbaugh 2019; Georgi and Stark 2020) make use of downward Agree between the probe on the participle head and the VP-internal argument, but they are not compatible

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[1] As I will discuss in section §4.3.5, in other languages the participle agrees when a constituent undergoes some types of Ā-movement. An example is relativization in French (Kayne 1989a: 85-86, Branigan 1992: 36).

(i)   les   chaises que   Paul a   *repeint   / repeint-es
     the chairs   that Paul have.PRS.3SG repaint.PRTC / repaint.PRTC-PL.F
     'the chairs that Paul has repainted'

[2] In this chapter, I provide a tentative analysis for all the problematic cases that seem counterexamples to (3) (sections §4.5 and §4.6). My aim is to propose an account that can explain the relevant data and is compatible with the analysis developed in this dissertation for auxiliary selection in root clauses and in restructuring. A deep discussion on the nature of movement and of participle agreement in all cases (for example, in reduced clauses) lies outside the scope of this dissertation.

with the present analysis of auxiliary selection.

For instance, D'Alessandro and Roberts's (2008) proposal cannot be integrated with my analysis of auxiliary selection, since it locates ϕ-features both on transitive and unaccusative v (or related projections), thereby undermining the featural distinction between different argument structures. In general, D'Alessandro and Roberts's (2008) approach seems to be incompatible with any analysis of argument-driven auxiliary selection, such as the one proposed later on by the same authors (D'Alessandro and Roberts 2010). In addition, it is also subject to more severe problems.[3]

The work by Georgi and Stark (2020) makes use of two independent mechanisms for generating participle agreement in French: resumption, and ϕ-agreement between past participle v and the internal argument in its base position. In this dissertation, I do not exclude that participle agreement may emerge from different syntactic processes, as I argue for Old Italian in section §4.7 and for some dialects in chapter 6. However, even though the analysis of Georgi and Stark (2020) might be on the right track for French, it cannot be applied to Italian participle agreement. First of all, it is based on the evidence (provided by Lahousse 2006, 2011) that in situ DPs controlling agreement are really in their base position (Georgi and Stark 2020: 23). However, Italian behaves differently from French: in situ controllers of agreement have some properties that show that they have moved from their base position, as I show in section §4.5.1. In addition, the evidence that French participle agreement does not pattern as a reflex of DP-movement cannot be tested for Italian, where there is no participle agreement with wh-phrases that can create dependencies across clause boundaries (Georgi and Stark 2020: 25). Hence, Georgi and Stark's (2020) analysis cannot be successfully applied to the Italian data. Moreover, it is incompatible with the analysis of auxiliary selection pursued in this dissertation (in fact, it considers a very simplistic analysis of auxiliary selection that does not work at all, cf. footnote on page 36 of Georgi and Stark 2020).

In this dissertation, I propose that past participle inflection for gender and number arises as a consequence of A-movement of a DP across the head that is spelled out as a participle, namely v. I argue that participle agreement spells out an *edge feature* (EF) on v. The edge feature enters the structure paired with a ϕ-probe. The inflection shows up because the ϕ-probe on the EF copies the features of the "to-be-moved XP". The appearance of past participle morphology is due to the value *perf* for the attribute [Infl] on v (Adger 2003).

The present analysis is fully compatible with the analysis proposed in chapter 3 for auxiliary selection and is in line with the idea that participle agreement and auxiliary selection are independent phenomena (Loporcaro 1998; Bentley and Eythórsson 2004; Belletti 2005b; Manzini and Savoia 2007; Legendre 2010). Even though both auxiliary

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[3]I share the view of Georgi and Stark (2020) about the shortcomings of D'Alessandro and Roberts's (2008) analysis, which are: (i) the crucial assumption that unaccusative v is not a phase, (ii) the existence of languages, such as French, where the verb does not move to v_{prt}, as it should under D'Alessandro and Roberts's (2008) approach, (iii) wrong predictions for Ā-movement to Spec,C, (iv) overgeneration based on the computation of traces/copies, (v) crucial use of derivational memory. I refer the reader to Georgi and Stark (2020) for a punctual discussion.

selection and participle agreement are instances of Agree, Agree applies on different heads and for different features. The main advantage of the present proposal with respect to other accounts of participle agreement that are similarly based on movement lies in the use of an already proposed technology, namely edge features, independently needed for successive cyclic movement. This allows to avoid the assumption of any further projection, such as AgrOP, that is activated by phrasal movement, or any spec-head configuration (Kayne 1989a; Belletti 2005a). Agree always applies under c-command, in accordance with the standard view of Agree in Minimalism.

4.2 Assumptions

4.2.1 Participle agreement is on the phase head v

Phases are chunks of syntactic structure that is cyclically sent to the two interfaces LF and PF (Chomsky 2001, 2008). They constitute stages of derivation where the syntactic items are sent to the interfaces by an operation called Transfer; consequently, they are no longer accessible to later mappings to the interfaces (Chomsky 2007: 16). I assume that every type of v is a phase (Legate 2003; Richards 2005; Müller 2010, 2011; Abels 2012; Heck 2016).[4]

Participle inflection is triggered by the presence of an unchecked feature on a DP that moves out of a phase domain. Hence, it is natural to relate it to a phase head, namely v. The choice of v as the locus for participle agreement, and not of a separate head, is due to minimalist reasons. In fact, v is independently realized as a past participle because of the feature [Infl]. I exclude the presence of other functional heads below v, such as AgrOP in traditional terms (Kayne 1989a). I also do not make use of a higher extra v for past participle inflection (D'Alessandro and Roberts 2010), since there is evidence that the locus of agreement must be below the subject position, i.e. Spec,v. In fact, past participle agreement cannot involve external arguments, as stated by Belletti's generalization (originally formulated by Belletti 2005b: 509). Since agreement requires c-command by the agreeing head, this generalization suggests to locate the head responsible for participle agreement in the VP/vP domain, as has been proposed for the VP-internal head AgrPstPrt (Friedemann and Siloni 1997; Belletti 2001a, 2005b). Here, I argue that this low agreement projection is not a version of AgrOP or AgrPstPrt, but it is indeed v.

4.2.2 Successive cyclic movement

Under the phase theory (Chomsky 2001), Spell-out applies cyclically (*cyclic Spell-out*). When the phase is built, the complement of the phase head is sent to Spell-out.[5] Given the Y-model of grammar, the portion of syntactic structure that has been sent to the

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[4] *Pace* Chomsky (2000, 2001, 2007, 2008), where unaccusative/passive v is not a phase, but only v* and C are considered as such.

[5] See Uriagereka (1999); Epstein and Seely (2002) for discussion of even smaller cyclic Spell-out domains.

interfaces is not accessible anymore for further syntactic computations. The PIC principle derives from this architecture of grammar.

(4)   *Phase Impenetrability Condition (PIC)* (Chomsky 2000: 108)
        In a phase α with head H, the domain of H is not accessible to operations outside
        α, only H and its edge are accessible to such operations.

The PIC, which directly follows from cyclic Spell-out, states that the domain (i.e., the complement) of a phase is opaque to any further syntactic operation outside the phase, whereas its edge (head and specifier) is not. If an item in the complement is not ready yet to be sent to the interfaces because it bears an unchecked feature, it should remain available for further operations outside the phase, in order to erase the unchecked feature. Hence, it should escape the Spell-out domain and move to the edge of the phase. Therefore, the PIC forces successive-cyclic movement via phase edges.

   The possibility of successive cyclic movement is exactly the reason why wh-objects are able to reach Spec,C without being trapped in the Spell-out domain of v. An example of wh-clause is in (5-a), whose underlying structure with the path of successive cyclic movement is represented in (5-b).

(5)   a.   What do you see?
        b.   [$_{CP}$ what$_i$ C[ʉwh] [$_{TP}$ do [$_{vP}$ t$_i$ you see$_j$ [$_{VP}$ t$_j$ t$_i$]]]]]]

In (5-b), the unchecked wh-feature moves first to the edge of v, so that it is accessible to higher heads, and then to its landing site Spec,C, once C with its probe [uwh] enters the structure.

   In this dissertation, I adopt a *feature-based* approach to successive cyclic movement (Chomsky 2001; Müller 2010; Abels 2012; Nunes 2019). Under the assumption that each instance of movement is necessarily feature-driven (Chomsky 1995), the intermediate steps of successive cyclic movement via the escape hatches of the phases (in example (5-b), movement of whP from the direct object position to Spec,v) must be triggered by an appropriate feature, which is generally called *edge feature (EF)*.

   Note, however, that edge features are not universally assumed as triggers for intermediate movement. In fact, if the assumption about all instances of movement as feature-driven is not retained, it is still possible to derive successive cyclic movement by the interaction of different principles. The accounts proposed by Franks and Lavine (2006); Bošković (2007); Stroik (2009) make use of some mechanisms that "expel" the unchecked feature out of the phase domain. These analyses can be considered *repel-based* approaches to successive cyclic movement. An example of repel-based analysis is the *agnostic movement* proposed by Franks and Lavine (2006: 265). The moving element bears (a) feature(s) which need to be "licensed". Movement to the left-edge is needed to avoid opacity and to allow subsequent visibility, in order to save the derivation. Here, the driving principle is a

last resort operation: at the end of each phase, any phrase with unvalued features must move to the left periphery of the phase in order to be located in the search space of a potential probe. I discuss this approach in more details in section §4.3.2. Similar strategies have also been proposed by Bošković (2007); Stroik (2009). Another similar proposal consists of *Phase Balance*: a phase counts as balanced if its phase head is inert (Heck and Müller 2000; Müller 2010). Similarly, successive cyclic movement without specific triggering features is achieved under *local derivational optimization*, where optimization with respect to a set of ranked and violable constraints is cyclically determined within local domains (Heck and Müller 2003).

My proposal for successive cyclic movement consists of a synthesis between the feature-based account and the repel-based approach: successive cyclic movement is triggered by an edge feature, which is inserted on the phase head if and only if there is in the phase domain an element that still bears some unchecked feature.[6]

4.3 The edge feature

I propose that past participle inflection is the Spell-out of a subset of ϕ-features that are present on the head v because of an edge feature (EF). The EF is a type of Merge-feature that triggers successive cyclic movement (Chomsky 2001, 2007, 2008; Müller 2010; Abels 2012). The function of this EF is to create an escape hatch, i.e. a specifier of a phase head, when a XP contained in the complement of the phase head must move out of the Spell-out domain because it bears some features to be checked.[7] Edge features have been already proposed as a technology to trigger intermediate movement steps, but the debate on their nature is still on-going (cf. for example the question whether the EF should be lexically encoded on items such as wh-phrases or on the phase heads, discussed by Nunes 2019).

In this dissertation, I propose that the edge feature is not an inherent feature, but is instead inserted on the phase head.[8] I also propose that the EF not only consists of a

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[6]As will become clear later on in this chapter, in my proposal EF-insertion is not due to a last resort mechanism. The EF is mechanically inserted whenever there is an unchecked feature in the complement of the phase head.

[7]Clearly, I assume the possibility of multiple specifiers. In particular, when a head projects, it creates a single specifier position if it introduces a new argument (for instance, transitive v). Other specifiers can be created by the EFs, where other elements can land, while moving out of the phase. Each element that moves has the consequence of creating an extra specifier.

Blocking effects for movement to a target position (for example, when two items compete for the same specifier) exist and could show that multiple specifiers are not possible. However, they can be due either to cross-linguistic parametrization, or to inherent features and not to inserted ones (for example, [•D•] on v creates only one specifier, whereas EFs can create more than one).

[8]There is a general, underlying question about what *feature insertion* technically is and if this can be subject to the same constraints to which Merge is subject. Feature insertion is not a canonical instance of Merge. A single feature is not a head (a head being a bundle of features of various types, among which categorical features). Moreover, its insertion does not discharge a Merge feature [•EF•] on the head on which it is inserted. In addition, this operation does not create a new syntactic object containing two merged heads or phrases in a sisterhood relationship. I consider feature insertion to be a Merge operation between a single feature and a maximal projection, triggered by an unchecked feature within the maximal projection. The result of this operation is the same maximal projection with one more feature on it and on

Merge feature, but also of an Agree feature for gender and number [uγ:__, u#:__]. Instead of being deleted when discharged (as in Chomsky 2001, Müller 2010: 40), the φ-Agree component of the EF leaves a copy of φ-features on the phase head. Exactly this set of φ-features is spelled out as morphological inflection on the past participle. According to my proposal, the syntactic representation of the edge feature is as follows.

(6)   EF: [uF] ≻ [u#], [uγ] ≻ [•F•]

As (6) shows, EF consists of an array of ordered features: an Agree feature, a φ-probe for gender and number, and a Merge feature. First of all, movement to the edge of the phase requires agreement with the unchecked feature. The [uF] component of the EF establishes an Agree relation with the XP that must be moved. This operation simply matches the type of feature that is unchecked, without any consequence for Spell-out. The function of this [uF] feature is to establish agreement, before any valuation or structure-building operation applies (for a similar mechanism, cf. the step of *Agree-Link* in the framework proposed by Arregi and Nevins 2012). After this operation, Agree for gender and number applies ([u#], [uγ]). After the operations between the head and the complement, the Merge feature ([•F•]) moves the XP to the specifier of the phase head.

In (6), F stands for a generic feature, but the probe is actually specified for the kind of unchecked feature that has triggered its insertion. If there is an unchecked *case* feature in the complement of the phase, the EF has the shape of [u[ucase:__]], if there is a clitic, the EF is [u[•T•]], and so on. In other words, EFs are category specific (Müller 2010: 38,58). This *match-component* of the edge feature is needed because it avoids minimality effects for the following φ-probes, due to Nested Agree. The [uF] part creates the Agree-Link that is exploited by the successive φ-probing operation. This has the consequence that [u#], [uγ] target the to-be-moved element and not simply the highest c-commanded item that bears φ-features.

For the sake of simplicity, we can also assume that the EF is inserted as a flat probe, whose components are not ordered one with respect to the other. In this simplified version, the EF has the following structure.

(7)   EF: [•F•], [u#:__, uγ:__]

Here the bullet feature creates an extra specifier at the edge of the phase, whereas the Agree features probe the φ-features of the moving item.[9] Whatever analysis of the EF is

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its head. Cf. section §4.3.4.2 for details.

[9]Note that in version (7) the two operations must happen simultaneously, since both Agree and Merge requires c-command. In (7), the EF is a kind of composite probe where the two components must be fused together, as has been proposed by Coon and Bale (2014). This "fused" EF must target the to-be-moved element both with its Merge component and with its φ-probe. In general, it could be the case that inserted features can only be fused probes, since they have to enter the derivation as a single bundle of dependent features, differently from inherent features. In any other analysis with independent probes, the φ-probes would be prone to minimality effects. Hence, either the two components are fused together as in (7), or they are ordered as in (6).

adopted, either as a flat, fused probe or as an ordered probe, the main idea is that ϕ-Agree happens downwards under c-command and targets the element that will move.

Under this proposal, Agree features are involved in movement operations and precede them. This may suggest an Agree-based account of movement. Even though I do not intend to provide an analysis where each instance of Move should be preceded by a corresponding instance of Agree, it might be the case that this is valid for intermediate movement, since the EF category must correspond to the type of unchecked feature and the correspondence between features finds a natural implementation in the operation Agree. It could also be the case that the precedence of Agree over Merge is valid for Standard Italian in general. As we saw in the previous chapter, all heads perform the Agree operations as first, then they discharge the Merge features (cf. analysis of auxiliary selection, where Agree probes operate before specifier-building features, and how this follows from the Strict Cycle Condition). Whether the precedence of Agree over Merge features is distinctive of EFs or is language-specific, it gives the special order of probes on the EF in (6).

4.3.1 Timing of EF-insertion

The edge feature is not inherent, but it is instead inserted on the head when needed, i.e. when the phase head c-commands an unchecked feature. If the complement of the phase head contains a feature that has not been checked yet (typically, [case:_] for the unaccusative object, [•T•] for clitics), then the phase head receives an edge feature that can extract the unchecked feature, with consequent pied-piping of the whole phrase.

I argue that the EF is inserted on a phase head when all the operations triggered by the head have been exhausted. With respect to the timing of insertion, this proposal is in line with the idea of edge features originally developed by Chomsky (2000: 109), (2001: 34). There, EFs (called EPP-features) are assigned once the phase is completed. Instead, my approach differs from Müller's (2010). Under his proposal, EFs can be added only as long as the phase head is still active. The exact timing of insertion is language specific, but it must precede the construction of the specifier build by external Merge or by a final movement step (Müller 2010, 2011). This timing is due to the Strict Cycle Condition, repeated here again.

(8) *Strict Cycle Condition (SCC)* (Chomsky 1973: 243)
Within the current cyclic domain α, no operation may exclusively affect positions within another cyclic domain β that is dominated by α.

According to Müller (2010), if the EF is inserted on the head X only when the phase is completed, then this insertion violates the SCC when the XP contains a specifier (for example, in the case of transitive vPs).

The main reason why I argue that EF-insertion should be the last operation on a phase head is because of reflexive constructions. Recall that in this case the participle agrees

with the reflexive clitic object, as shown in (1-d), repeated here again.

(9)   Teresa si=è   lavat-a.
         Teresa REFL.ACC.3G.F=be.PRS.3SG wash.PRTC-SG.F
         'Teresa has washed herself.'

Since the clitic triggers ϕ-agreement on the participle, it must bear valued ϕ-features. The clitic receives its ϕ-features from the external argument via binding. Hence, the external argument must be merged before the EF is inserted. In contrast, if the EF were inserted before the introduction of the external argument, the ϕ-probe on the EF would not have copied any value from the clitic, which has not been bound yet. The necessary conclusion in order to derive participle agreement in (9) is that the EF must be inserted after the external argument has been introduced and has bound the clitic.[10] However, under this ordering, EF-insertion seems to violate the Strict Cycle Condition, as pointed out by Müller (2010). I will explain at the end of this section (cf. section §4.3.4.2) how I deal with the Strict Cycle Condition. My conclusion here is that EF-insertion happens after all operations on the head have been performed.

4.3.2 Edge features and defectiveness

In this dissertation, I argue for a "defectiveness-based" approach to participle agreement: it is the presence of unchecked features moving across the participle that causes morphological inflection on it. A similar proposal has been offered by Franks and Lavine (2006: 265). In Lithuanian object shift constructions, the object occurs in preverbal position and receives dative, genitive, or nominative case. The element that moves bears a case feature that needs to be valued. Consequently, it is displaced to the left-edge of the phase in order to remain visible for the higher heads. The reason for movement is not case checking itself, but it is rather the avoidance of opacity, which would lead to a derivational crash. Hence, movement is motivated by some deficiency in the feature inventory. A similar approach is offered by Bošković (2007), who argues that the uninterpretable feature on the moving element functions as a probe that needs to be licensed.

     I propose, similarly, that it is the defectiveness of the item that drives its movement to

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[10]In this dissertation, I assume that reflexive clauses have the same syntactic structure as transitive clauses (for similar approaches, cf. Reinhart and Siloni 2004, 2005; De Alencar and Kelling 2005; Doron and Hovav 2007; Schäfer 2012; Sportiche 2014; Alexiadou, Anagnostopoulou, and Schäfer 2015). Hence, I take the external argument of reflexive predicates to be introduced in Spec,v. Note that it has also been proposed that the DP$_{sbj}$ in reflexive clauses is an internal argument, instead of an external one. The unaccusative analysis of reflexives, proposed by Kayne (1975); Marantz (1984); Grimshaw (1990); Pesetsky (1996); Sportiche (1998); Embick (2004) (among others), would solve the issue of the exact timing of EF. In fact, the DP argument (which bears valued ϕ-features) is moved by the EF out of the direct object position (and the auxiliary BE is inserted because v is defective under the unaccusative analysis). However, since the reflexive clause has transitive semantics, and the version with the reflexive phrase *se stess-o/-a/-i/-e* behaves as a transitive clause (and the same can be said in other languages, such as German), I prefer to reject the unaccusative analysis of reflexives (cf. also section §3.3.2 in chapter 3). Moreover, the problem given by the SCC not only affects the process of EF-insertion, but also the EF-probing, which would not be solved even under the unaccusative analysis of reflexives. Cf. section §4.3.4.2 for further details.

the left-edge of the phase, in order to remain located within the search space of a potential probe. However, I argue that this need of the deficient item translates into edge feature insertion, rather than directly into its movement to the edge of the phase. This movement is feature-driven, and it is not a last resort operation (differently from Franks and Lavine's (2006) analysis). The derivational algorithm is as follows.

1. A XP[uF] is in the phase domain,

2. An EF is inserted on the phase head,

3. EF agrees with XP[uF],

4. EF agrees with XP[ϕ],

5. EF moves XP[uF] to the edge of the phase.

The intermediate step of EF-insertion instead of immediate movement to the edge (as in Franks and Lavine 2006) is needed for different reasons. First of all, in Minimalism all operations should be feature-driven. Secondly, in this dissertation I adopt the possibility of failed Agree (Béjar 2003; Preminger 2014), which makes it impossible to resort to derivational crashes. Failed Agree must be a possibility because there are cases where the lack of a relevant goal does not lead to ungrammaticality. An example taken from this dissertation is the realization of the perfect auxiliary in unaccusative clauses. The person probe on Perf cannot find any matching goal in the c-command domain. Nonetheless, the derivation does not crash, and the elsewhere form BE is inserted at Spell-out.

Next to these theory-internal motivations, I think that evidence in favor of edge features comes exactly from overt morphological inflection on the participle in Italian and from other, similar reflexes of A- or Ā-movement in other languages, such as extraction markers (for a survey of movement-related morphology, cf. Heck and Müller 2000; van Urk 2016; Georgi 2019). When successive cyclic movement leaves a sign in the form of morphological agreement, there must be a feature responsible for this. These overt signs of intermediate movement have been used to argue that movement is driven by feature checking by Chomsky (1995); McCloskey (2002); Abels (2012); Georgi (2014); van Urk (2016), among others. For instance, Bruening (2001) has argued that participle agreement in Passamaquoddy is caused by intermediate movement. In this language, Ā extraction across a verb optionally triggers participial agreement on the verb. This is analyzed as parasitic agreement resulting from the movement to the edge of the phase v (Bruening 2001: 209).

4.3.3 Edge features and Agree on Perf

Another consideration concerns the interaction of the EF with auxiliary selection. We saw in the previous chapter (cf., for instance, sections §3.3.2, §3.3.4) that BE is the selected allomorph when the head Perf has not found any person feature value in the syntactic structure. A question that may arise is why the presence of an edge feature (and, in

particular, its ϕ-probe component) on v does not feed Agree on higher heads. The answer to this question is straightforward and has to do with the kind of features involved. Even though the EF brings a subset of ϕ-features on v, namely gender and number, it does not contain person, which is the goal for Agree on Perf[uπ:__] (and on T [uπ:__],[u#:__]).

This is valid under the assumption that ϕ-features are not organized in entailment relationships. If, in contrast, a more specific ϕ-feature such as gender entails the presence of the higher node person, then the gender and number of the edge feature would be able to satisfy the π-probe on Perf. In this dissertation, I assume that the person feature is independent of the gender and number feature. Hence, a probe for person (as the one on Perf) cannot be satisfied by a gender or number feature.

This effect has been called *Relativized probing* (Béjar 2003; Béjar and Rezac 2009; Nevins 2007; Preminger 2014): if the probe is specified in such a way that it can only be valued by a certain type of ϕ-features, it can skip other items that do not bear the matching feature, until it finds the feature of the right complexity.[11] Hence, the EF cannot influence the probe on Perf because they target different features, which do not stand in any entailment relationship.

4.3.4 Some controversial points

Let me now discuss three theoretical issues for the present analysis, namely the interaction with the *Inclusiveness Condition*, the *Strict Cycle Condition* and *failed Agree.*

4.3.4.1 The Inclusiveness Condition

The Inclusiveness Condition (Chomsky 1995, 2000, 2001) prescribes that anything that was not contained in the input in the numeration can be added in the output. This is a general problem with feature insertion and does not concern in a particular way the present analysis. I follow here Müller (2010: 38): the problem can be circumvented by assuming that the Inclusiveness Condition is possibly violable. A last resort principle requires that every movement is feature-driven. Hence, movement out of the phase domain, which is necessary because of the presence of unvalued features, can only take place if a relevant triggering feature is inserted, although under a violation of the Inclusiveness Condition.

An alternative solution is to consider phase heads as bearing already in the numeration an edge feature that can be used when needed. Note, however, that this would imply either a single EF for multiple movements (meaning that the Merge component of the EF

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[11]Generally, the approaches that make use of Relativized probing adopt a feature geometry with entailment relationships, with the result that a gender feature may lead to partial agreement on a person probe because gender hierarchically implies person. In this dissertation, I do not assume any entailment relationship within the different types of ϕ-features. However, even under a feature geometry approach where person is a higher node with respect to gender, with the consequence that a gender value is able to stop a person probe, the result of Agree on Perf would not change, since the only way in which Perf would be spelled out by the more specific allomorph HAVE is by bearing a valued person feature. Therefore, for the purpose of auxiliary selection, both failed Agree under the lack of a person feature on v and partial Agree with the gender/number component of EF on v lead to the same result.

is not discharged when used, in a similar way to a probe subject to Multiple Agree), or a non-finite set of multiple EFs on the head (possibly reduced by some kind of economy computation in the numeration).

4.3.4.2 The Strict Cycle Condition

The second problem is the violation of the Strict Cycle Condition (SCC) (Chomsky 1973: 243) that I have already briefly discussed in section §4.3.1. This principle states that within the current syntactic domain it is not possible to apply an operation to two positions α and β that are contained in another domain that is dominated by the current one (i.e., a smaller sub-domain that excludes the current active node). All operations must apply at the root of the current cyclic node.

The discussion on the SCC depends on what constitutes a cyclic domain. My assumption here is that every node constitutes a cyclic domain on its own. If the edge feature is inserted as the last operation on the head (after v has discharged its structure building feature [•D•], introducing the external argument), the current cyclic node for EF-insertion is the maximal projection vP, which is the highest domain. The violation of the SCC arises because the EF establishes a relation between the head and the complement with the exclusion of the specifier. In addition, not only EF-insertion, but also the operations triggered by the subparts of EF (Agree for the unchecked feature, Agree for gender and number, Merge of the unchecked feature to the edge of the phase) violate the SCC.

There are different strategies that can solve the problem of EFs in accordance with the SCC. I argue that inserted features, such as the edge feature, are merged on the maximal projection XP and then project on the head X (F. Heck, p.c.). My proposal is as follows. Since the EF is inserted when the vP is built, and not when v enters the derivation, I argue that the EF is inserted on the XP, and not on the X head. Hence, the EF is located on the vP. This is in accordance with a strict interpretation of the SCC, since it involves the maximal projection vP, which also contains the specifier position and is the current active node. The other ingredient of this proposal is *feature projection*: the features of the maximal projection are shared by the head.[12] The principle that gives such mechanism is as follows.

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[12]Feature projection is generally considered as a consequence of Merge under Bare Phrase Structure (BPS, Chomsky 1964). I have already discussed in footnote 8 and in the present section the particular nature of the operation of feature insertion, which is not a canonical instance of Merge. Moreover, this type of feature projection (from the maximal projection to the head) works in the opposite direction with respect the operation assumed by BPS (from the head to the maximal projection). As fas as the assumption of Bare Phrase Structure is concerned, it leads to wrong predictions for auxiliary selection (cf. section §2.4.4 in chapter 2 for discussion). It also weakens the SCC: if the head is equal to the maximal projection, then the introduction of the external argument in Spec,v would not have to follow π-probing because of the SCC, since the maximal projection would always be involved in every operation performed between the head and the complement with the exclusion of the specifier. Given the fact that automatic feature projection as in BPS should be avoided (for the reasons that I have just mentioned), and given that EF-insertion is not standard Merge, it could be the case that the EF, it being an inserted feature, must be merged on the maximal projection and be simultaneously present on the head, differently from inherent features. Hence, not all features are subject to downward feature projection, but only inserted features are.

(10)   *Downward feature projection*
         If a feature is merged on a XP (feature insertion), then it must also be present on
         the head X.
         [•F•] + XP = XP[F] = X[F]

After the EF is inserted on XP, it automatically projects on X, from where it can be
discharged. Everything that happens now on X is also represented on XP. Since the root
node XP is involved, there is no violation of the SCC. These steps are exemplified in (11).

(11)   insertion of EF on XP ≻ downward projection of EF on X ≻ discharge of EF
         within XP

The reason for feature projection is twofold. The presence of the EF on the head X (even
though it is inserted on the maximal projection XP) is needed because the EF must
c-command the downward domain as a requirement of Agree. Moreover, the result of EF-
Agree must also be represented on the head, since the vocabulary entry that spells out the
morphological inflection on the participle substitutes a terminal node and not a maximal
projection. Hence, the EF is inserted on XP and projects on X. The maximal projection is
always involved, even when the head probes the complement with the exclusion of the
specifier, because this operation is simultaneously represented on the root XP.

The drawback of this analysis is that feature projection must be downward, in contrast
with the bottom-up nature of derivations assumed in Minimalism. However, I would like
to argue that if a feature is located only on the maximal projection XP, then it must be
represented at the same time on the head X, in order for it to be active. Downwards
projection applies only to inserted features as a way to make them participating in the
derivation. In other words, feature insertion consists of two subsequent processes: Merge
of a feature on the current active domain, and activation of the feature on the head that
projects the current active domain (because the feature needs to be represented on a head
in order to be discharged).

To sum up, the insertion of the EF on the maximal projection XP and its projection
onto the head X solves the SCC problem. This technical solution does not put an end
to the debate around the Strict Cycle Condition. In general, many phenomena seem to
involve a violation of the SCC. If a head X attracts two different categories A and B via
the structure building features [•A•] and [•B•], once it has created the first specifier by
internally merging one of these two, then it should not be able to attract anymore the
second category. Hence, the discussion on the SCC is very controversial and does not find
a clear and conclusive solution.

In this dissertation, I adopt this solution for the SCC-related problem created by EF-
insertion. Let me know briefly discuss some alternatives. I have already mentioned that
the EF could be inserted before the specifier is built, as in Müller (2010: 44). However,
this solution leads to the wrong predictions for reflexive clauses, as I have explained in

section §4.3.1. More importantly, this approach cannot resolve the violation of the SCC introduced by the discharge of the EF. Hence, it could also be the case that EF-insertion is performed before the introduction of the specifier, but at least EF-Agree must follow the introduction of the external argument.

Another possible explanation consists of the proposal that EFs are inserted before the introduction of the external argument, in accordance with the SCC, but they do not have to be discharged immediately. This could follow from a general principle that forces inherent features to be dealt with first, due to the process of feature insertion. Let us say that features are organized on a stack as Müller (2010) has proposed. If the stack has two open ends, if we insert a feature at one end, and if the features are discharged starting from the other end, it follows that inserted features must wait in the queue. The EF is inserted before the specifier is built, but it has to wait according to its position on the stack. This account differs from Müller's (2010), where the EF is inserted and immediately discharged.

However, if EF-insertion does not violate the SCC, EF-Agree seems instead to violate it. This can be avoided if the EF inserted on the head is represented on the maximal projection, in a similar (although in opposite direction) fashion to what I have just proposed above in (11). The ordering of operation for a transitive v whose complement contains a clitic to be raised is as follows.

(12)   insertion of EF on X $\succ$ introduction of external argument $\succ$ projection of EF on XP $\succ$ discharge of EF $\succ$ movement of the clitic

If the problem of downward feature projection disappears in this account, due to the fact that feature projection is upwards, there is still a severe problem: only EFs should project on the root, otherwise the SCC is weakened. This is quite counter-intuitive, since the inherent features should be those that can project, if any. Hence, I prefer to adopt the first solution that I have sketched in this section, represented in (10) and (11).

To conclude, as far as the Strict Cycle Condition is concerned, I propose that edge feature insertion happens at the level of the maximal projection after all the operation-inducing features on the head have been discharged. The head and the maximal projection are simultaneously involved because of downward feature projection of the inserted feature.[13]

4.3.4.3 Failed Agree

The last issue that I would like to address is twofold: it concerns the lack of interpretable or valuation as a trigger for EF-insertion, and the lack of valuation as a possibility allowed by failed Agree.

With the term *uninterpretable*, I do not refer to the process of interpretation at the

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[13]In footnote 16, I sketched the idea that the EF is not an inserted feature, but rather a head itself (F. Heck, p.c.), as represented in (i).

(i)

interfaces in narrow terms, but rather to the activation of a feature in the syntactic derivation (cf. section §2.3.1 in chapter 2 for discussion). The uninterpretability of a feature, expressed through the diacritic [u-], indicates that the feature can trigger an operation, but it has not done it yet. A feature is checked when the operation triggered by that feature is carried out, with the result that so-called uninterpretability is erased from the structure and the constituent that bears that feature can undergo Spell-out, when the phase is completed. However, the operation itself does not have to be successful in order for the derivation to be well-formed. Valuation and interpretability are independent conditions (Pesetsky and Torrego 2007).

This assumption raises the following question. Why is an operation not carried out at the point when its conditions are not met yet, with the aim of eliminating the uninterpretability of the triggering feature before the phase is completed and, consequently, preventing edge feature insertion? In other words, the question is why a feature such as [·T·] or [case:__] does not start probing before the phase is completed, thereby becoming inactive due to the completion of the operation it triggers. This could be an option, if valuation is not the aim of the operation itself. The relevant issue here concerns the inventory of features and operations. Which kind of features can fail an operation without causing the derivation to crash? Which kind of operations must be successfully carried out, or else the derivation would crash?

Let us start from Agree features. A feature of type [uF:__] is a probe that has not been discharged yet. Assuming that EF-insertion is the last operation performed on a XP, it can never be the case that a feature [uF:__] on X has not been discharged yet. Hence, [uF:__] is always discharged before EF-insertion. A feature of type [u̶F:__] is a probe that has been discharged, but has failed to copy a value. In this dissertation, I assume that failed Agree is possible (cf. section §2.3.1 in chapter 2, and the analysis of auxiliary selection of unaccusative in chapter 3). As long as the operation is carried out, the uninterpretability goes away and it does not really matter if the operation has returned a value or not. Therefore, the "outcome" of an operation cannot be considered as a signal for its success. Hence, an unvalued feature of the shape [u̶F:__] (in case Agree has
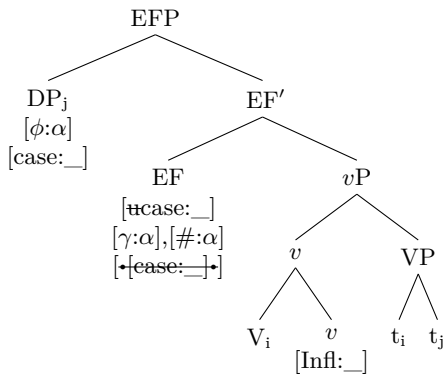
This approach to edge features would solve the problem given by the Strict Cycle Condition. In this dissertation, I do not develop this idea, but I leave it for further research.

failed to return a matching goal) does not require EF-insertion, in the very same way as [u̶F:α] does not. As far as unvalued features are concerned, such as [Infl:__] on v or [ϕ:__] on reflexive clitics, they are lexical properties of the heads and are inert features (as the lack of the prefix $u-$ shows). Hence, they do not trigger EF-insertion.

If failed Agree is an option for Agree-probes, why can the same not be said for the unchecked features that trigger EF-insertion (i.e., [case:__], [•T•])?

I propose that a feature such as [case:__] is different from an Agree probe [uF:__], as the u-prefix highlights. I said that [u-] is a diacritic that makes a feature an active participant in the derivation. If a feature is marked as such, it is an active feature that scans its c-command domain. In contrast, [case:__] is not active, in the sense that it cannot initiate an operation on its own: it cannot scan its c-command domain searching for a case value. Hence, it cannot be discharged without a case assigner being in the structure, and consequently it cannot be discharged in advance, in order to avoid EF-insertion. Therefore, an unchecked case feature triggers EF-insertion. Even though case assignment can be considered an instance of Agree, an unchecked case feature is not a lexical property of a head, and it must receive a value, if possible. [case:__] cannot start an operation, but needs to be the target of the operation of case assignment, differently from [Infl:__] or [π:__]. As far as the corresponding feature on the case assigner is concerned, a feature such as [ucase:x] must be discharged before the edge feature is inserted, given that EF-insertion is the last operation (cf. above discussion for [uF:__])

Instead, a feature such as [•T•] can initiate Merge. However, it cannot search its c-command domain. This type of feature remains inactive until an item of the right category is selected from the numeration. As is the case for selectional features involved in external Merge, they are discharged by Merge once two subtrees are put together, but they do not search the c-command domain. In other words, [•T•] behaves as [case:__].

Hence, the structural conditions for an operation must be met in order for the operation to be carried out. In the case of Agree, the c-command requirement is automatically satisfied because the position of the feature c-commands a portion of syntactic structure (unless the Agree-feature is located in the internal argument position). In the case of Merge-features that trigger internal Merge, the mergee must be in the structure together with the merger and must be c-commanded by it (for external Merge, it works of course differently). The feature [•T•] of clitics, although able to start an operation, cannot be discharged before T enters the structure, with the consequence that it is not possible to avoid EF-insertion at the vP level.

My proposal highlights here a difference in the status of various operations, as far as valuation and activity are concerned. The necessary conclusion is that Agree is different from case assignment and from checking of the clitic-feature [•T•] (and Merge features in general). Unvalued case and non-discharged Merge features trigger the insertion of edge features, while an unvalued probe cannot do so because of the possibility of failed valuation. In this dissertation, I have already highlighted some other differences, for example defective

intervention, which affects Agree, but does not concern case assignment. The provisional conclusion of this discussion is that there is a deep difference between failed valuation in Agree and unchecked features in general.

4.3.5 $\bar{A}$-movement does not trigger participle agreement

We saw that in Standard Italian only instances of A-movement trigger overt morphological inflection on the participle, whereas other kinds of movement, such as relativization, wh-movement, topicalization, do not give rise to such effects (cf. examples (2)). This fact can be explained if EFs are categorically specific (Müller 2010; Abels 2012; Georgi 2014; Heck 2016) and differ with respect to the ϕ-probes.[14]

The idea of having categorically specific edge features allows to distinguish between A/$\bar{A}$-movement. EFs that trigger $\bar{A}$-movement consist of the categories EF[wh], EF[top] (respectively, for wh-movement and topicalization), and so on; EFs that trigger A-movement are of the category EF[case:__], EF[•T•], and so on. The further implementation now consists of thinking that different types of EF can have different compositions. We saw that EFs for A-movement contain three parts: an Agree probe for the relevant category, a ϕ-Agree probe and a Merge feature that builds the specifier. I propose that in Standard Italian EFs for $\bar{A}$-movement lack the ϕ-probes. The difference between the two classes of features is represented in (13), where F_A are features such as [case], [T], while $F_{\bar{A}}$ are [wh], [top], [foc].

(13)   *Standard Italian*
        A-EF: $[uF_A] \succ [u\#], [u\gamma] \succ [•F_A•]$
        $\bar{A}$-EF: $[uF_{\bar{A}}] \succ [•F_{\bar{A}}•]$

The featural inventory in (13) explains why in Italian an $\bar{A}$-moved item does not trigger gender and number agreement. $\bar{A}$-EFs, as a lexical property of Italian, lack the ϕ-probes that come together with A-EFs.

The cross-linguistic variation can be due to the various components of EFs.[15]   For

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[14]A difference between different types of EFs has been already proposed by Georgi (2014: 236). Different EFs allow to distinguish between intermediate topicalization and intermediate relativization (which lead to different intervention effects for Agree). Here is an example of extrinsic ordering of features (among which categorically specific edge features) proposed by Georgi (2014: 236).

(i)   Order of features on T in Standard Italian:
       $[•cl•], [EF(top)] \succ [•D•] \succ [EF(rel)]$

Moreover, the use of different types of EFs for implementing the difference between A- and $\bar{A}$-movement has already been suggested by Abels (2012: 59), and Heck (2016: 48-49).

[15]In Standard Italian, there is a correlation between EF and ϕ-probes: A-EF with ϕ-probes on the one hand, and $\bar{A}$-EF without ϕ-probes on the other hand. This seems not to be the case in French and Passamaquoddy. Looking at French in (14), both case-EFs and wh-EFs contain ϕ-probes. This could show that EFs must be categorically specific, but this specification does not map to the A- versus $\bar{A}$-distinction. Under this view, the symmetry of the featural inventory of Italian in (13) is just an accident. However, French does not necessarily prove that the correlation between the type of movement and the composition of the EF does not hold anymore. It could also be the case that in French wh-movement and relativization

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example, French behaves similarly to Italian, but in addition it allows for agreement with wh-phrases and relative phrases (Kayne 1989a; Branigan 1992; Belletti 2005b). This is achieved with the inventory in (14).

(14)　　*French*
　　　case-, T-, wh-EF: [uF] $\succ$ [u#], [uγ] $\succ$ [•F•]
　　　Top-, Foc-EF: [uF] $\succ$ [•F•]

Another language where $\bar{\text{A}}$ extraction optionally triggers participial agreement is Passamaquoddy (Bruening 2001). This can be explained by means of the inventory in (15). Optionality derives either from the availability of two different grammars (a) and (b), or to the availability, within the same grammar, of a simpler EF next to the one equipped with the ϕ-probes.

(15)　　*Passamaquoddy*
　　　(a) EF: [uF] $\succ$ [u#], [uγ] $\succ$ [•F•]
　　　(b) EF: [uF] $\succ$ [•F•]

4.4 Derivations

4.4.1 Morphological realization

Past participle agreement consists of the overt morphological inflection for number and gender, but not for person, on the lexical verb in the perfect tense. At Spell-out, if the complex head V + v contains a value for # and γ, then these morpho-syntactic features are spelled out by a morpho-phonological exponent. In (16) I show an example where the lexical verb is *mangiare* 'to eat', in the form of the feminine singular participle *mangiata*. The corresponding syntactic structure is in (17).

(16)　　mangi　　- a　　　　　　- t　　　　- a
　　　lexical root - thematic vowel - v[Infl:perf] - v[#:sg],[γ:f]

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pattern more similarly to A-movement than they do in Italian. The distinction between A- and $\bar{\text{A}}$-movement is in fact blurry and it consists of different properties that tend to cluster together, but do not always do so. Cf. Mahajan (1990); Müller (1995); van Urk (2015); Safir (2019) for discussion.

(17)

```
                        vP
               ┌─────────┴─────────┐
             DP_j                  v′
            [φ:α]          ┌────────┴────────┐
                           v                VP
                     ┌─────┴─────┐         ┌─┴─┐
                   V_i           v        t_i  t_j
                            [Infl:perf]
                              [ʉπ:α]
                          [γ:α],[#:α]
```
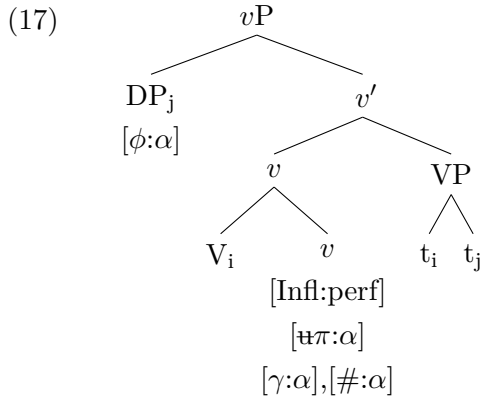
In tree (17), which illustrates the case of a transitive v with a clitic object, the person value $[\pi]$ on v is due the fact that transitive v is a probe for person. The person feature determines the allomorph of the auxiliary, as we saw in chapter 3, but it is not spelled out as inflection. In contrast, the gender $[\gamma]$ and number $[\#]$ values are present because of the edge feature insertion (due to movement of the DP_{obj} to Spec,v), as I have explained in the previous sections. These are the features that are spelled out by overt morphological inflection (but do not influence the morphological realization of Perf).

At Vocabulary Insertion, participle agreement is realized by the metarule in (18). The specific lexical entries are represented in (19).

(18)   /participle agreement for α/ $\leftrightarrow$ v[Infl:perf],[γ:α],[#:α]

(19)   a.   /t/ $\leftrightarrow$ v[Infl:perf]
         b.   /a/ $\leftrightarrow$ v[γ:+f],[#:+sg] / [Infl:perf]
         c.   /e/ $\leftrightarrow$ v[γ:+f],[#:+pl] / [Infl:perf]
         d.   /i/ $\leftrightarrow$ v[γ:+m],[#:+pl] / [Infl:perf]
         e.   /o/ $\leftrightarrow$ v / [Infl:perf] (elsewhere)

Note that the morpheme corresponding to v is spelled twice, as (16) and (19) show: once for the feature [Infl], once for the ϕ-features. Firstly, the vocabulary entry /t/ (19-a) that spells out the [Infl] feature on v is inserted in the terminal node v. However, Vocabulary Insertion does not stop after this single Vocabulary Item is inserted, but it goes on discharging the next features $[\gamma]$, $[\#]$. This is due to a mechanisms called *Fission*, originally proposed by Noyer (1992). When the morphological operation Fission applies, Vocabulary Items are not in competition for a single position of a morpheme. This happens when a single morpheme may correspond to more than a single Vocabulary Item, as in (19). In this case, Fission creates an additional position of exponence after one Vocabulary Item is inserted. This operation applies again until all the features of the morpheme have been discharged (Harley and Noyer 1999: 6).

In the specific case of participle agreement, the EF is inserted on v in the syntax.

Subsequently, in the morphology, before Vocabulary Insertion, the number and gender features that are part of the EFs are separated from [Infl] by Fission. Finally, VI applies twice, firstly substituting the [Infl] feature, secondly targeting number and gender.[16]

The result of EF-insertion is morphologically realized only in the presence of the head Perf that assigns the right value to the Infl-feature on v, whereas it is not visible in the context of a simple tense clause. I express this relation by making use of context-sensitive Vocabulary Insertion. The vocabulary entries in (19) realize the ϕ-features on v only when this head also bears the value *perf* for the feature [Infl]. This is an instance of strictly local allomorphy, since all relevant features are located on the same head (cf. also Georgi and Stark (2020: 37) for the same mechanism). This dependence, encoded in the vocabulary entries in (19), tries to capture the fact that EF-agreement is only overtly realized on a past participle, but not on any other form of the verb. In the introduction of this chapter (section §4.1), I have said that gender and number agreement is typically found on nominal modifiers and not on verbs.[17] Hence, it could be that the head Perf introduces some

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[16] The alternative solution would be to have two different heads in syntax, as shown in (i), differently from (18).

(i) mangi   - a   - t   - a
     lexical root - thematic vowel - v[Infl:perf] - Part[#:sg],[γ:f]

In (i), v bears the [Infl:perf] feature, which is spelled out by the participle morpheme /t/. A further head Part is spelled out as gender/number inflection, either because it is the locus of EF-insertion (it being a phase; nonetheless, a further EF could be located also on v, but it would not be spelled out) or because it bears a gender and number probe that targets the EF on v.

Let me highlight that the Part head in (i) could also open the way for a new theory of edge feature. Instead of being an inserted feature on the phase head, the EF could be itself a head (F. Heck, p.c.). In fact, a syntactic head is just a bundle of features. Under this hypothesis, an EF-head can be merged with every phase head. The head EF ϕ-agrees with the moving item, and its specifier serves as the edge of the phase (considering the edge of the phase everything except the complement of the phase head). The EF-head is represented in (ii), leading to participle agreement in (iii).

(ii)

```
                    EFP
                   /   \
                DP_j     EF'
              [φ:α]     /   \
              [•T•]    EF     vP
                   [u•T•]    /  \
                [γ:α],[#:α]  v    VP
                   [•T•]    / \   / \
                          V_i  v  t_i t_j
                           [Infl:perf]
                            [uπ:α]
```
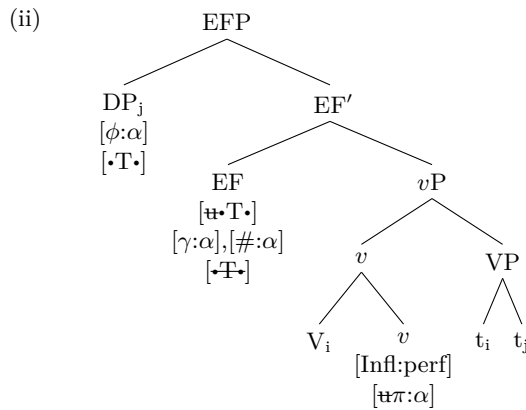
(iii) mangi   - a   - t   - a
       lexical root - thematic vowel - v[Infl:perf] - EF[#:sg],[γ:f]

[17]A possible, although intuitive explanation about why the EF targets gender and number, whereas the probes on inflectional heads generally target the person feature could be grounded in the feature geometry model proposed by Harley and Ritter (2002). In their system, person is represented by the PARTICIPANT node and its dependent nodes (Speaker and Addressee) and it consists of properties that are

nominal features in the structure. In other words, it is possible that the feature [Infl:perf] creates a morphological environment similar to a [D] or an [Adj] category. If it is true that the perfect projection "allocates" some nominal features to its complement, then it could follow that in this context it is possible to morphologically realize the nominal features gender and number.

In the next sections, I present the derivation for the instances of participle agreement seen in (1).

4.4.2 Transitive verbs with object clitic

The first case I would like to address is participle agreement with an object clitic in transitive clauses, as in the following sentence.

(20)   Teresa le=ha   lavat-e.
       Teresa ACC.3PL.F=have.PRS.3SG wash.PRTC-PL.F
       'Teresa has washed her/it.'

The argument structure of sentence (20) is transitive. As far as the auxiliary is concerned, I refer the reader to section §3.3.1 in chapter 3, where the derivation for transitive clauses is provided. The difference here is that in example (20) the object is not a full DP, but rather a clitic, which causes the additional complication of participle agreement (absent when the object is a full DP, cf. example (2-a)). In (20), the inflectional morphology on the lexical verb is due to Agree with the clitic, which must move out of its base position in order to be able to check its [•T•] feature later on in the derivation.

Let us take the tree (23) of chapter 3 and substitute the full DP in the object position with a clitic (cl_{obj}). In tree (21), once all the operations on the phase head v have been carried out , the VP, which is the phase complement, should be sent to Spell-out. However, this would cause a problem in the derivation because a feature would remain unchecked. In the present case, there is still an unchecked feature in the phase domain, namely [•T•] on the clitic (the external argument is not part of the Spell-out domain, since it is located in Spec,v). The function of this Merge feature [•T•] is to find a host of the T category for the clitic. The feature cannot be satisfied yet, since there is no such a head in the structure. Therefore, this feature must escape the phase complement by moving to the edge of the phase, pied-piping the whole clitic. This is done by an edge feature. The external arrow in (21) indicates that an edge feature is inserted on the phase head v.

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context-specific. In contrast, the INDIVIDUATION node and the CLASS node (which encode, respectively, number and gender), express properties that are independent of the discourse. The idea here is that if the EF copies the features of the moved element, then it targets those attributes that identify the XP, generally a DP, independently from the argument structure. In contrast, functional heads that introduce arguments, assign case and so on, target properties that are more relevant to the argument structure, such as person. This difference has been also encoded via the distinction between Agree and Concord: the former involves the person feature, the latter number and gender (D'Alessandro 2004; Giusti 2015) (cf. section §4.4.3 for discussion of Concord).

(21)

```
              vP
         /          \
     DP_sbj          v'
     [φ:β]        /      \
     [case:_]    v        VP
              [Infl:_]   /    \
              [case:acc] V    cl_obj
              [uπ:α]          [φ:α]
              [•D•]           [case:acc]
         EF                   [•T•]
```

(22)

```
                    vP
              /            \
          cl_obj            v'
          [φ:α]         /        \
          [case:acc]  DP_sbj       v'
          [•T•]       [φ:β]     /      \
                      [case:_] v        VP
                            [Infl:_]   /    \
                            [uπ:α]    V   <cl_obj>
                       1:[u(•T•)]         [φ:α]
                       2:[u#:α],[uγ:α]    [case:acc]
                       3:[•T•]            [•T•]
                  (c) •T•
              (a) u(•T•), (b) u#, uγ
```
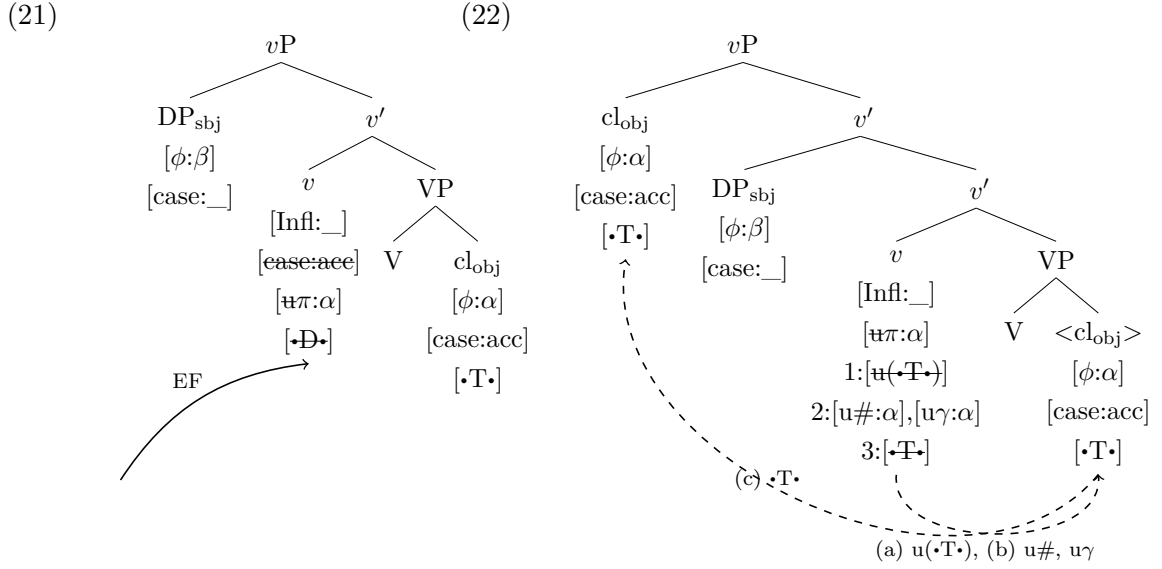
In tree (22), I show the effects of the edge feature. This category-specific EF agrees with the unchecked feature. Then, it agrees for gender and number with the head that bears the unchecked feature, and it moves it to an outer specifier of the phase head, which has the function of an escape edge. I propose that the landing site of intermediate successive cyclic movement is an outer specifier because of the Strict Cycle Condition.[18] The final configuration in (22) shows that v has copied gender and number from the clitic, which is now located at the edge of the phase in an outer specifier, from where it is accessible for other higher heads.

When Perf is merged, everything happens as in the case without the clitic. Perf agrees with v for [Infl], and then, via Nested Agree, for [π:_] too. Perf ends up with a valued person feature, which determines HAVE insertion at Spell-out (for details, cf. chapter 3).

The next tree (23), which corresponds to the tree (27) in chapter 3, shows the operations carried out after T is merged. As soon as T enters the structure, the clitic moves to T and incorporates into it (cf. Rizzi (1986); McGinnis (1998); Heck (2016) for early cliticization). Then the head T starts discharging its features. Given Nested Agree, we could expect that T would try to check all its features with the clitic, exploiting the channel that has been created by the movement of the clitic to T. However, T does not agree with the clitic, as I have already highlighted in section §3.3.2 in chapter 3. There are different reasons for this fact, and each of these is able to exclude agreement between T and the clitic. Firstly, Agree requires c-command. Since the clitic has incorporated into T, they are not in a c-command relation anymore.[19] Therefore, the clitic is out of the search domain of

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[18]Note that this point is quite controversial. There are also ways to locate the landing site of successive cyclic movement in an inner specifier in accordance with the SCC. In favor of the inner specifier is the analysis proposed by Heck (2016).

[19]To be more precise, the lower segment of T still c-commands the clitic. In principle, T could still be able to probe the clitic. However, even though this is not self-evident, the data shows that a clitic that has incorporated to T cannot intervene anymore. This is probably due to the position of the person probe of

the [ϕ]-probe on T. Secondly, cliticization does not discharge any features on T, but it is rather driven by a feature on the incorporating item. Therefore, even though T and the clitic interact together, the array of the features on T has not been considered yet and the whole domain is still available.[20] Thirdly, case assignment on T applies before ϕ-Agree. Since the clitic is not a suitable goal for case assignment (given that it already bears accusative case), T skips the clitic and target the DP$_{sbj}$. When it comes to the following operation, Nested Agree forces T to probe again the DP$_{sbj}$, thereby skipping again the clitic.

(23)

```
                              TP
                 ┌─────────────┴─────────────┐
              DP_sbj                          T'
              [φ:β]              ┌─────────────┴─────────────┐
              [case:nom]         T                          PerfP
                          ┌──────┴──────┐            ┌────────┴────────┐
                        cl_obj          T          Perf               vP
                        [φ:α]      1:[T:pres]    [ʉInfl:perf]    ┌──────┴──────┐
                        [case:acc] 2:[case:nom]  [ʉπ:α]      <cl_obj>          v'
                        [•T•]      3:[ʉφ:β]                   [φ:α]      ┌──────┴──────┐
                                   4:[•D•]                    [case:acc] DP_sbj        v'
                                                              [•T•]      [φ:β]   ┌─────┴─────┐
                                                                         [case:_] v          VP
                                                                         [Infl:perf]   ┌─────┴─────┐
                                                                         [ʉπ:α]        V      <cl_obj>
                                                                         [ʉ#:α],[ʉγ:α]        [φ:α]
                                                                                              [case:acc]
                                                                                              [•T•]
```

(d) •D•
(a) •T•
(b) case, (τ) φ
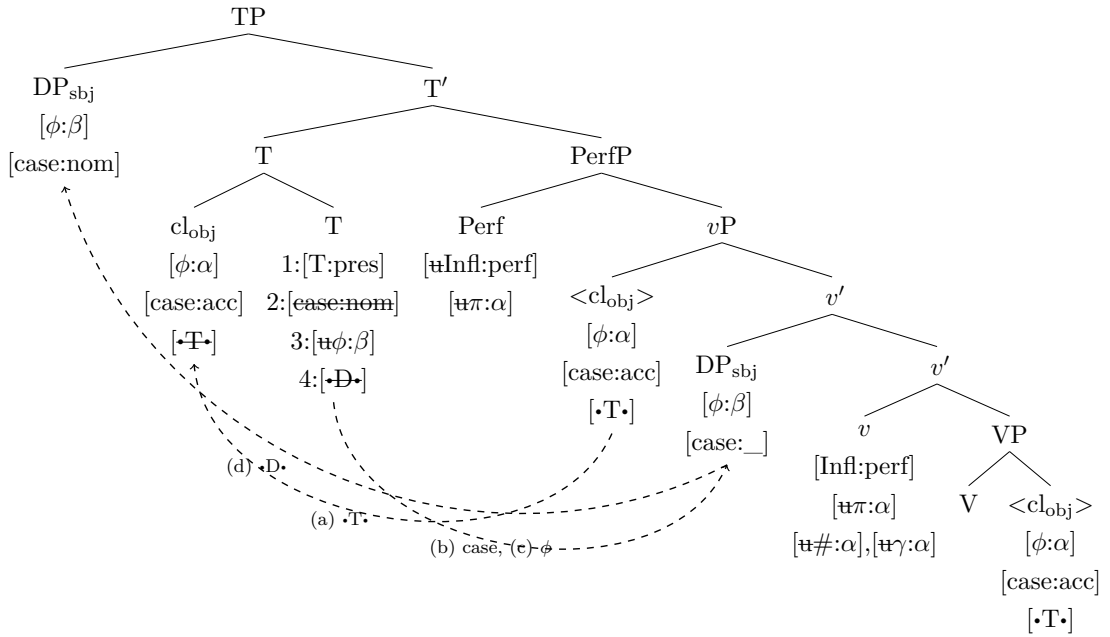
At the end of the derivation, the complex head V + v undergoes Spell-out. V carries the lexical information and it is substituted by the corresponding verbal root. v bears the value *perf* for [Infl], which determines the appearance of past participle morphology (the infix /-t-/ in (19)). The head also contains ϕ-features: person (due to transitive v being a probe), number and gender (due to the edge feature). In the lexicon of Standard Italian, there are specific vocabulary entries that spell out gender and number on v when it bears [Infl:perf], as I have proposed in (19). Hence, the present derivation results in overt past participle inflection, due to object agreement via EF, as illustrated with the substitutions

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T on the upper segment of T, namely on the head of the complex head formed via cliticization. In any case, Nested Agree on T solves the issue here: T assigns nominative case, and subsequently ϕ-probes the nominative argument.

[20]Note, however, that under some analyses of cliticization the relevant feature is located on T and not on the clitic itself. An analysis of this type is provided by Georgi (2014: 236), where cliticization is triggered by a structure-building feature on T. In this dissertation, I locate the relevant feature on the clitic itself. This unchecked [•T•] feature on the clitic triggers EF-insertion and makes the clitic moving towards T via successive cyclic movement. However, this is only possible because of a feature on T, namely its categorical feature T, in a c-command relation with the clitic. [•T•] is a type of Merge feature that can initiate Merge when it is c-commanded by the corresponding matching feature.

in (24).

(24)   /lavate/ ↔ v[Infl:perf][π:3][#:pl][γ:f] + V[$\sqrt{\text{WASH}}$]

4.4.2.1 Transitive verbs with resumptive clitic

Let me now add a small comment for the case of resumption. We saw that participle agreement shows up also with resumptive clitic in the presence of Ā-movement, as in sentence (1-c), repeated here again.

(25)   La camicia, Teresa l=ha   lavat-a.
        the shirt   Teresa ACC.3SG.F=have.PRS.3SG wash.PRTC-SG.F
        'The shirt, Teresa has washed it.'

Cases as (25) should be analyzed as structures where the dislocated DP is adjoined to the matrix clause in the left periphery. The object position just contains a clitic that moves to T, causing object agreement as in the derivation presented in this section.

An alternative analysis shares some similarities with a standard approach to clitic doubling. Under the *big DP hypothesis* (Uriagereka 1995; Nevins 2011), the clitic is merged as a D head, which is part of the DP it doubles. In clitic doubling structures, the clitic moves as a D head to its landing site T and the DP stays in situ. In the present case, the clitic moves to T, but also the doubled DP Ā-moves to the left periphery.

Whatever analysis is assumed for resumption, the idea is that participle agreement is due to the A-dependency with the resumptive clitic that moves to T, as with a canonical argument clitic, and not with the left dislocated DP. In fact, the participle does not agree with a left-dislocated constituent if there is no resumptive pronoun. This is shown in (2-d), repeated here again.

(26)   La camicia, Teresa ha   lavato   (non la giacca).
        the skirt   Teresa have.PRS.3SG wash.PRTC not   the jacket
        'The skirt, Teresa has washed it (not the jacket).'

The same asymmetry between dislocation with or without resumption can also be observed on the right edge of the sentence. Following (Cardinaletti 2002), we can distinguish between right-dislocation (27-a), where the clitic pronoun is obligatory, and marginalization (27-b), where the clitic is impossible.

(27)   a. L=ho   già   comprat-a,   la pasta.
            ACC.3SG.F=have.PRS.1SG already buy.PRTC-SG.F the pasta

        b. Ho   già   comprato/(*-a),   la pasta.
            have.PRS.1SG already buy.PRTC/PRTC-SG.F the pasta
            'Pasta, I have already bought it.'   (Cardinaletti 2002: 30)

Crucially, there is (obligatory) inflection on the participle only in the presence of the clitic

pronoun. It is really A-movement of the clitic (due to [•T•]), and not of Ā-movement of the dislocated DP (due to [uFoc], [uTop]), that triggers participle agreement.

4.4.3 Transitive verbs with reflexive clitic

An interesting case arises when a transitive verb takes a reflexive clitic pronoun as one of its argument (the direct object (28-a), or the indirect object (28-b), analyzed in the next section).

(28)   a.   Teresa si=è   lavat-a.
              Teresa REFL.ACC.3SG.F=be.PRS.3SG wash.PRTC-SG.F
              'Teresa washed herself.'

        b.   Teresa si=è   lavat-a   il   vestito.
              Teresa REFL.DAT.3SG.F=be.PRS.3SG wash.PRTC-SG.F the dress
              'Teresa has washed her dress.'

The selected allomorph for the auxiliary is BE, which is due to failed valuation for the feature $[\pi]$ on Perf. As I have explained in the analysis for auxiliary selection (section §3.3.2 in chapter 3), this is caused by the presence of an unvalued person feature on v. Since the value of the person feature on v derives from Agree with the internal argument, the conclusion is that the ϕ-features on the clitic must be unvalued.

In contrast, the presence of participle agreement shows that the ϕ-features on the moved clitic pronoun are valued. In fact, the lexical verb exhibits overt morphological inflection that is controlled either by the subject or by the bound reflexive. Since the external argument is never a controller of participle agreement (cf. Belletti's generalization, Belletti 2005b, 2017), the conclusion is that the past participle agrees with the reflexive clitic, which must bear valued ϕ-features, contrary to what auxiliary selection suggests.

I propose that the answer to this puzzle lies in the timing of operations. On the one hand, when person-Agree on v is carried out, the reflexive clitic has not been bound yet, with the consequence that Agree fails. On the other hand, when the clitic moves out of the phase domain due to EF-insertion, it has already acquired valued ϕ-features via binding by the external argument. The two operations target the same item, the reflexive clitic pronoun, but at different derivational stages. In other words, binding feeds EF-Agree (and, consequently, participle agreement) because it precedes it and it creates the conditions for its success. Instead, binding counterfeeds Agree on v (and, consequently, the selection of the more specific allomorph HAVE for the auxiliary), because it takes place too late for creating the adequate conditions for successful valuation via Agree.

Note, however, that there could be at least another possible explanation for the different syntactic representations of the reflexive clitic, suggested by sentences (28-a,b) (where auxiliary selection indicates unvalued ϕ-features on the clitic, while participle agreement valued features). It has been proposed that verbal agreement and participle agreement target different sets of features and involve different operations (D'Alessandro 2004: 100-

101, Giusti 2015). Verbal agreement is a consequence of Agree, which targets syntactic features. Participle agreement is due to an operation similar to *feature sharing* called *Concord*, which operates on a set of semantic features inside a maximal projection.[21]

What is relevant to the present discussion is the fact that in Concord the features can be "updated". Once the clitic is bound, not only its own ϕ-features, but also all other features that have been copied from it via Concord receive a value. If this is the case, then the respective order of binding and EF-insertion is not relevant anymore. Agree on v applies before the introduction of the external argument because of the SCC. Valuation fails because the clitic has not been bound yet. This result cannot be updated later, because it is due to Agree, and not to Concord. After this step, EF-insertion can take place. In fact, if EF-Agree is a type of Concord, even if it fails to copy a value when it is performed, then the value of the feature is copied again via feature sharing after binding. Note that this solution would simplify the discussion about the timing of edge feature insertion by adopting Müller's (2010) proposal (where EF-insertion must precede the creation of the specifier, in accordance with the SCC). In fact, if the ϕ-features on the EF can be updated, then EF-insertion does not have to come after the introduction of the external argument.

Nonetheless, I do not adopt this view in my dissertation, since I think that all operations should be reduced either to Merge or to Agree, following a minimalist approach. Participle agreement is the morphological reflex of syntactic A-movement and this is an instance of Agree. I do not see the need for adopting a further operation and a further set of features for this purpose. The main effort, under the minimalist program, should be to reduce all instances of Concord to the general syntactic operation Agree. Moreover, Concord may also run into violations of the Strict Cycle Condition, in particular in the process of feature sharing. Finally, as far as the SCC is concerned, the discussion on the timing of EF-insertion in section §4.3.4.2 has shown that EF-insertion can be the last operation on the phase head without resorting to Concord in order to avoid a violation of the SCC.

I now propose the derivation for a sentence with a reflexive clitic object (28-a). The tree in (29) illustrates how binding happens after Agree on v has taken place, leading to failed Agree (the tree is the same as tree (36) in chapter 3). When the external argument is introduced (crucially, after π-Agree on v), it binds the reflexive direct object, which acquires valued ϕ-features. After all operations triggered by the phase head have been carried out, an edge feature is inserted, as the external arrow in (29) shows.

---

[21]According to D'Alessandro (2004: 108), evidence for the idea that participle agreement involves semantic features, rather than syntactic ones, comes from agreement with Italian impersonal *si* in predicative construction or with impersonal *a gente* in Portuguese. Gender on the participle does not target the grammatical gender, but rather semantic gender, which is context-related.

(i)   a.   Se si=è   ricch-i/e,   si=è   anche belli/e.
             if IMPERS=be.PRS.3SG rich.PL.M/PL.F IMPERS=be.PRS.3SG also beautiful.PL.M/PL.F
             'When one is rich, one is also beautiful.'
    b.   A gente   está   cansados.
             the people.SG.F stay.PRS.3SG tired.PL.M
             'People are tired.'

(29)

vP
  DP$_{sbj}$ v'
  $[\phi:\beta]$
  [case:__] v VP
                [Infl:__]
                [~~case:acc~~]   V   cl$_{obj-refl}$
                [~~uπ:__~~]   [ϕ:__]
  (a) •D•   [~~•D•~~]   [case:acc]
  (c) EF   [•T•]
       (b) binding

(30)

vP
  cl$_{obj-refl}$ v'
  $[\phi:\beta]$
  [case:acc]   DP$_{sbj}$ v'
  [•T•] $[\phi:\beta]$
                [case:__] v VP
                            [Infl:__]
                            [~~uπ:__~~]   V   cl$_{obj-refl}$
                         1:[u(~~•T•~~)]   [$\phi:\beta$]
                         2:[u#:β],[uγ:β]   [case:acc]
                         3:[~~•T•~~]   [•T•]
                                          •T•
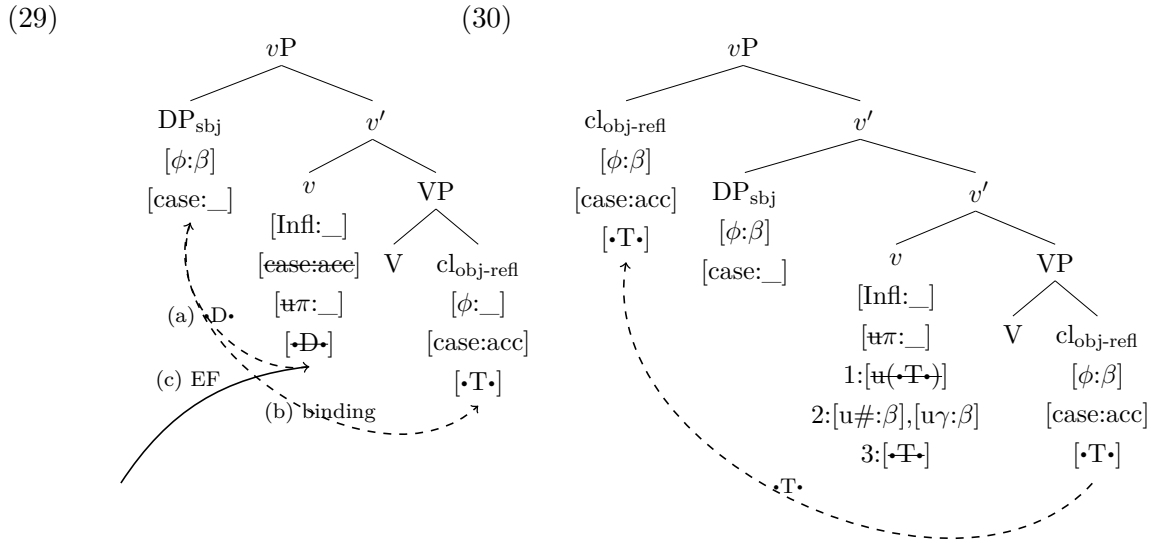
In tree (30), the EF agrees with the clitic via the Agree feature [u(•T•)], which targets the unvalued feature on the clitic. Then it agrees with it for number and gender. Now v bears a subset of valued ϕ-features that will be realized by overt morphological inflection. After this step, the unvalued feature is moved to an outer Spec,v, pied-piping the whole DP. Note that this step of the derivation in (30) leads to an intermediate Principle C violation: the bindee c-commands the binder.[22] I think this is not a problem, if one assumes that Principle C is evaluated later in the derivation (cf. Fox (1999) for the application of Principle C at (and only at) LF).

The derivation then proceeds exactly as for transitive clauses in section §4.4.2. Perf probes v, but this bears an unvalued person feature (because of Agree with the reflexive pronoun before binding, cf. tree (29)). Perf agrees with v, but it cannot copy any π-features. Note that there is no other possible goal than v in the structure. On the one hand, the PIC makes anything below v not accessible for Perf; on the other hand, the reflexive clitic lies outside the search domain of Perf, as established by Nested Agree, because it has already moved to Spec,v due to the EF.

In the next step, T is merged in the structure. The clitic head-moves to T and forms a complex head with it. Then, T interacts with the DP$_{sbj}$ as far as case assignment, ϕ-Agree and the EPP-feature are concerned. This is shown in the tree (31), equivalent to (38) in the previous chapter.

---

[22] *Principle C*: an R-expression must be free (i.e., not bound) (Chomsky 1981).

(31)

```
                              TP
                  ┌────────────┴────────────┐
              DP_sbj                        T′
              [φ:β]              ┌───────────┴───────────┐
              [case:nom]         T                      PerfP
                          ┌──────┴──────┐        ┌───────┴───────┐
                     cl_obj-refl        T       Perf            vP
                       [φ:β]         1:[T:pres] [uInfl:perf] ┌────┴────┐
                       [case:acc]   2:[̶c̶a̶s̶e̶:̶n̶o̶m̶]  [uπ:__]  <cl_obj-refl>    v′
                       [•T•]        3:[u̶φ:β]                 [φ:β]      ┌──────┴──────┐
                                    4:[•D̶•]                  [case:acc] DP_sbj       v′
                                                             [•T•]      [φ:β]   ┌────┴────┐
                                                                        [case:__] v        VP
                                                                                [Infl:perf] ┌──┴──┐
                                                                                [u̶π:__]     V  <cl_obj-refl>
                                                                                [u#:β],[uγ:β]   [φ:__]
                                                                                                [case:acc]
                                                                                                [•T•]
```

(d) •D̶•   (a) •T̶•   (b) case, (c) φ

At Spell-out, overt gender and number inflection is realized on the past participle, since v has copied gender and number from the reflexive clitic (co-referential with the DP$_\text{sbj}$), due to the EF-insertion. The lexical entries responsible for participle agreement are discussed in section §4.4.1.

4.4.4 Transitive verbs with benefactive clitic

The same configuration as in section §4.4.3 also arises when the reflexive clitic is merged as the indirect object with benefactive meaning, as already highlighted by example (28-b). Example (32-a) contains a plural masculine direct object, a singular feminine external argument, and a dative reflexive argument that bears the same ϕ-features as the subject. As (32-a) shows, the participle agrees with the dative reflexive clitic.[23] Note that in Italian it is impossible to have participle agreement with a (non-reflexive) dative argument, as (32-b) shows.

(32) a. Teresa si=è   fatt-a   i panini.
          Teresa REFL.DAT.3SG.F=be.PRS.3SG make.PRTC-SG.F the sandwich.PL.M
          'Teresa has made the sandwiches for herself.'

      b. Teresa le=ha   fatto   i panini.
          Teresa DAT.3SG.F=have.PRS.3SG make.PRTC the sandwich.PL.M
          'Teresa$_i$ has made the sandwiches for her$_j$.'

These data illustrate that the reflexive clitic indirect object does not behave as a canonical dative argument, even though it is merged in the same position (Spec,Appl), it bears

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[23]If sentence (32-a) contains a clitic object, participle agreement is controlled by the object, and not by the dative, as example (37) in section §4.4.5 shows.

dative case and it can be substituted by a prepositional dative (with the relevant changes in position, auxiliary selection, and participle agreement: *Teresa ha fatto i panini a/per se stessa* 'Teresa has made the sandwiches to/for herself'). The fact that the reflexive clitic triggers participle agreement might be due to a somehow "light structure". In fact, it has been proposed that the dative argument is encapsulated under a K(P)-shell, which prevents it both from being the target and the controller of agreement (Rezac 2004; Atlamaz and Baker 2018; Coon and Keine 2020). Reflexive clitics might lack the K(P)-shell, maybe because they need to be bound.[24]

I now offer the derivation for the sentence (32-a), as far as participle agreement is concerned. The trees (33) corresponds to the tree (59) of the previous chapter. As we saw in chapter 3, the reflexive clitic pronoun is introduced by an applicative head. The ApplP is selected by a quirky v, which assigns dative case to the clitic and copies its π-feature, which is still unvalued because the clitic has not been bound yet. Subsequently, v introduces the external argument that binds the reflexive indirect object. Now the reflexive pronoun has acquired valued ϕ-features, but it is too late for successful agreement

---

[24]Evidence for different syntactic structures for pronouns comes from optionality of participle agreement with personal pronouns (Belletti 2005b) and from the placement of pronouns in the string (Manzini 2019). First of all, participle agreement is optional with 1st/2nd person pronouns (i-a), but it is obligatory with 3rd person pronoun (i-b). Note that participle agreement is obligatory if the DP is a *pro*, which raises to the subject position (i-c) (Manzini 2019).

(i)   a.   Ci/vi=ha   vist-o/e/i.
              ACC.1PL/ACC.2PL=have.PRS.3SG see.PRTC-DEFAULT/PL.F/PL.M
              'S/he has seen us/you.'
   b.   Le=ha   vist-e/*i/*o.
              ACC.3PL.F=have.PRS.3SG see.PRTC-PL.F/PL.M/DEFAULT
              'S/he has seen them(f).'
   c.   Siete   andat-i/e/*o.
              be.PRS.3PL go.PRTC-PL.M/PL.F/DEFAULT
              'You have gone.'

Secondly, 1st/2nd person clitics precede the locative *ci* (ii-a), whereas 3rd person clitics do not (ii-b) (Manzini 2019).

(ii)   a.   Al   mare, ti=ci=porta   Giovanni.
              to.the beach ACC.2SG=there=bring.PRS.3SG Giovanni
              'To the beach, Giovanni brings you there.'   DO$_2$-loc
   b.   Al   mare, ce=lo=porta   Giovanni.
              to.the beach there=ACC.3SG.M=bring.PRS.3SG Giovanni
              'To the beach, Giovanni bring him there.'   loc-DO$_3$

Hence, there is a difference between 1st/2st person pronouns, 3rd person pronouns, and *pro*. Therefore, it could be that reflexive clitics are also different (having a reduced structure), since they trigger obligatory participle agreement also when they are dative arguments. For the difference between 1st/2nd person and 3rd person pronouns, cf. also Cardinaletti's (2008) proposal of person pronouns versus non-person pronouns.

Note that the idea of reflexive pronouns as lacking a K(P)-shell is in contrast with the representation of clitics proposed by Cardinaletti and Starke (1999). According to these authors, all clitic pronouns and DPs have the same category, independently of their case specifications, because they exhibit the same syntactic properties. Hence, even DPs marked as accusative are KPs. Evidence for this is the dummy preposition *a* found in accusatives in Spanish and in some Central and Southern Italian dialects (DOM) (Cardinaletti and Starke 1999: 33). DOM implies oblique case in Romance, hence accusative DPs are also KPs.

on v, since Agree has already been carried out. After this operation, there is still an unchecked feature in the complement of v, namely the [·T·] feature on the reflexive clitic. Therefore, an EF is inserted on the phase head, as the external arrow in (33) shows.

(33)

```
                        vP
              ┌─────────┴─────────┐
          DP_sbj                  v′
          [φ:β]          ┌────────┴────────┐
          [case:__]      v               ApplP
                    [Infl:__]      ┌───────┴───────┐
                    [case:dat]  cl_ind-obj-refl   Appl′
               (c) ·D·  [uπ:__]    [φ:__]    ┌──────┴──────┐
                        [·D·]      [case:]  Appl          VP
               (e) EF          (a) case, (b) π [ease:ace] ┌───┴───┐
                          (d) binding   [·T·]   [·D·]    V    DP_obj
                                                             [φ:α]
                                                             [case:acc]
```

(34)

```
                        vP
              ┌─────────┴─────────┐
      cl_ind-obj-refl            v′
          [φ:β]          ┌────────┴────────┐
          [case:dat]   DP_sbj             v′
          [·T·]        [φ:β]      ┌────────┴────────┐
                       [case:__]  v              ApplP
                              [Infl:__]   ┌────────┴────────┐
                              [uπ:__]  <cl_ind-obj-refl>   Appl′
                          1:[u(·T·)]     [φ:__]      ┌──────┴──────┐
                       2:[u#:β],[uγ:β]   [case:dat] Appl          VP
                          3:[·T·]        [·T·]    [ease:ace] ┌───┴───┐
                  ·T·                             [·D·]     V    DP_obj
                                                               [φ:α]
                                                               [case:acc]
```
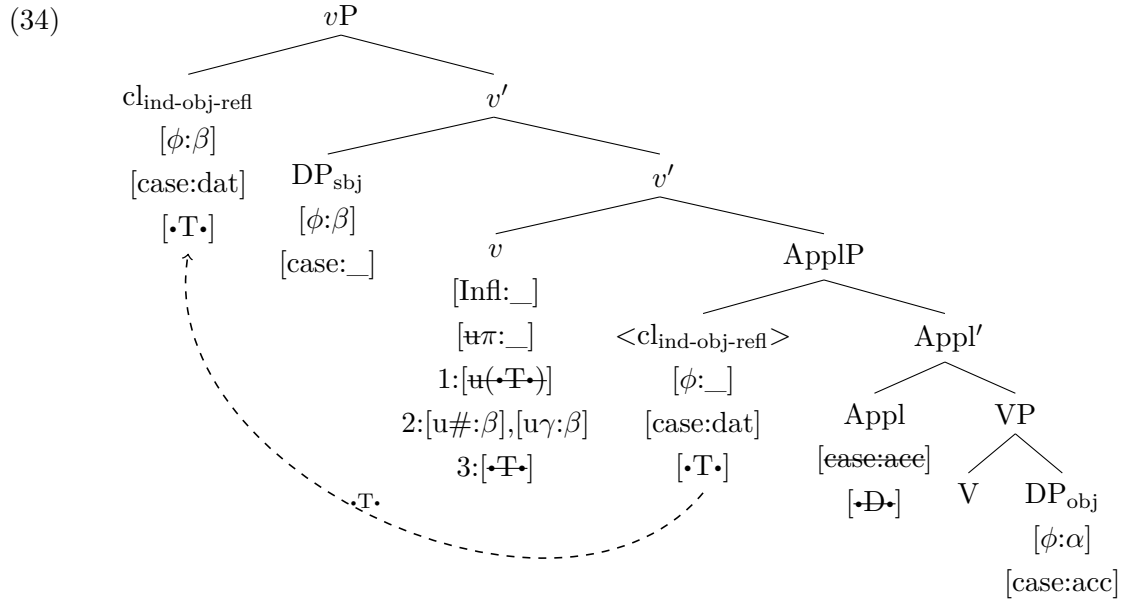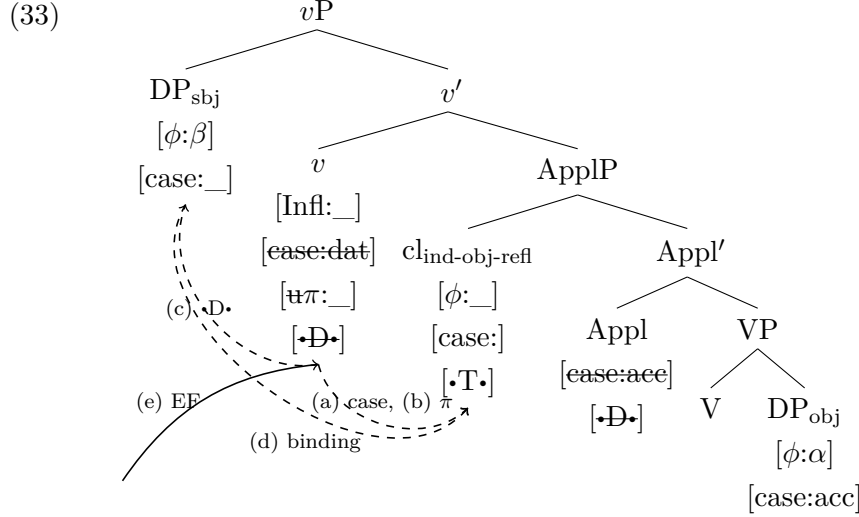
The edge feature agrees with the head bearing the unchecked feature, it copies the relevant subset of ϕ-features from that head (which now bears valued ϕ-features after binding) and it moves it to an outer specifier, as tree (34) shows. The situation is exactly the same as for transitive verbs with a reflexive direct object, in section §4.4.2. Since v bears valued number and gender features and the lexicon contains vocabulary entries that are specified for number and gender values on v[Infl:perf] (cf. section §4.4.1), the features on v will be overtly realized as inflectional morphology on the participle.

4.4.5 Transitive verbs with multiple clitics

Participle agreement arises because of movement of a DP across a phase head. What happens when more than one DP moves? In this section, I discuss the case of multiple clitics. Example (35) concerns ditransitive clauses where both the direct object and the indirect object are clitics.

(35)   a.   A Paolo,   questi segreti, Teresa
           to Paolo.DAT.3SG.M these secrets Teresa
           glie=li=ha   dett-i.
           DAT.3SG.M=ACC.3PL.M=have.PRS.3SG say.PRTC-PL.M
           'To Paolo, these secrets, Teresa has told them to him.' (DO: pl.m, IO: sg.m)

       b.   A Paolo.DAT.3SG.M, la   verità, le   ragazze
           to Paolo,   the truth   the girls
           glie=l=hanno   dett-a.
           DAT.3SG.M=ACC.3SG.F=have.PRS.3PL say.PRTC-SG.F
           'To Paolo, the truth, the girls have told it to him.' (DO: sg.f, IO: sg.m)

As (35) shows, agreement on the participle is always controlled by the direct object, for all combination of ϕ-features. Since there are two clitics moving, two EFs must be inserted on v. What determines which set of values are morphologically realized on the participle as gender and number?

Two things should be noted here. First of all, in Italian the finite verb never agrees with a dative argument. Agreement with datives is also not common cross-linguistically (Boeckx 2000; Richards 2008; Sigurðsson and Holmberg 2008). Therefore, it has been proposed that the dative is encapsulated under a K(P)-shell, which makes its ϕ-feature opaque for agreement (Rezac 2004; Atlamaz and Baker 2018; Coon and Keine 2020). This could be actually the case here. In addition, it has also been argued that Italian dative clitic pronouns are not marked for gender and number (Cardinaletti 2008). In particular, the clitic *gli* (dative, 3rd person, singular, masculine) is actually morphologically unmarked for gender and number; the clitic *le* (dative, 3rd person, singular, feminine) is feminine but it does not bear a morphological marker of feminine (the ending *-e* is a class marker; evidence for this is the impossibility of deletion before another vowel: *le/*l=avevo parlato* 'I talked to her' vs. *le/l=altalene* 'the see-saws').

Whatever the explanation is, the ϕ-features of the dative clitic are not available for agreement. Hence, the ϕ-features of the dative argument cannot be copied by the edge feature responsible for its movement. Given a structure where the indirect object is higher than the direct object (either within a complex VP ([VP IO V [DP DO]]) or with an ApplP ([ApplP IO Appl [VP V [DP DO]]]), the first and the second EF give the following results.

(36)   a.   First EF targets IO: [u(•T•)],[u#:_],[uγ:_],[•T•] → [u̶(•T̶•̶)],[u#:_],[uγ:_],[•T̶•̶]
       b.   Second EF targets DO: [u(•T•)],[u#:_],[uγ:_],[•T•] → [u̶(•T̶•̶)],[u#:α],[uγ:α],[•T̶•̶]

When one of the clitics is a dative argument, the only available ϕ-features are the features of the object. Since only one of the EF could copy some valued ϕ-features, there is no conflict at Vocabulary Insertion: the features spelled out on the past participle are those of the direct object.

However, the situation is not always so simple as in the case represented in (36). I have shown in section §4.4.4 that reflexive clitic pronouns can control agreement even when they bear dative case (cf. example (32-a)). The relevant examples contain a benefactive dative argument in the form of a reflexive clitic, and a clitic direct object, as in (37).

(37) a. Teresa se=li=è   mangiat-i.
          Teresa REFL.DAT.3SG.F=ACC.3PL.M=be.PRS.3SG eat.PRTC-PL.M
          'Teresa has eaten them for/by herself.'
      b. *Teresa se=li=è   mangiat-a.
          Teresa REFL.DAT.3SG.F=ACC.3PL.M=be.PRS.3SG eat.PRTC-SG.F
          'Teresa has eaten them for/by herself.'

In (37), the two EF-sets may contain conflicting ϕ-features, as shown in (38).

(38) a. First EF targets IO$_{\text{refl}}$: [u($\cdot$T$\cdot$)],[u#:_],[uγ:_],[$\cdot$T$\cdot$] $\rightarrow$ [u($\cdot$T$\cdot$)],[u#:β],[uγ:β],[$\cdot$T$\cdot$]
      b. Second EF targets DO: [u($\cdot$T$\cdot$)],[u#:_],[uγ:_],[$\cdot$T$\cdot$] $\rightarrow$ [u($\cdot$T$\cdot$)],[u#:α],[uγ:α],[$\cdot$T$\cdot$]

In (38), there are two sets of differently valued ϕ-features on v. The question is how the conflict between two different sets of ϕ-features (one coming from the accusative clitic, one from the dative reflexive clitic) is resolved. As (37) shows, it is actually the features of DP that has moved last (i.e., the direct object) that are spelled out as past participle inflection. It is important to note that it is not a specific combination of person and number features that favors one set over the other one, but it is really their syntactic function. In the case of multiple clitics, it is always the features of the object, or of the last moved element, that are morphologically realized.

I propose that this is due to the presence of a single EF and to the featural make-up of edge features. Recall that an edge feature contains a set of ordered features, as illustrated in (6), repeated here below.

(39)   EF: [uF] $\succ$ [u#], [uγ] $\succ$ [$\cdot$F$\cdot$]

The Agree component [uF] and the ϕ-probes are ordered in such a way that ϕ-Agree must target the lowest item. I will now explain the proposal in details.

I argue that only a single EF is inserted when there is more than one unchecked feature of the same type (for instance, [$\cdot$T$\cdot$]) in the complement of the phase head. However, the EF can be used multiple times. Once an EF is inserted, it must scan the whole c-command domain without stopping to the highest matching feature. For example, the EF inserted for the unchecked feature [$\cdot$T$\cdot$] can and must be used for all the instances of [$\cdot$T$\cdot$] that are c-commanded by the EF. The intuition behind this idea is that the function of the

Agree-component [uF] of the EF is to ensure that all unchecked features are removed from the phase domain. Hence, there is only a single EF, whose components can agree with multiple goals and move multiple items (cf. *Multiple Agree*, Hiraiwa 2005; Nevins 2011; Deal 2015).

The first Agree-component of the edge feature scans the c-command domain up to the last instance of the unchecked feature, which is located in the direct object position. Now the ϕ-probe of the EF can be discharged. Given Nested Agree, it must target the last stored position, which is the one containing the lowest instance of the unchecked feature, namely the direct object position. Hence, Nested Agree applied to the components of the EF derives the fact that it is always the lowest item that controls participle agreement.

The case of participle agreement with multiple clitics constitutes evidence in favor of the proposal of Nested Agree. In fact, Nested Agree provides a simple explanation for the data in (37): the domain of the ϕ-probe on the EF is restricted to the lower clitic by the previous Agree-component of the EF.

In what follows, I illustrate my proposal with the derivation for clause (37-a). The relevant configuration is represented in (40). The complement of v contains two items with an unchecked [·T·] feature: the indirect object in Spec,Appl and the direct object in Comp,V. I propose that a single EF is inserted, as the external arrow in (40) indicates.

(40)
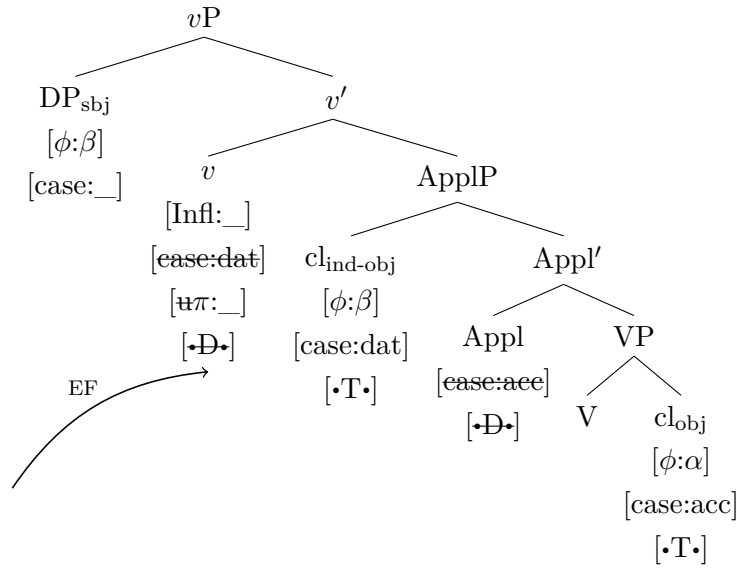
The Agree-probe [u(·T·)] of the EF can undergo Multiple Agree, as shown in (41). First of all, it targets the higher clitic, as minimality prescribes. Then, it goes on and reaches the lower clitic, too. The search domain is now exhausted, with the consequence that the Agree-component of the EF must stop. Now the ϕ-probe of the EF must be discharged. Due to Nested Agree, it must target the last checked goal, which is the lower clitic. The higher clitic lies outside the domain of this probe, instead. Hence, the EF copies *only* the ϕ-features of the lower item. After this step, the domain is exhausted and the ϕ-probe

stops. Finally, the Merge feature of the EF must be discharged. Assuming that Merge features are not subject to Nested Agree, the [·T·] feature first raises the indirect object, which is the highest constituent bearing the unchecked feature. Secondly, it raises to an outer specifier the direct object. I represent the operations related to the EF in tree (41).

(41)
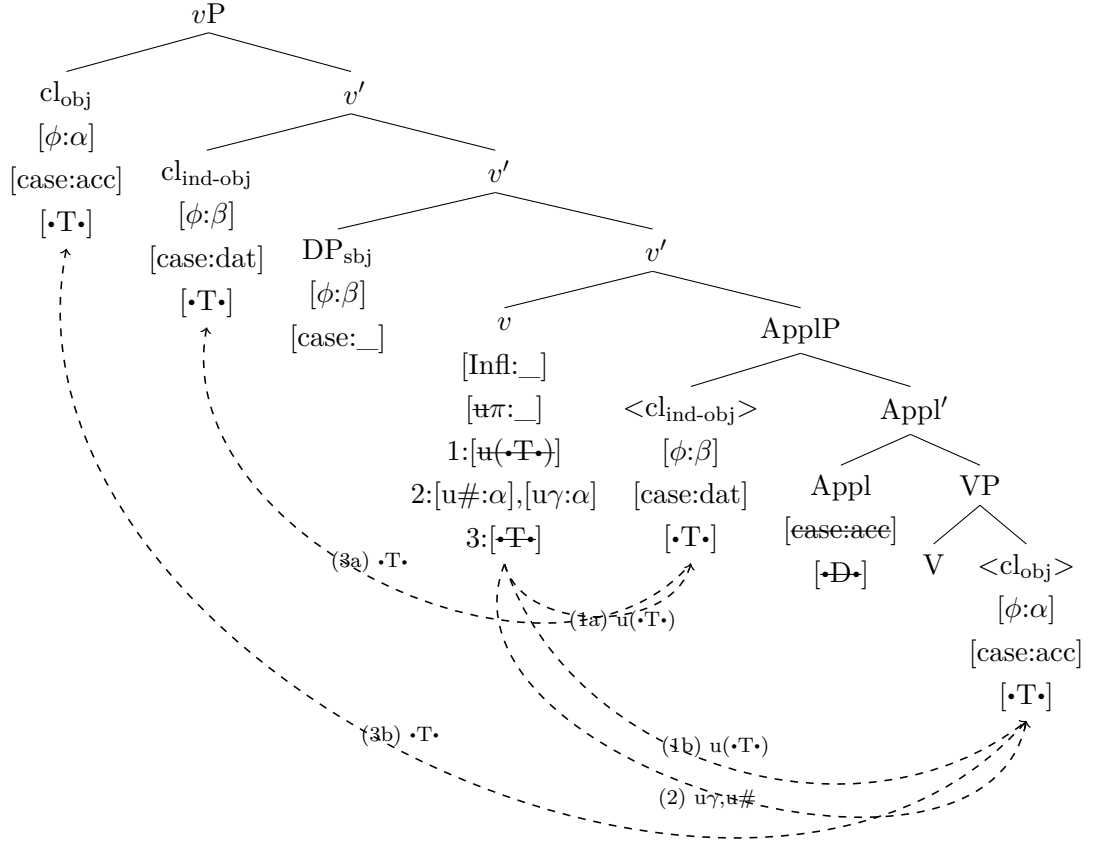
In the present derivation, I have considered Merge features as not being subject to Nested Agree. In this sense, Nested Agree is a constraint just on ordered instances of Agree. It might instead be the case that this principle constraints all ordered operations in general, including structure building operations. If this is the case, then the course of the derivation is different. Let me now explore this alternative scenario (cf. also section §2.6 in chapter 2 for the possibility of applying Nested Agree to Merge operations).

Once the ϕ-probe has targeted the lower clitic and has exhausted its domain (arrow (2) in tree (41)), the Merge component of the EF must be discharged. If this is subject to Nested Agree, it has to start its search from the last probed item, which is the lower clitic. Hence, the [·T·] component of the EF moves the lower clitic to the outer specifier of v.

Now the last checked position is Spec,v. The downward domain of the Merge feature is not exhausted, but instead it has been enlarged again by the operation that has created the outer Spec,v. Hence, the EF-Merge-feature on v can scan again its c-command domain starting from v (since the last stored position is Spec,v, which c-commands v). Now [·T·] continues its search and finds the higher clitic. It moves it to another outer Spec,v. Again, the Merge feature restarts its downward search. However, now that the two clitics have been moved there is no matching feature in the structure. The domain is now exhausted, and the EF-Merge-feature becomes inactive.

The two derivations (the former where Merge is free, the latter where Nested Agree constrains Merge as well) differ only for the respective order of the clitics in the outer specifiers of v. In the former, represented in tree (41), the direct object lands in the outermost specifier; in the latter, the order is switched with respect to tree (41) and the outermost specifier hosts the indirect object. The respective position of the clitics can then be adjusted by some linearization rules in both cases.

To sum up, I propose that for each type of unchecked feature only a single EF can be inserted on a phase head. Moreover, the EF-components are able to undergo Multiple Agree. This allows to derive the fact that agreement on the participle is always controlled by the lower clitic, in case of multiple clitics.[25] Cf. also section 4.4.6.1 for a further extension of this proposal to a single, generic EF$_A$ for unchecked A-features.

4.4.5.1 Movement paths

In the previous section, I have discussed the movement paths of multiple clitics within the same clause. In tree (41), the clitics are base-merged in such a position that the indirect object c-commands the direct object (IO > DO). If the IO moves before the DO, as minimality prescribes, the IO occupies an inner specifier of v, the DO an outer one, as

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[25] Let me briefly sketch some possible alternative solutions, which I do not adopt here. An alternative option is the insertion of two EFs, instead of a single one. Under the assumptions that (i) these two EFs are inserted simultaneously, (ii) their sub-parts are ordered with respect to each other, (iii) all Agree features must be discharged before the Merge features, and (iv) ϕ-Agree comes after all other instances of Agree, then the features are ordered in a queue as in (i) (the subscriptions 1 refers to the first EF, 2 to the second one).

(i) $[u(\cdot T\cdot)]_1, [u(\cdot T\cdot)]_2 \succ [u\gamma, u\#]_1, [u\gamma, u\#]_2 \succ [\cdot T\cdot]_1, [\cdot T\cdot]_2$

In the array in (i), $[u(\cdot T\cdot)]_1$ targets the higher indirect object, $[u(\cdot T\cdot)]_2$ the lower direct object. The direct object can be reached by the second $[u(\cdot T\cdot)]$ feature in apparent violation of minimality ($[u(\cdot T\cdot)]_2$ should probe again the indirect object, which is the highest matching goal) if the Agree-component of EF is a matching-feature that leaves an index on its goal. Next, $[u\gamma, u\#]_1$ agrees with the direct object, given Nested Agree. The ϕ-features are copied from the lowest category, which is the last one to be targeted by the Agree-component of the EF. The second probe $[u\gamma, u\#]_2$ must also probe the same clitic, as the principle of Nested Agree forces. As a result, both EFs have copied the ϕ-value from the same clitic, namely the lower one, without any conflict. Then, the Merge features proceed as sketched before (either subject or not subject to Nested Agree).

Alternatively, one could make use of an overwriting mechanism that "updates" the set of ϕ-features every time that something is moved across the EF. One could have either just a single EF, or two EF-features. If there is just one EF, it must undergo Multiple Agree and its feature values must be updated to those of the last probed item. If there are two, the last one completely overwrites all the preceding instances of EFs.

shown in tree (41). Hence, in the intermediate landing position Spec,v, the clitics exhibit an inverted order (DO > IO). This has the consequence that the DO cliticizes as first on T, appearing closer to the verbal inflection than the IO, in accordance with the surface string (cf. example (37-a) *Teresa se=li=è mangiat-i*: IO=DO=T). Hence, the linear order IO=DO=T is predicted under the movement paths that I have assumed in tree (41), with the intermediate non-preserving order step in Spec,v. This configuration is achieved under *nesting paths* of movement, illustrated in tree (42), where the lower argument moves to a higher position than the higher argument (for similar analysis, cf. *leapfrogging* in Bobaljik 1995; Ura 1995; McGinnis 1998; Doggett 2004; Branigan 2014). Alternatively, the clitics could move in an order preserving fashion, with *crossing paths* of movement, represented in tree (43).

(42) Nesting paths
order: IO-DO-T

(43) Crossing paths
order: DO-IO-T
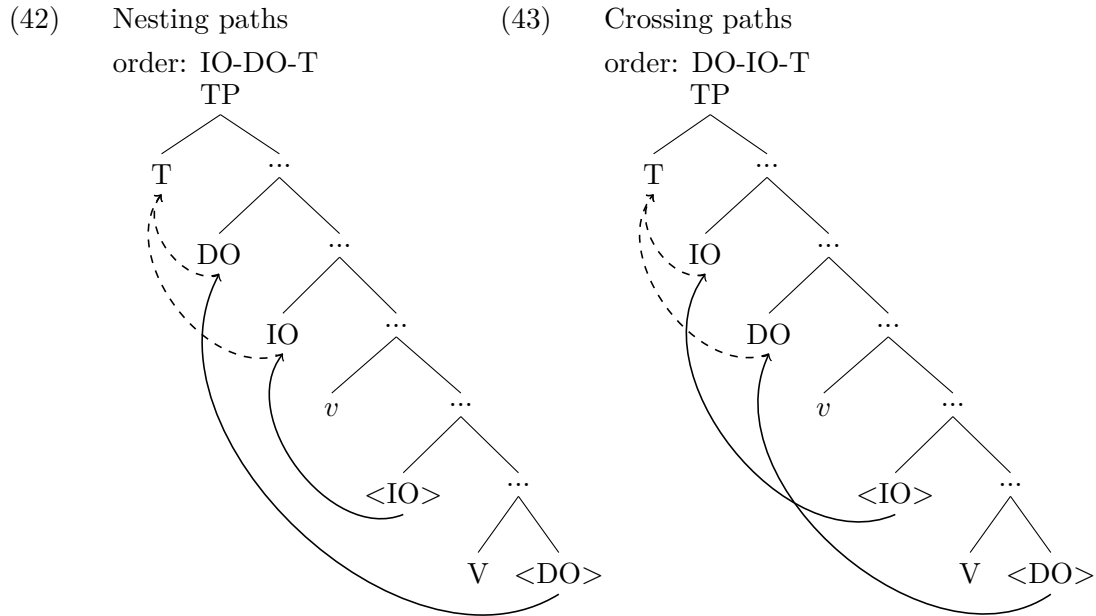
In the literature, there is an open discussion on multiple movement paths. The analysis proposed in the above section makes use of nesting paths because they are generated in accordance with minimality and they derive the actual linear order. In contrast, it has been claimed that attraction of multiple categories by the same type of feature on the same head preserves the asymmetric c-command relation between those categories as they hold before movement, as shown in tree (43) (cf. Heck 2016: 49 and references therein: Richards 1997, 2001; McGinnis 1998; Müller 2001; Bruening 2001; Sells 2002; Anagnostopoulou 2003; Williams 2003). Although this might not be the most intuitive approach in the present case, it could in principle be possible that the clitics move via crossing paths. My analysis is compatible both with crossing paths, as the works cited above suggest, and with nesting paths, as I have assumed in the present study. The issue of linearization is a separate problem that can be addressed in different ways. I do not enter here the discussion on the linearization of the two clitics in T. Cardinaletti (2008)

has investigated the complexity of clitic clusters in Italian, where probably more than one syntactic projection is involved as the landing site of the clitics and not every position is available for every clitic. Hence the actual order of the clitics in the string can be derived by resorting either to different syntactic positions, or to morpho-phonological linearization rules.

Note, however, that the derivation of crossing paths requires some further machinery. In general, Tucking-in (Richards 1997) is the most commonly adopted approach for the derivation of order preserving movement (especially when the involved items have been probed by the same type of feature, McGinnis 1998). In this dissertation, I exclude the use of Tucking-in because it imposes a weakening of the Strict Cycle Condition. Alternatively, crossing movement paths can be generated if the goals that are attracted by the same single probe are temporarily stored on a stack in the workspace, and are re-merged in the landing position with the same respective order (this is possible because the stack has the property that the latest removed item is the first to be re-merged) (Doggett 2004; Heck and Himmelreich 2016; Heck 2016).

4.4.6 Unaccusative verbs

Unaccusative participles agree for gender and number with the internal argument, which is the surface subject, as shown in (1-a), repeated here again.

(44) Teresa è   uscit-a.
      Teresa be.PRS.3SG go.out.PRTC-SG.F
      'Teresa has gone out.'

This is due to the defectiveness of unaccusative v, which is not a case assigner. The following tree corresponds to the tree (43) of chapter 3. The external arrow indicates the operation of EF-insertion.
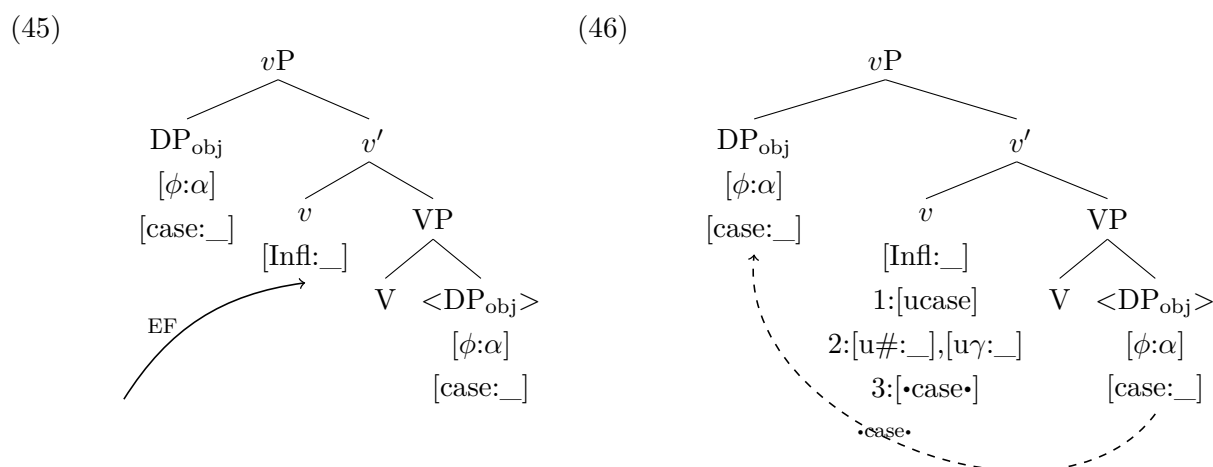
Since defective v is not a case assigner, when the phase vP is completed, there is still an

unchecked feature in the complement, namely the case feature on the DP. This DP must escape the complement of the phase, since it cannot undergo Spell-out with an unchecked case feature. Therefore, an edge feature is inserted on the phase head v. EF copies the ϕ-features of the DP and moves it to the specifier of v. From Spec,v, the DP remains accessible for the higher case assigner T. Because of EF-insertion, v ends up bearing a value for gender and number (but not for person, since it does not contain a person probe in its featural inventory).

When Perf is merged, it agrees with v for [Infl]. Subsequently, given Nested Agree, it probes again v for [π]. However, v does not contain such a feature. It bears a subset of ϕ-features, namely # and γ, but not π. The relevant person feature is neither located on that head (which does not contain any π-probe), nor it is entailed by gender and number (given the adopted feature geometry, where person, number and gender are separated branches below the node ϕ). In other words, v is not a matching goal for person-Agree on Perf, despite the presence of the EF-related ϕ-features. In addition, there is no other possible goal in the structure: the complement of the phase is inaccessible, due to the PIC (and, anyway, empty after the movement of the DP) and the positions above v, such as Spec,v where the internal argument is now located, are not accessible anymore due to Nested Agree. Thus, Agree on Perf fails and the elsewhere form BE is inserted at Spell-out (cf. chapter 3 for details).

(47)
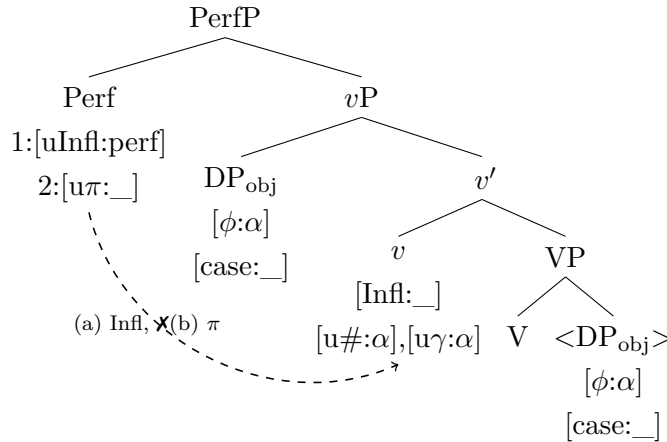
When T is merged, it searches for a DP for the purpose of nominative case assignment. It finds it in the accessible position Spec,v and assigns it case. It also agrees with it in ϕ-features and moves it to its specifier.

(48)

TP
- DP_obj
  - $[\phi:\alpha]$
  - [case:nom]
- T′
  - T
    - 1:[T:pres]
    - 2:[ucase:nom]
    - 3:[uπ:__]
    - 4:[•D•]
    - (c) •D•
  - PerfP
    - Perf
      - [uInfl:perf]
      - [uπ:__]
    - vP
      - <DP_obj>
        - $[\phi:\alpha]$
        - [case:__]
      - v′
        - v
          - [Infl:perf]
          - [u#:α],[uγ:α]
        - VP
          - V
          - <DP_obj>
            - $[\phi:\alpha]$
            - [case:__]

(a) case, (b) π
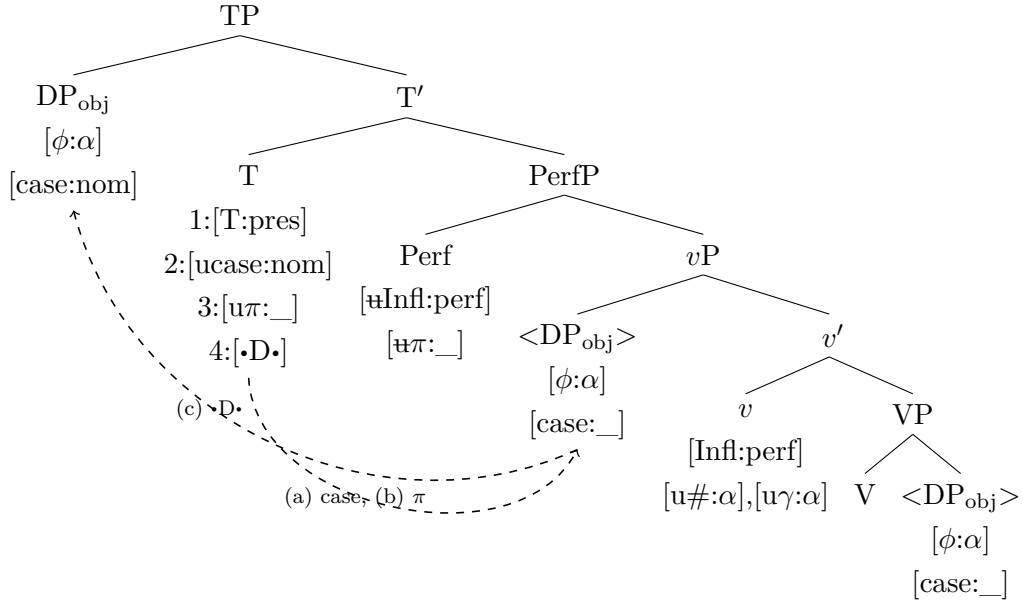
At Spell-out, v is realized as a past participle, due to [Infl:perf]. Participle agreement realizes the feature of the unaccusative subject, copied by the EF on v.

4.4.6.1 Unaccusative verbs with the clitics *ci* and *ne*

In light of the discussion of multiple movement paths in section §4.4.5, the reader may wonder what happens when the unaccusative clause contains a clitic pronoun. The only clitics that can be dependent on an unaccusative verb are the locative *ci* 'there', the quantitative (partitive) *ne* 'of', and the impersonal *si* (cf. section 4.4.7.3). Unaccusative verbs are monoargumental verbs, where the sole DP receives nominative case. In Standard Italian, nominative clitic pronouns do not exist (differently from the Northern dialects). Therefore, the unaccusative subject cannot be realized as a clitic. Given the presence of a single argument, reflexive pronouns are also excluded as arguments of these verbs (because of *Principle A*, Chomsky 1981). In contrast, the partitive *ne* can be found with unaccusative verbs because it is related to the internal argument position.[26] Similarly, the locative clitic *ci* can be an adjunct of an unaccusative predicate (and also of an unergative verb: *ci=ho vissuto* 'I have lived there'). Finally, also impersonal *si* can be the argument of an unaccusative verb (and also of unergative and transitive predicates). In contrast, all other person clitics are excluded with unaccusative verbs because of the incompatibility of clitics with nominative case, and of unaccusative v with accusative case.

Let us now look at sentences with the locative *ci* 'there' and the quantitative (partitive)

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[26]Here I do not commit to any specific representation of the clitic *ne*. This clitic has been traditionally used as a diagnostic test for unaccusativity because it should allow to distinguish the base position of the intransitive argument (Perlmutter 1978; Burzio 1986). However, some studies have shown that *ne* extraction is possible also from unergative structures (cf. Lonzi 1986; Bentley 2004, 2011; Cerrone and Sprouse 2019). The only relevant point here is that the clitic *ne* can be found in dependence of an unaccusative verb.

ne 'of'. If one (or both) of these clitics is present in the structure, both the clitic and the nominative object move out of their base position; however, the finite verb and the participle agree with the internal argument. As examples (49) show, participle agreement does not change in the presence of such clitics.

(49)   a.   Teresa ci=è   andat-a.
            Teresa there=be.PRS.3SG go.PRTC-SG.F
            'Teresa has gone there.'

       b.   Di ragazze, ne=è   andat-a   via   una.
            of girls   of=be.PRS.3SG go.PRTC-SG.F away one.SG.F
            'Of girls, one of them has gone away.'

       c.   Di ragazze, ce=ne=è   andat-a   una.
            of girls   there=of=be.PRS.3SG go.PRTC-SG.F one.SG.F
            'Of girls, one of them has gone there.'

In section §4.4.5, I have argued that only a single EF is inserted, which copies the ϕ-features of the last moved item (in general, the object). This predicts that agreement is always controlled by the unaccusative argument, as confirmed by (49). However, in section §4.4.5 I have proposed that there is a single EF for each type of unchecked feature (one for clitics, one for DPs without case, and so on). In the present example, there are two different types of unchecked features, [case:__] and [•T•]. Hence, there should be two EFs on v (one for [case:__], one for [•T•]).

I think that this fact encourages to further implement the proposal of a single EF. I argue that, instead of having a single EF for each type of unchecked feature, there is only a generic EF for A-movement, EF_A, which deals with all instances of unchecked A-features in its c-command domain. The analysis proposed in section §4.4.5 can be successfully extended to cases such as (49). If only a single EF is inserted, whenever the object must escape the phase domain, it being a clitic or an unaccusative argument, it will control participle ϕ-agreement.

If the proposal of a single, generic EF_A is instead rejected, two distinct EFs must be inserted when an unaccusative clause contains a clitic pronoun. If two EFs are used, one should resort to another strategy in order to derive the pattern in (49). In what follows, I will briefly discuss some alternative approaches, although I argue that the derivation of clauses (49) involves a single EF.

For the locative clitic *ci*, a possibility is that this clitic is base-generated in a higher position with respect to v: in Spec,v, in a LocP and so on. Since Agree is possible only downwards, the clitic does not interfere with participle agreement on v, in accordance with Belletti's generalization, which excludes participle agreement with the external argument (and, consequently, with anything in a position at least as high as the external argument position).

Another hypothesis considers the clitic *ci* as encapsulated into a K(P) shell as dative DPs are, so that it cannot be targeted by Agree. A last possibility could be that this

clitic is featurally defective. Let us assume that it contains ϕ-features, as other DPs do, but these are unvalued. Therefore, when *ci* moves to Spec,*v*, the first EF cannot find any gender and number value to copy. The second EF agrees with the DP$_{obj}$. Hence, only the features of the object will be represented on *v*, leading to standard object agreement (as in the configuration in (36)).

Under this analysis, the featural array on the clitics *ci* and *ne* should be as follows.

(50)   a.   *ci*: [D], [•V•], [•T•], [π:__], [#:__], [γ:__]
        b.   *ne*: [D], [•V•], [•T•], [π:__], [#:__], [γ:__]

In the previous literature, the clitic *ne* is considered a non-referential deficient element that requires a discourse antecedent (Cardinaletti and Starke 1999). The unvalued features receive a value if the clitic is bound by an antecedent (which can only be third person), as in (51).

(51)   Di studenti$_i$, ne$_i$=sono   venut-i   molti$_i$.
        of students of=be.PRS.3PL come.PRTC-M.PL many
        'Of students, many have come.'

Based on the vowel on the clitics, on the position of the clitics in the string and on the possible clitic clusters, Cardinaletti (2008) has proposed a division between person clitics and non-person/number clitics (cf. also Kayne 1994). Under her analysis, *ne* belongs to the subgroup of non-person clitics, which are considered not to contain any person feature, but only number and gender, as shown by obligatory participle agreement (Cardinaletti 2008: 57). In particular, gender and number values are inherited from a quantifier via binding (Cardinaletti and Giusti 2017: 68). As far as the locative clitic *ci* is concerned, it is considered to belong to the series of person pronouns. In particular, it should be the same lexical item as the first person plural pronoun *ci* (Cardinaletti 2008: 33). Differently from Cardinaletti (2008), one could perhaps argue that also the clitics *ci* bears unvalued ϕ-features as *ne* does, whereas all pronominal clitic DPs (except the reflexive and the impersonal clitics) bear person features, as sketched in (50).[27]

Turning now to the quantitative clitic *ne*, it should be noted that the clause in (49-b) contains the quantitative clitic *ne* and the existential quantifier *una* in postverbal position. Hence, unaccusative sentences with partitive *ne* (52-a) are similar to unaccusative sentences with postverbal subjects (52-b), which I discuss in section §4.5.

(52)   a.   Di ragazze, ne=è   andat-a   via   una.
              of girls   of=be.PRS.3SG go.PRTC-SG.F away one.SG.F
              'Of girls, one of them has gone away.'

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[27]This proposal differs from the idea that this kind of clitic is marked for third person, which has been introduced by Nevins (2007) in order to account for the clitic dissimilation in Spanish and in Italian. Cf. Cardinaletti (2010: 252) for discussion against Nevins (2007).

b.   È   andat-a   via   una   ragazza.
       be.PRS.3SG go.PRTC-SG.F away one.SG.F girl
       'One girl has gone away.'

The question is whether participle agreement in (52-a) and in (49-b) is controlled by the postverbal quantifier or by the partitive clitic.

Under the former hypothesis, the source of agreement in (49-b) is the quantifier *una* (the unaccusative subject) and not the quantitative clitic *ne*. In the same way as the participle can agree with the DP in situ in (52-b), it can also agree with the existential quantifier in situ in (52-a). In this case, the clitic *ne* is not a goal for the ϕ-probe on the EF for one of the reasons mentioned above (presumably because there is just a single EF in the structure, as proposed in section §4.4.5).

Under the latter hypothesis, agreement in (49-b) is controlled by the clitic and not by the postverbal subject. Note that the clitic *ne* can indeed control participle agreement, as shown by transitive clauses (53-a), where the direct object should not control agreement (53-b), unless it is an accusative clitic (53-c,d).

(53)   a.   Ne=ho   conosciut*o/-i/-e   molt-i/-e.
              of=have.PRS.1SG know.PRTC/-PL.M/-PL.F many.-PL.M/PL.F
              'I have met many of them.'

      b.   Ho   conosciuto/*-e   molte   studentesse.
              have.PRS.1SG know.PRTC/-PL.M many.-PL.MF students.PL.F
              'I have met many students.'

      c.   Li=ho   conosciut*o/-i.
              ACC.3PL.M=have.PRS.1SG know.PRTC/-PL.M
              'I have met them.'

      d.   Ci=ho   parlato/*-a/*-i/*-e   ieri.
              DAT.3SG=have.PRS.1SG speak.PRTC/-SG.F/-PL.M/-PL.F yesterday
              'I have spoken with him/her/them yesterday.'

(Cardinaletti and Giusti 2017: 43)

As for its ability to control agreement, *ne* behaves similarly to other accusative DP clitics (53-c) and differently from oblique PP clitics (53-d). The presence of participle agreement with the partitive clitic in transitive clauses (53-a) has been used as an argument for considering the clitic *ne* a DP (Cardinaletti and Giusti 2017: 43). That the clitic *ne* can control agreement is expected, since it is generally assumed that it originates in the object position as a part of the DP from which it is extracted (Burzio 1986: 23-36). According to Cardinaletti and Giusti's (1992; 2017) analysis, *ne* is a clitic pronoun DP that is the complement of a quantifier and can be extracted from quantifiers in object position. The quantitative clitic pronoun has third-person feature, and it is a syncretic form that stands for any number and gender features. This clitic not only receives partitive case from the selecting Q, but it also shares its ϕ-features. Being part of the same QP, they share the same syntactic features (Cardinaletti and Giusti 2017).

Therefore, the quantitative clitic triggers participle agreement in (53-a) because it is extracted from the object position and it bears valued ϕ-features. Given example (53-a), it could also be the case that in (49-b) participle agreement is due to the presence of *ne* and not to the object in situ. However, since both the clitic and the quantifier share the same set of ϕ-features, no conflict in ϕ-features arises. I conclude that agreement in (49) is controlled by the direct object, since when the object moves it always triggers agreement, as explained in section §4.4.5 (but, in principle, the partitive clitic could also control agreement).

To conclude, independently of this discussion, I have proposed that a single edge feature EF_A is responsible for movement of multiple items and for participle agreement being controlled by the item in the lowest base-position (cf. also section §4.4.5).

4.4.7 Other derivations with unchecked case

Similarly to unaccusative verbs, participle agreement is due to an unchecked case feature on a DP also in passive structures, with quirky verbs, in impersonal clauses. In this section, I briefly discuss these cases.

4.4.7.1 Passive clauses

Let us start with passive predicates. In the previous chapter 3, I have proposed that passives contain a further projection called $Voice_{pass}$, which is a phase boundary, as shown by the presence of participle agreement both on the passive participle and on the past participle in (54-a). Example (54-a,b) show a passive clause in the present tense and in the perfect tense.

(54)　　a.　Teresa è　　　　　promoss-a.
　　　　　　Teresa be.PRS.3SG promote.PRTC-SG.F
　　　　　　'Teresa is promoted.'

　　　　　b.　Teresa è　　　　　stat-a　　　　promoss-a.
　　　　　　Teresa be.PRS.3SG be.PRTC-SG.F promote.PRTC-SG.F
　　　　　　'Teresa has been promoted.'

In the present tense (54-a), the lexical verb appears in the form of a participle, due to the presence of a passive Voice. The agreeing participle is the passive participle, which has the same phonological form of an active past participle. In the perfect tense (54-b), both the lexical verb and the passive auxiliary are spelled out as participles. The lexical verb shows up as a passive participle because of the passive Voice, which takes v as its complement. The passive auxiliary is realized as a past participle due to the presence of the perfect head.

The derivation up to PerfP for a sentence such as (54-b) is represented in tree (55).

(55)
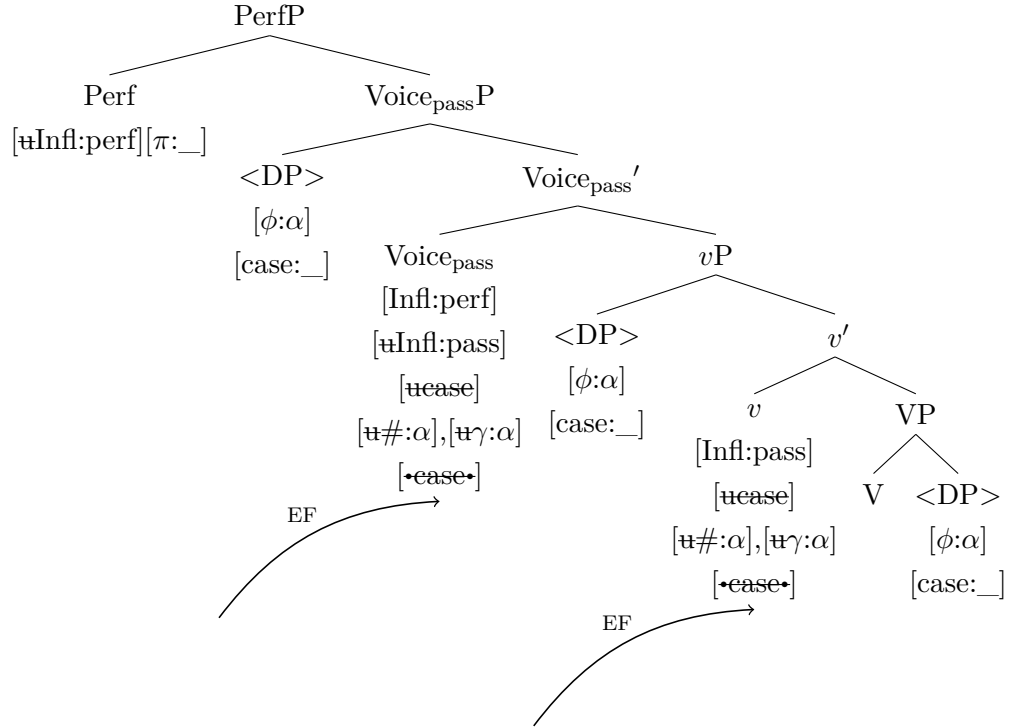
As the tree shows, the internal argument moves through Spec,v and Spec,Voice$_{\text{pass}}$ (before reaching its final landing site in Spec,T). This is because passive Voice selects for a defective v, which is not a case assigner (cf. section §3.3.6 in chapter 3 for details). The internal argument cannot receive case until T is merged in the structure. Therefore, it must move first to the edge of v, then to the edge of Voice$_{\text{pass}}$. This is achieved by EF-insertion first on v and then on Voice. Both edge features copy the number and gender feature of the internal argument. Gender and number inflection is realized on both participles, as example (54-b) shows. This is due to the vocabulary entries in (56-a,b), which must be added to the vocabulary entries that I proposed in (18), repeated here again in (56-c).

(56)   a.   /participle agreement for α/ $\leftrightarrow$ v[Infl:pass],[γ:α],[#:α]
       b.   /participle agreement for α/ $\leftrightarrow$ Voice$_{\text{pass}}$[Infl:perf],[γ:α],[#:α]
       c.   /participle agreement for α/ $\leftrightarrow$ v[Infl:perf],[γ:α],[#:α]

The rule (56-a) realizes v as a participle with morphological inflection when v bears the feature [Infl:pass] and the relevant gender and number features. The Infl-feature is valued as *pass* when it is selected by a Voice$_{\text{pass}}$, as in the passive clauses (54-a) and (54-b). The rule (56-b) realizes Voice$_{\text{pass}}$ as an agreeing participle when it is selected by the projection Perf, with which it agrees for the feature [Infl:perf]. In other words, the rules in (56) show that a v or Voice head is spelled out as a past participle when it bears the feature [Infl:perf], and with a passive participle when it bears [Infl:pass]. Both morpho-syntactic features correspond to the same exponent: a participle. ϕ-inflection depends on the presence of

gender and number features on the head, which are due to edge feature insertion.

4.4.7.2 Quirky verbs

Going now to the case of quirky verbs, here the participle agrees with the nominative internal argument. Example (57-a) contains a quirky verb in the present tense, example (57-b) in the perfect tense.

(57) a. A Teresa   piacciono   questi panini.
          to Teresa.DAT.3SG.F like.PRS.3PL these   sandwiches
          'Teresa likes these sandwiches.'
      b. A Teresa   sono   piaciut-i   questi panini.
          to Teresa.DAT.3SG.F be.PRS.3PL like.PRTC-PL.M these   sandwiches
          'Teresa liked these sandwiches.'

In section §3.3.8 of chapter 3, I have explained that the internal argument cannot receive case from v because this type of quirky v is not a case assigner. Consequently, the direct object must move (covertly or overtly) to the edge of the phase v in order to remain accessible for the head T, in order to receive nominative case. This is exactly the very same scenario as for unaccusative verbs. An EF must be inserted on v, which consequently copies the number and gender value of the moved DP. At Spell-out, an overt exponent realizes the values on v, given the metarule proposed in (18) and repeated here again.

(58)   /participle agreement for α/ $\leftrightarrow$ v[Infl:perf],[γ:α],[#:α]

It is noteworthy that a sentence such as (57-b) shows the additional complexity of the surface position of the internal argument, which seems not to have moved from its base position (although it can also surface in the surface subject position: *questi panini sono piaciut-i a Teresa*). I will talk about this issue in section §4.5, which deals with EF-agreement with DP in situ.

4.4.7.3 Impersonal clauses

Moving on to impersonal clauses, if the predicate is a transitive verb two scenarios are possible: in (59-a), the participle does not show agreement and the finite verb is in third person singular, while in (59-b) both the finite verb and the past participle agree with the internal argument.

(59) a. Si=è   mangiato gli spaghetti.
          IMPERS=be.PRS.3SG eat.PRTC the spaghetti
      b. Si=sono   mangiat-i   gli spaghetti.
          IMPERS=be.PRS.3PL eat.PRTC-PL.M the spaghetti
          'One has eaten the spaghetti.'

In section §3.3.9.2 of chapter 3, I have argued that this distinction comes about by means

of two possible derivations: Voice$_{\text{impers}}$ may select either a transitive v or a defective v. I have proposed that cases without agreement (59-a) can be explained by assuming a transitive v. If v is non-defective, it assigns accusative to the internal argument, with the consequence that no EF is needed and no participle agreement arises (unless the object is a clitic, as is expected: *la=si=è mangiat-a* 'one has eaten it(sg.f)'). In addition, the impersonal argument is introduced by v, but it is raised by the [•D•] feature on Voice$_{\text{impers}}$, so that the clitic *si* does not trigger EF-insertion.

In contrast, cases with participle agreement (59-b) are due to a defective v that does not assign case to the internal argument, leading to EF-insertion. This is the very same situation as for passive predicates. Given the presence of an unchecked case feature in its complement, v is assigned an edge feature. This EF copies the gender and number features of the internal argument, which will be spelled out as participle agreement. In this derivation, the impersonal *si* is introduced in Spec,Voice$_{\text{impers}}$. Consequently, it does not require any EF insertion.

Participle agreement in impersonal clauses with unaccusative verbs, shown in (60), can be explained in the very same way.

(60)　Si=è　　　　　　　　partit-i　　　presto.
　　　IMPERS=be.PRS.3SG leave.PRTC-PL.M early
　　　'One has left early.'

In impersonal unaccusatives, the impersonal clitic *si* is base-merged in the internal argument position. The only possible v is defective (because unaccusative verbal roots cannot combine with a full argument structure v), which does not assign case. Consequently, the clitic *si* in the internal argument position bears the unchecked [•T•] and [case] features. Hence, an EF must be inserted on v, giving rise to participle agreement. The impersonal clitic bears an unvalued person feature, but its number is valued as plural (cf. section §3.2.4.2 in chapter 3). This is why the inflection on the participle is plural (while both gender values are possible: the sentence *si=è partit-e presto* is equivalent to (60), when the impersonal pronoun refers to a female group).

4.5 Participle agreement in absence of overt movement

As I have already highlighted throughout this chapter, there are some cases where participle agreement does not seem to originate from A-movement. In such sentences, the argument that controls agreement apparently remains in its base position. For example, the unaccusative subject can surface in the object position, and still it triggers agreement on v, as (61-a) shows. Another case is the impersonal transitive clause in (61-b), where the participle agrees with the object in its base position. Similarly, the same configuration arises with quirky verbs, as mentioned in section §4.4.7.2. Another example is the reduced clause in (61-c), where the participle agrees with the direct object in situ, contrary to

what happens in root clauses.

(61)   a.   Sono   arrivat-e   le   ragazze.
              be.PRS.3PL arrive.PRTC-PL.F the girls
              'There have the girls arrived.'

         b.   Si=sono   mangiat-i   gli spaghetti.
              IMPERS=be.PRS.3PL eat.PRTC-PL.M the spaghetti
              'We have eaten the spaghetti.'

         c.   Mangiat-i   gli spaghetti, le   ragazze uscirono.
              eat.PRTC-PL.M the spaghetti   the girls   go.out.PST.3PL
              'Having eaten the spaghetti, the girls went out.'

First of all, let me stress that in all these structures in (61) there is a problem not only for participle agreement, but also for case assignment and agreement on the finite verb. If we look for example at (61-a), we see that the finite auxiliary in T agrees with the nominative object in situ. This should not be possible under the phase theory, which makes the internal argument position opaque for operations triggered by heads that are higher than the phase v. In the literature, there are different proposals that aim at explaining how the internal argument can remain accessible to T.

One way is to assume that the Phase Impenetrability Condition (PIC) does not constrain Agree (Bošković 2007: 613-618): when the phase complement is sent to Spell-out, its morpho-syntactic features remain available for further operations. In this dissertation, I do not adopt this proposal because I assume strict cyclicity (with a strong interpretation of the Strict Cycle Condition) as a principle of grammar, which all types of features (structure building and operation triggering features) are subject to.[28]

Another way to generate long distance dependencies across phase boundaries is *Cyclic Agree* (Legate 2005): Agree between an otherwise inaccessible item is mediated by an intermediate head. Agree on the higher head targets this intermediate head instead of the more embedded item. Note that the analysis of auxiliary selection presented in this dissertation resembles Cyclic Agree, as far as Agree between Perf and v for the features of the object is concerned. The object is not accessible for Perf given the PIC, but it becomes visible if v agrees with the object, and Perf agrees with v (i.e., v acts as an intermediate head that allows Cyclic Agree). In sentences (61-a,b), agreement between T and the object and nominative case assignment to the object could be explained by adopting a proposal such as Cyclic Agree. However, this approach leaves unexplained the reason why the object in situ of a transitive verb does not agree with the participle.

If the participle agrees with the object in situ under certain circumstances, two hypotheses are possible. Either participle agreement is not due to EF, or an EF is involved and then

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[28]For those cases of agreement that seem to involve items across a phase boundary, I think that it is possible to provide an analysis in accordance with the PIC, either via covert movement (Polinsky and Potsdam 2001, 2013), via clause-union effects (Butt 1995; Boeckx 2004; Bhatt 2005; Bobaljik and Wurmbrand 2005), or via Cyclic Agree (Bhatt 2005; Legate 2005). Cf. Richards 2012; Bhatt and Keine 2017 for discussion.

the problem turns into why the EF does not move the DP. If participle agreement is not due to EF, then another theory of participle agreement must be developed, such that it is able to distinguish a pattern as in (61-a) from agreement with a transitive object in situ (which is ungrammatical). I have already highlighted the flaws of previous analyses of participle agreement and the reasons for providing a new theory, which must be compatible with auxiliary selection. Hence, I will not take this route. Instead, in accordance with the proposal developed in this dissertation, I argue that participle agreement in sentences where the controller DP seems not to have moved (as in (61)) is still due to edge feature insertion as in other cases with overt DP A-movement. In order to explain how this is possible, I discuss here four possible solutions that share the following ingredients: participle agreement is always due to EF-insertion and the problem of case assignment and finite agreement on T can be solved by the same mechanism that I use for participle agreement. In what follows, I will focus on postverbal DPs as in (61-a,b). I leave out of the present discussion the case of reduced clause (61-c), which I address in section §4.6.

Under the first solution, the EF successfully causes the DP to move and v to agree with it. However, movement is not visible on the surface because everything else moves to other positions as well. In the resulting string, it seems that the object has not moved at all. The DP moves to Spec,v because of the edge feature, thereby triggering participle agreement. The complex head v + V moves to Perf and then to T, leaving the DP in the lower position Spec,v. Under this approach, the surface word order of a sentence such as (61-a) results from the following syntactic structure.

(62)
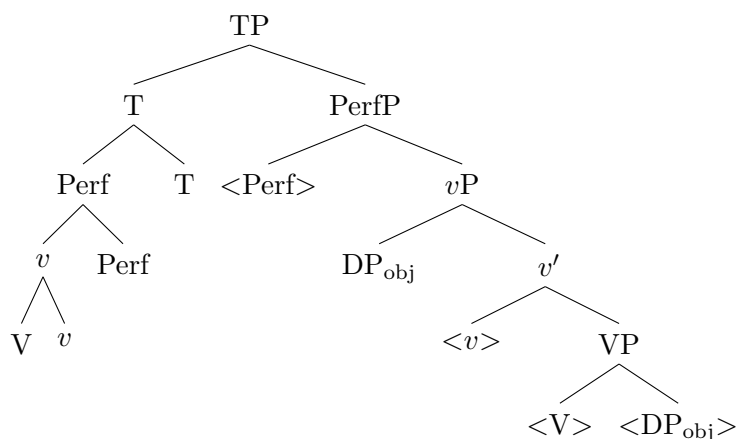
Example (61-a) is reduced to a canonical instance of participle agreement, which is due to EF-insertion for an unchecked feature and which correlates with the DP movement. EF-movement always takes place, but it is actually made invisible by movement of the other constituents.

If the internal argument is located in Spec,v, then it should be possible to find sentences where adverbials that generally show up before the object can be located after the object. This would be evidence for the EF-movement of the object to a higher position. However,

this does not seem to be the case.

Cinque (1999) has shown that in Italian the active past participle moves above the position of the low adverbs *tutto* 'all' and *bene* 'well' (differently form French). The position where we can find the active past participle are the following (Cinque 1999: 147).

(63)   mica ✓ già   ✓ più ✓ sempre ✓ completamente ✓ tutto ✗ bene ✗
       not   already   ever   always   completely   all   well

The adverb *bene* should be located in a lower position than Spec,v, since it must obligatorily follow the participle that is in v (although the participle can further move to Perf). In fact, in canonical transitive clauses *bene* can precede or follow the direct object (64).

(64)   Transitive clause: bene > DO, DO > bene

      a.   Teresa ha   fatto   bene i   conti.
          Teresa have.PRS.3SG do.PRCT well   the counts

      b.   Teresa ha   fatto   i   conti   bene.
          Teresa have.PRS.3SG do.PRCT the counts well
          'Teresa has done the counts well.'

Let us look at the respective positions of the direct object and of the low adverbial *bene* in sentences such as (61-a), (61-b). In unaccusative clauses with subject in situ (65) or impersonal clauses with object agreement (66), the object has to follow the adverbial *bene*, meaning that it has to stay in a fixed, low position.[29]

(65)   Unaccusative with object in situ: bene > DO, * DO > bene

      a.   Sono   arrivat-e   bene le   ragazze.
          be.PRS.3PL arrive.PRCT-PL.F well   the girls

      b.   *Sono   arrivat-e   le   ragazze bene.
          be.PRS.3PL arrive.PRCT-PL.F the girls   well
          'The girls have arrived well.'

(66)   Impersonal with object in situ: bene > DO, *? DO > bene

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[29]Example (64) shows optionality with respect to the order of the DO and the adverb (Adv > DO, DO > Adv). The loss of the order DO > Adv in (65) and (66) shows that the DO must be realized in a fixed position. This fact could be expected under the covert movement analysis that I will propose in this section. There are two types of covert movement analysis: the LF-movement account and the lower-copy account. In the former approach, the DO is actually in the base-position at Spell-out. Maybe the order DO > Adv is out because LF-movement is not possible if the DO has already moved to a different position than its Merge position (assuming that Adv > DO is the base order). In the latter theory, there is a higher copy and a lower copy of the DP, and the lower copy is spelled out. In order to exclude the order DO > Adv, it could be the case that in Italian either the copy in the landing position is spelled out, or the copy in the Merge position, and the object cannot be phonetically realized in any other position. Note that the same configuration arises in the case of multiple wh-phrases in English, briefly discussed in section §2.6.2.1 of chapter 2. In English, only the higher wh-phrase moves to Spec,C, while the lower wh-phrase must be spelled out in its base position, even though it might have undergone covert movement at least up to Spec,v (cf. 'who has bought what?' and *'who has what bought?'). I refer the reader to footnote 32 in chapter 2 for a short discussion of this case. This fact and the contrast in (64), (65), and (66) suggest that covert movement is subject to constrain on the possible Spell-out position. However, I leave this issue to further research.

a. Si=sono   fatt-i   bene i   conti.
   IMPERS=be.PRS.3PL do.PRCT-PL.M well the counts

b. *?Si=sono   fatti   i   conti bene.
   IMPERS=be.PRS.3PL do.PRCT-PL.M the counts well
   'One has done the counts well.'

Examples (65), (66) show that the object has not moved to Spec,v in these constructions. Hence, these data provide counter-evidence to the hypothesis that EF-movement always takes place, but it is not visible because of other items that simultaneously move.

The second solution consists of covert A-movement. It has been proposed that some instances of A-movement can happen at LF rather than in narrow syntax, in the same way as covert Ā-movement does (Polinsky and Potsdam 2013). For similar data to (61-a), Cardinaletti (1997) has argued that case assignment and agreement with the postverbal DP$_{obj}$ is possible if the DP covertly moves to a preverbal position. This movement is needed for agreement with T and for case assignment. Evidence for movement of the DP to a higher position comes from its ability to control the subject (PRO) of an adjunct clause. If control is possible, this means that the controller DP c-commands the subject PRO. The adjoining position of the infinitival clause is definitely higher than Comp,V, which is the lowest possible position. Since in example (67) the postverbal subject can control into the adjunct clause, the DP must be located in a higher position than its Merge position.

(67)   Sono   entrat-i   due uomini$_i$ [PRO$_i$ senza   neanche
        be.PRS.3PL enter.PRTC-PL.M two men   without even
        identificar=si].
        identify.INF=REFL.ACC.3PL.M
        'Two men have entered without even identifying themselves.'

(Cardinaletti 1997: 524)

In Cardinaletti's (1997) analysis, covert movement is triggered as a last resort operation by the head T that needs to discharge its features (Cardinaletti 1997: 532). This movement can be either overt, as in sentences with preverbal subjects, or covert, as in (67). Movement takes place covertly when Spec,T is occupied by an expletive *pro* that can remain underspecified for case.

In section §4.5.1, I will provide some tests such as control into adjunct clauses in order to detect the actual position of the internal argument in clauses (61). I will conclude that a covert movement analysis should be adopted. My analysis shares with Cardinaletti's (1997) the idea that covert movement is the source for agreement with apparently in situ arguments. The main difference concerns the reason for movement. In her approach, the trigger for movement is the to-be-checked feature of the attracting head T. In this dissertation, it is the to-be-checked feature of the moving item that causes EF-insertion and, consequently, its movement (either overt or covert).

The third idea consists of the extension of the proposal of failed Agree to edge features: the Merge component of the EF may fail to be discharged. "Failed EF" is the reason why the DP stays in situ, but still controls participle agreement. However, in order to explain nominative case assignment and Agree with T, there should be an additional mechanism that keeps the phase open for T. The presence of an unchecked EF on the phase head provokes a *phase sliding* effect (Gallego 2008). If a phase head contains an unchecked EF, then its domain must remain active and transparent for higher heads. The phase is unlocked because it is not ready yet to be sent to Spell-out, despite EF-insertion. In other words, the unchecked edge feature works as a diacritic that delays Spell-out.

Failed EF is a logical possibility, once one admits failed Agree. However, this solution might be problematic as far as the concept of the phase-unlocking is concerned (which should be avoided under a strictly cyclic architecture of grammar), and also for its implementation, since it is not clear which operation allows the interface to see the unchecked EF on the head, and why EF-failure can optionally take place. Hence, I do not pursue this idea.

A last option involves a doubling structure under the *big DP hypothesis* (Uriagereka 1995; Nevins 2011). According to this analysis, in a sentence such as (61-a) there is a *pro* in Spec,T, which is the target of Agree on T and of nominative case assignment. This *pro* originates in the big DP in the object position and moves out of the DP for case reason, thereby leading to participle agreement on v. In other words, the EF moves only a part of the DP, namely the *pro* that realizes the D head, instead of moving the whole DP, most of which remains in situ. The reason why it is possible for the EF to move only a subpart of the DP could be because the unchecked feature on the to-be-moved DP is actually located on the D head (which moves in the form of *pro*) rather than on the N head.

The big-DP-analysis requires a mechanism of feature sharing between the *pro* and the rest of the DP in situ (so that the DP in situ receives nominative case once T assigns it to *pro*). Moreover, it is not clear why it is possible to move a null D head leaving the phonological realized DP in situ in the present case, but it is also possible to move a phonological realized D head leaving the null or overt DP in situ in the case of clitic movement or of clitic doubling. Given these open questions, I do not adopt this analysis.

In this dissertation, I would like to propose an account for participle agreement with postverbal controllers in (61) in terms of covert movement (as Spell-out of the lower copy or as LF-movement).[30] In the next subsection, I propose some tests to show that the DP actually occupies a position higher than the surface one. The conclusion based on the tests is that at some relevant point in the derivation the DP has c-commanded the relevant category (for example, in the test for binding, the anaphor; in the test for control, the

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[30]Recall that examples (65) and (66) seemed to show that the object has not moved from its low position. Actually, the data in (65) and (66) show that that position is not available for Spell-out, but not that the object does not move at all. I propose that these examples indicate that the DO cannot be spelled out in that intermediate position after scrambling across the adverb exactly because of covert movement. Cf. footnote 29 for discussion of how covert movement could explain those data.

element PRO). This means that the object has actually moved out of its base position either at LF (LF-movement theory of covert movement), or in the syntax (lower-copy theory of covert movement).

4.5.1 Tests for the position of the DP

I now present some tests to identify the real position of the unaccusative subject and of the internal argument of impersonal clauses in sentences as (61), repeated here again.

(68) a. Sono   arrivat-e   le ragazze.
          be.PRS.3PL arrive.PRTC-PL.F the girls
          'There have the girls arrived.'

      b. Si=sono   mangiat-i   gli spaghetti.
          IMPERS=be.PRS.3PL eat.PRTC-PL.M the spaghetti
          'We have eaten the spaghetti.'

The tests suggest that the DP is not located in its base position. This fact can be interpreted with a covert movement analysis, either in the form of LF-movement, or with the lower-copy account. Under the former, the DP has covertly moved at LF: it actually occupies the syntactic position in which it is spelled out, but it can be interpreted in the higher position. Under the latter, it has moved in the syntax and it is located in the higher position, but it is spelled out in the lower one. Either of these explanations would clarify why the participle can agree with DPs that do not seem to have moved at all.

The tests are control inside an adjunct clause, binding of an anaphoric pronoun and quantifier scope interaction. I apply them to the unaccusative clause with subject in situ (68-a), to the impersonal clause with object agreement (68-b), and also to the impersonal sentence without object agreement, repeated in (69).

(69) Si=è   mangiato gli spaghetti.
      IMPERS=be.PRS.3SG eat.PRTC the spaghetti
      'One has eaten the spaghetti.'

In fact, there should be a difference between the two impersonal clauses, since they involve two different syntactic structures. The impersonal clause with object agreement (68-b) should pattern as the unaccusative clause with postverbal subject (68-a) (which should behave as the unaccusative clause with preverbal subject). The impersonal clause without object agreement (69) should behave as a normal transitive clause with any particular effect related to the position of the accusative object.

The first test is control into an infinitival adjunct clause. The adjoined clause is merged at the *v*P level, if not higher, at least in case of adjuncts introduced by the prepositions *senza, prima, dopo* 'without, before, after' (cf. Nissenbaum 1998, 2000; Sheehan 2010; Narita 2011; Brown 2016 for the correlation between the extractability from adjuncts and their Merge position). Note that it is not easy to establish the Merge position of the

adjunct clause. In fact, the adjunct can occupy different positions and it tends to surface in the left periphery, given its "background" function. However, since the present question is whether the controller of PRO can be the internal argument (and not the external argument), it is not relevant to establish the exact base position of the adjunct, which will be in any case higher than the base position of the DP_{obj} (which is Comp,V).

The direct object of a transitive verb cannot control a PRO within an adjunct, as example (70) shows.

(70) $Teresa_j$ ha   rimproverato $Paolo_i$ [$PRO_{j/*i}$ prima di andare a casa].
        Teresa have.PRS.3SG scold.PRTC   Paolo   before of go.INF at home
        'Teresa has scolded Paolo before going home.'

This is expected, since the object of a transitive verb does not have any reason to move to a higher position (unless focused). Going now to the clauses in (68), the DP object in its surface position is too low to control a PRO in an adjunct. Hence, it should behave as the transitive object in (70). Instead, the unaccusative subject can control a PRO in the adjunct clause even when it is in the postverbal position, as (71-a) shows. Example (71-b) illustrates that control from the preverbal position is possible, as expected.[31]

(71)   a.   [PRO_i Prima di chiedere il   permesso], è   entrat-a
                      before of ask.INF   the permission be.PRS.3SG enter.PRTC-SG.F
              $Teresa_i$ nella   stanza.
              Teresa in.the room

        b.   [PRO_i Prima di chiedere il   permesso], $Teresa_i$ è
                      before of ask.INF   the permission Teresa be.PRS.3SG
              entrat-a   nella stanza.
              enter.PRTC-SG.F in.the room
              'Before having asked for permission, Teresa has entered the room.'

Even when the unaccusative DP surfaces in the low position, it is actually high enough to control into the adjunct clause. Therefore, in sentences (71) and (68-a) the unaccusative subject must be located either in Spec,v or in Spec,T.

The same can be said for impersonal clauses with object agreement (68-b). The object of the impersonal clause in (72-a) can control a PRO. Hence, it is higher in the structure than it seems to be: it occupies either Spec,v or Spec,T, but not Comp,V. The same happens, obviously, if the object overtly moves, as in (72-b).[32]

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[31]Other positions of the adjunct are possible, but they require a parenthetic interpretation (A. Cardinaletti, p.c.).

(i)   a.   È   entrat-a $Teresa_i$ [PRO_i prima di chiedere il   permesso] nella stanza.
              be.PRS.3SG enter.PRTC-SG.F Teresa   before of ask.INF   the permission in.the room
        b.   ?È   entrat-a   [PRO_i prima di chiedere il   permesso] $Teresa_i$ nella stanza.
              be.PRS.3SG enter.PRTC-SG.F   before of ask.INF   the permission Teresa in.the room

[32]In the sentences in (72) I have used an inanimate object with the verb 'to eat' in order to avoid the ambiguity between the impersonal meaning and the reciprocal meaning, which arises if the clitic *si* is

(72)   a.   Si=sono   mangiat-i   gli spaghetti_i [PRO_i prima di essere
                IMPERS=be.PRS.3PL eat.PRTC-PL.M the spaghetti   before of be.INF
                completamente cotti].
                completely   cooked

         b.   Gli spaghetti_i si=sono   mangiat-i   [PRO_i prima di essere
                the spaghetti IMPERS=be.PRS.3PL eat.PRTC-PL.M   before of be.INF
                completamente cotti].
                completely   cooked

         c.   [PRO_i prima di essere completamente cotti], si=sono
                    before of be.INF completely   cooked IMPERS=be.PRS.3PL
                mangiat-i   gli spaghetti_i.
                eat.PRTC-PL.M the spaghetti

         d.   [PRO_i prima di essere completamente cotti], gli spaghetti_i
                    before of be.INF completely   cooked the spaghetti
                si=sono   mangiat-i.
                IMPERS=be.PRS.3PL eat.PRTC-PL.M
                'One has eaten the spaghetti before they were completely cooked.'

In contrast to (72), object control inside the adjunct is always excluded in impersonal clauses without object agreement, even when the adjunct surfaces in a position that is

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not interpreted as the impersonal argument, but rather as a reflexive clitic object, and the DP object is interpreted as the external argument. This is shown in (i).

(i)   a.   Si=sono   fotografat-e   tre   modelle_i [PRO_i prima di
            IMPERS=be.PRS.3PL photograph.PRTC-PL.F three models   before of
            sfilare].
            walk.the.catwalk.INF
            First reading: 'One has taken pictures of three models before they walked the catwalk.'
            Second reading: 'Three models have taken pictures of each other before they walked the catwalk.'
       b.   Tre   modelle_i si=sono   fotografat-e   [PRO_i prima di
            three models IMPERS=be.PRS.3PL photograph.PRTC-PL.F   before of
            sfilare].
            walk.the.catwalk.INF
            First reading: 'Three models have taken pictures of each other before they walked the catwalk.'
            Second reading: 'One has taken pictures of three models before they walked the catwalk.'

Note also that the position of the object is more restricted in (i-b). If the adjunct is located higher then the object, this cannot control a PRO anymore and the only possible reading is the reciprocal one.

(ii)   a.   [PRO_i prima di sfilare],   si=sono   fotografat-e   tre
            before of walk.the.catwalk.INF IMPERS=be.PRS.3PL photograph.PRTC-PL.F three
            modelle_i.
            models
            'One has taken pictures of three models before they walked the catwalk.'
       b.   *[PRO_i prima di sfilare],   tre   modelle_i si=sono
            before of walk.the.catwalk.INF three models IMPERS=be.PRS.3PL
            fotografat-e
            photograph.PRTC-PL.F
            Ok if: 'Three models have taken pictures of each other before they walked the catwalk.'

lower than the object (73-b).[33]

(73)   a. *[PRO_i prima di essere completamente cotti], si=è
               before of be.INF completely   cooked IMPERS=be.PRS.3SG
           mangiato gli spaghetti_i.
           eat.PRTC the spaghetti

        b. *Si=è   mangiato gli spaghetti_i [PRO_i prima di essere
            IMPERS=be.PRS.3SG eat.PRTC the spaghetti   before of be.INF
            completamente cotti].
            completely   cooked
            'One has eaten the spaghetti before they were completely cooked.'

Instead, the external argument *si* can control a PRO. This is shown in example (74-a)
versus (74-b,c).

(74)   a. Si_i=è   fotografato   tre   modelle [PRO_i prima di
            IMPERS=be.PRS.3SG photograph.PRTC three models   before of
            chiedere il   permesso].
            ask.INF   the permission
            'One has taken pictures of three models before asking the permission.'

        b. *Si=è   fotografato   tre   modelle_i [PRO_i prima di
            IMPERS=be.PRS.3SG photograph.PRTC three models   before of
            sfilare].
            walk.the.catwalk.INF

        c. Si=sono   fotografat-e   tre   modelle_i [PRO_i prima di
            IMPERS=be.PRS.3PL photograph.PRTC-PL.F three models   before of
            sfilare].
            walk.the.catwalk.INF
            'One has taken pictures of three models before they walked the catwalk.'

The control data supports the analysis of impersonals that I have proposed in section
§3.3.9.1 of chapter 3. Transitive impersonal clauses with object agreement are similar to
passive clauses: *si* is the initiator, while the DP is the patient subject. Instead, transitive
impersonal clauses without agreement behave as standard transitive clauses: *si* patterns

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[33]Note also that the object of an impersonal clause without agreement cannot surface preverbally (i-a),
unless it is focused (i-b) (but still it cannot control a PRO in the adjunct (i-c)).

(i)   a. *Gli spaghetti_i si=è   mangiato [PRO_i prima di essere completamente cotti].
           the spaghetti IMPERS=be.PRS.3SG eat.PRTC   before of be.INF completely   cooked
           'One has eaten the spaghetti before they were completely cooked.'
       b. GLI SPAGHETTI, si=è   mangiato.
           the spaghetti   IMPERS=be.PRS.3SG eat.PRTC
           'The spaghetti, one has eaten them.'
       c. *GLI SPAGHETTI_i, si=è   mangiato [PRO_i prima di essere completamente
           three models   IMPERS=be.PRS.3SG eat.PRTC   before of be.INF completely
           cotti].
           cooked
           'The spaghetti, one has eaten them before they were completely cooked.'

with the transitive subject, whereas the DP is a canonical object.

To sum up, the postverbal DP that agrees with the participle can control a PRO in the infinitival adjunct clause, which is unexpected for a transitive object (cf. (70)). Hence, even when the DP surfaces in the postverbal position, it has moved out of its base position, as participle agreement indeed shows.

The second test is binding of possessives. Since a condition for binding is c-command, if binding successfully happens, then there must have been a derivational step in which the DP_{obj} was higher in the structure than the anaphor. Since the DP_{obj} is base-merged in Comp,V, it must have moved from the base position in order to be higher than the anaphor. Example (75) shows that the unaccusative postverbal subject can bind the anaphoric adjective *propria* into a higher prepositional phrase.[34]

(75)   a.   Sono   arrivat-e   [dalla propria$_i$ madre] tre   ragazze$_i$.
           be.PRS.3PL arrive.PRTC-SG.F to.the POSS.SG.F mother three girls

       b.   Tre   ragazze$_i$ sono   arrivat-e   [dalla propria$_i$ madre].
           three girls   be.PRS.3PL arrive.PRTC-SG.F to.the POSS.SG.F mother
           'Three girls have arrived at their mothers.'

Example (76-a,b) shows that also the object of an impersonal clause with agreement can bind a higher anaphor, whereas this is not possible for the object of an impersonal clause without agreement (76-c).[35]

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[34]The anaphoric adjective *propria* 'own' is subject-oriented. With the non-subject-oriented possessive adjective *loro*, the judgments about the sentences in (i), corresponding to (75), remain the same. However, in example (i) it also becomes possible to have non-obligatory control, meaning that the adjective *loro* can be bound not only by the subject, but also by a contextually salient referent.

(i)   a.   Sono   arrivat-e   dalla loro$_{i/j}$ madre tre   ragazze$_i$.
           be.PRS.3PL arrive.PRTC-SG.F to.the POSS.SG.F mother three girls
       b.   Tre   ragazze$_i$ sono   arrivat-e   dalla loro$_{i/j}$ madre.
           three girls   be.PRS.3PL arrive.PRTC-SG.F to.the POSS.SG.F mother
           'Three girls have arrived at their mothers.'

[35]In example (76) I have used the non-subject-oriented possessive adjective *loro*, because the anaphoric adjective *propria* 'own' requires an animate possessor. If *loro* in example (76) is substituted by *propria*, the judgments remain the same, although the sentences sound odd for the animacy requirement. I propose here in (i) an example with an animate object. Note that examples (i-a,b) are ambiguous with the reciprocal meaning 'Three models have taken pictures of each other in their dressing room.' Moreover, example (i-c) becomes grammatical if *propria* is bound by the impersonal *si*, with the intended meaning 'one has taken pictures of three models in one's dressing room' (but not with the meaning given in (i-c), where *propria* is bound by the object *tre modelle*.)

(i)   a.   Si=sono   fotografat-e   [nel   proprio$_i$ camerino]   tre   modelle$_i$.
           IMPERS=be.PRS.3PL photograph.PRTC-PL.F in.the POSS.SG.M dressing room three models
       b.   Tre   modelle$_i$ si=sono   fotografat-e   [nel   proprio$_i$ camerino].
           three models   IMPERS=be.PRS.3PL photograph.PRTC-PL.F in.the POSS.SG.M dressing room
       c.   *Si=è   fotografato   [nel   proprio$_i$ camerino]   tre   modelle$_i$.
           IMPERS=be.PRS.3SG photograph.PRTC in.the POSS.SG.M dressing room three models
           'One has taken pictures of three models in their dressing room.'

(76)   a.   Si=sono   giudicat-e   [dalla   loro$_i$ performance]
            IMPERS=be.PRS.3PL judge.PRTC-PL.F from.the POSS.SG.F performance
            tre   macchine$_i$.
            three cars

       b.   Tre   macchine$_i$ si=sono   giudicat-e   [dalla   loro$_i$
            three cars   IMPERS=be.PRS.3PL judge.PRTC-PL.F from.the POSS.SG.F
            performance].
            performance

       c.   *Si=è   giudicato   [dalla   loro$_i$ performance]
            IMPERS=be.PRS.3SG judge.PRTC-PL.F from.the POSS.SG.F performance
            tre   macchine$_i$.
            three cars
            'One has judged three cars by their performance.'

In contrast with example (75), it has been shown that the unaccusative subject in the postverbal position cannot bind an anaphor (but it can control into an adjoined clause) (Cardinaletti 1997). Examples (77-a), (77-b) are supposed to illustrate that binding by the DP object is impossible, despite overt or covert raising.

(77)   a.   ?(?)[Alcuni studenti]$_i$ sembrano   [gli uni agli   altri]$_i$ essere
            some   students   seem.PRS.3PL the ones to.the others be.INF
            arrivati   in ritardo.
            arrive.PRTC-PL.M late

       b.   *Sembrano   [gli uni agli   altri]$_i$ essere arrivati   [alcuni
            seem.PRS.3PL the ones to.the others be.INF arrive.PRTC-PL.M some
            studenti]$_i$ in ritardo.
            students late
            'Some students seem to each other to have arrived late.'

                                                          (Cardinaletti 1997: 526)

The impossibility to bind has been explained via a stricter requirement of binding with respect to control, namely the structural presence of the DP (following Rizzi's (1986) proposal). According to Cardinaletti (1997), example (77-a) is better than (77-b) because of raising of the internal argument to the matrix subject position, from where it could bind the anaphor. The question mark is due to the presence of a dative phrase in the context of raising to subject with the verb *sembrare*. In fact, raising across a coindexed experiencer should be prohibited by minimality (but the intervention effect disappears if the experiencer is a clitic, cf. Rizzi 1986: 75, McGinnis 1998: 149-151, Heck 2016: 118-121).[36] Given the independent problem of the intervening dative in (77) and the grammaticality of examples (75) and (76), it seems to me that the postverbal DP is indeed

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[36]If the experiencer is expressed as a clitic, the sentences (77-a), (77-b) become grammatical, as shown in (i-a,b). However, it is not possible to verify if binding is possible. In fact, the dative clitic cannot be bound by the experiencer, as shown in (i-c,d), since the object and the experiencer cannot coincide with this predicate (if they do, only the reciprocal interpretation is possible, achieved with phrases of the type 'one another', which cannot be realized as a clitic, as shown in (77-a)).

able to bind. Hence, I think that the problem of (77) is due to the impossibility of covert or overt movement to the matrix subject position in raising constructions with a dative experiencer (differently from root clauses, as in (75), (76)). Admittedly, it remains unclear why covert movement should not be possible in such cases, although the reason must be related to dative intervention (for discussion of dative intervention in biclausal structures, cf. section §2.6.3.2 in chapter 2).

To sum up, given the grammaticality of sentences (75) and (76), corresponding to (68-a), (68-b) (but not of (76-c), corresponding to (69)), and given the discussion of (77), I consider binding as a valid test for the position of the argument. In particular, the fact that the postverbal DP can bind an anaphor shows that it must have moved out of its base position. Therefore, participle agreement is expected as a consequence.

The third test concerns scope interactions between quantifiers. If an inverse scope reading is available next to the surface scope reading, it means that the respective positions of the quantifiers are inverted at a relevant step in the derivation, and the quantifier that is higher on the surface can reconstruct to a lower position. In the following examples (78), both readings are available with an unaccusative postverbal subject.

(78)   a.   Ogni ragazza è   andat-a   da un insegnante.
            every girl   be.PRS.3SG go.PRTC-SG.F to a   teacher
            'Every girl has gone to a teacher.'   every>a; a>every
       b.   È   andat-a   da un insegnante ogni   ragazza.
            be.PRS.3SG go.PRTC-SG.F to a   teacher   every girl
            'Every girl has gone to a teacher.'   every>a; a>every

The availability of both readings in (78-b) shows that the object in the postverbal position is covertly located in a higher position or that at the relevant step of the derivation the trace/copy of the object has c-commanded the prepositional phrase. The inverse scope reading (every > a) in (78) is obtained if the PP *da un insegnante* reconstructs to a position lower then the subject. Since the subject is base-merged in a lower position than the PP, it means that the subject has moved out of its base position and the PP reconstructs to a position below the position to which the subject has moved.

As far as impersonal clauses are concerned, both readings are possible when the impersonal object that controls agreement occupies the subject position (79-a). When it is in the direct object position, the availability of the inverse scope reading is not straightforward

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(i)   a.   [Alcuni studenti] mi=sembrano   essere arrivati   in ritardo.
            some   students DAT.1SG=seem.PRS.3PL be.INF arrive.PRTC-PL.M late
       b.   Mi=sembrano   essere arrivati   [alcuni studenti] in ritardo.
            DAT.1SG=seem.PRS.3PL be.INF arrive.PRTC-PL.M some   students late
            'Some students seem to me to have arrived late.'
       c.   *[Alcuni studenti]ᵢ siᵢ=sembrano   essere arrivati   in ritardo.
            some   students DAT.3PL=seem.PRS.3PL be.INF arrive.PRTC-PL.M late
       d.   *Siᵢ=sembrano   essere arrivati   [alcuni studenti]ᵢ in ritardo.
            DAT.3PL=seem.PRS.3PL be.INF arrive.PRTC-PL.M some   students late
            'Some students seem to themselves to have arrived late.'

and, at least for some speakers, it is out (79-b). The inverse scope reading is ungrammatical for the clause without object agreement (79-c), meaning that neither the DO nor one of its trace/copy is located in a position above the PP.

(79) a. Ogni chiave si=è   dat-a   a un proprietario.
             every key   IMPERS=be.PRS.3SG give.PRTC-SG.F to a   owner
             'One has given every key to an owner.'   every>a; a>every

      b. Si=è   dat-a   a un proprietario ogni chiave.
             IMPERS=be.PRS.3SG give.PRTC-SG.F to a   owner   every key
             'One has given every key to an owner.'   ?every>a; a>every

      c. Si=è   dato   a un proprietario ogni chiave.
             IMPERS=be.PRS.3SG give.PRTC to a   owner   every key
             'One has given every key to an owner.'   *every>a; a>every

As far as this test is concerned, impersonal clauses with and without object agreement seem to pattern similarly.[37] Hence, no conclusive evidence for impersonal clauses can be drawn from the test of the quantifier scope.

As a side remark, in other languages the situation can be different. An in situ DP could remain in its base position and still trigger participle agreement. This is possible if participle agreement is due to different mechanisms, such as an independent probe on v, as has been proposed for French by Georgi and Stark (2020). In French, unaccusative DPs that control participle agreement can remain in situ, as shown by Lahousse (2006, 2011). Evidence for this is the impossibility of quantifier floating (80), and the preference for the narrow scope reading when the unaccusative DP is low in the structure (81) (Georgi and Stark 2020: 23).

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[37]That movement of the object is necessary in order to obtain both readings is confirmed by transitive clauses, where the availability of the inverse reading depends on the position of the DO with respect to the PP. When the DO is in its base position, only the surface reading is possible (i-a). When it is higher than the PP, both readings are allowed (i-b).

(i) a. Ho   presentato   a un insegnante ogni ragazza.
           have.PRS.1SG introduce.PRTC to a   teacher   every girl
           'I have introduced to a teacher every girl.'   *every>a; a>every

     b. Ho   presentato   ogni ragazza a un insegnante.
           have.PRS.1SG introduce.PRTC every girl   to a   teacher
           'I have introduced every girl to a teacher.'   every>a; a>every

In the passive, where the object should move to the subject position, both readings are possible (A. Cardinaletti, p.c.).

(ii) a. È   stat-a   presentat-a   ogni ragazza a un insegnante.
           be.PRS.3SG be.PRTC-SG.F introduce.PRTC-SG.F every girl   to a   teacher

     b. È   stat-a   presentat-a   a un insegnante ogni ragazza.
           be.PRS.3SG be.PRTC-SG.F introduce.PRTC-SG.F to a   teacher   every girl
           'Every girl has been introduced to a teacher.'   every>a; a>every

For impersonals with agreement, this test might show that the object does move, but not so high as it happens with the unaccusative or the passive argument.

(80)   a.   Je   voudrais   que soient   inscrit-s   tous
                NOM.1SG want.COND.PRS.1SG that be.CONJ.PST.3PL enrol.PRTC-PL all
                les enfants de Marie.
                the children of Marie

        b.   *Je   voudrais   que soient   tous inscrit-s
                NOM.1SG want.COND.PRS.1SG that be.CONJ.PST.3PL all   enrol.PRTC-PL
                les enfants de Marie.
                the children of Marie
                'I would like that all children of Marie are enrolled.'

(81)   a.   Une éprouve sera   présenté-e   à chaque candidate.
                a   test   be.FUT.3SG present.PRTC-SG.F to each   candidate
                'A test will be presented to each candidate.'   a>each; each>a

        b.   À chaque candidate sera   présenté-e   une éprouve.
                to each   candidate be.FUT.3SG present.PRTC-SG.F a   test
                'Each candidate will be presented a test'   a>each; ??each>a

Note that in Italian quantifier floating is well-formed (82), and both scope readings are possible (83).

(82)   a.   Vorrei   che fossero   iscritt-i   tutti i
                want.COND.PRS.1SG that be.CONJ.PST.3PL enrol.PRTC-PL.M all   the
                figli   di Maria.
                children of Maria

        b.   Vorrei   che fossero   tutti iscritt-i   i
                want.COND.PRS.1SG that be.CONJ.PST.3PL all   enrol.PRTC-PL.M the
                figli   di Maria.
                children of Maria
                 'I would like that all children of Maria are enrolled.'

(83)   a.   Una prova sarà   presentat-a   a ciascun candidato.
                a   test   be.FUT.3SG present.PRTC-SG.F to each   candidate
                'A test will be presented to each candidate.'   a>each; each>a

        b.   A ciascun candidato sarà   presentat-a   una prova.
                to each   candidate be.FUT.3SG present.PRTC-SG.F a   test
                'Each candidate will be presented a test'   a>each; each>a

Hence, evidence against covert movement in (80) and (81) may suggest a different analysis for French (Georgi and Stark 2020), but the same cannot be said for Italian. Examples (82) and (83), and the tests provided in this section, show that the unaccusative DPs that control participle agreement do not remain in the in situ position, differently from French.

To sum up, the tests for the position of the DP have shown that the postverbal surface position does not exclude the movement of the DP, as is registered by the presence of participle agreement. Hence, the cases in (68) do not constitute an exception to the implicational relation between A-movement and participle agreement proposed in (3), repeated here again (and updated with the possibility of covert movement).

(84)   a.   A-movement (either overt or covert) → Agree

        b.   no Agree → no A-movement (either overt or covert)

If the participle agrees with the DP, the DP must have moved from its base position, even when the result of movement is not visible from the surface word order (either because the DP has moved at LF or because the lower copy is spelled out at PF).

I have left out of the discussion the case of reduced clauses. I will provide an analysis of these structures in the next section.

4.6 Reduced clauses

In the discussion about participle agreement in absence of overt movement (section §4.5), I have left unexplained the case of reduced clauses in (61), repeated again here in (85).

(85)   Mangiat-i   gli spaghetti, le ragazze uscirono.
        eat.PRTC-PL.M the spaghetti the girls   go.out.PST.3PL
        'Having eaten the spaghetti, the girls went out.'

The relevant string in (85) is *mangiati gli spaghetti.* Reduced clauses are adjunct clauses where the past participle always agrees with the overt argument, it being either the transitive object or the unaccusative subject. Agreement with the transitive (non-clitic) object is surprising, since it is impossible in canonical transitive clauses. Participle agreement apparently takes place without the condition for EF-insertion being met: not only does the direct object not seem to have moved from its base position, but it also should not have any reason to move, given that transitive v has assigned case to it, and that it is neither a clitic pronoun, nor an anaphoric pronoun.

The syntactic structure of reduced clauses is quite controversial (Belletti 1990, 2005b; D'Alessandro and Roberts 2008). The aim of this section is not to examine it, but rather to show how it is possible to find the very unusual pattern of agreement with the object of a transitive verb.

The work of Belletti (1990) has convincingly shown that participial adjuncts have the structure of small clauses, which contain the whole syntactic spine that characterizes a canonical clause. However, they present a highly defective C-T system, which restricts the possible combination of overt arguments and gives rise to other idiosyncratic properties.

First of all, reduced clauses must contain a T projection (although defective), since cliticization is possible.[38] This T head has the following characteristics: it can host clitics (86-a), it cannot host impersonal clitics (86-b) (i.e., it cannot take a Voice_impers as its complement), it cannot host negation (86-c), it can assign nominative case (86-d).

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[38]Given the non-canonical properties of reduced clauses, it might be possible that this type of T is the same found in restructuring contexts (cf. chapter 5). Similarly to the T head of reduced clauses, the T head of restructuring can neither host impersonal clitics, nor clausal negation. The main difference is that in the complement of a restructuring verb there is no C projection, since the configuration is monoclausal. In contrast, in reduced clauses there is evidence for a C head, as I explain here below.

(86) a. Conosciut-a=la,...
          know.PRTC-SG.F=ACC.3SG.F
          'Having met her,...'

      b. *Mangiat-i=si   gli spaghetti,...
          eat.PRTC-PL.M=IMPERS the spaghetti
          'One having eaten the spaghetti,...'

      c. *Non conosciut-a   Maria,...
          not know.PRTC-SG.F Maria
          'Having not met Maria,...'

      d. Arrivat-a   io/*me,...
          arrive.PRTC-SG.F NOM.1SG/ACC.1SG
          'Me having arrived,...'

Another peculiarity of reduced clauses is the distribution of overt arguments. The external argument of a transitive verb can never be overtly realized (87-a). Consequently, it is not possible to find both an overt subject and an overt object (87-b). The only overt DP can be the transitive object (87-c). One may conclude that reduced clauses cannot have an external argument. However, there is evidence for the external argument position: the overt argument can be a reflexive pronoun (87-d) and reciprocal pronoun (87-e), which need to be bound by a c-commanding argument. It is also possible to have a passive by-phrase (87-f), but not in the presence of an overt internal argument (87-g) (Belletti 1990: 105).

(87) a. (*Io)   conosciuto   (*io),...
          NOM.1SG know.PRTC-SG.F NOM.1SG
          'Having met me,...'

      b. *Io   conosciut-a   Maria,...
          NOM.1SG know.PRTC-SG.F Maria
          'Me having met Maria,...'

      c. Conosciut-a   me,...
          know.PRTC-SG.F ACC.1SG
          'Having met me,...'

      d. pro_i Lavat-a-si_i,   Maria_i...
              wash.PRTC-SG.F=REFL.ACC.3SG.F Maria
          'Having washed herself, Maria...'

      e. pro_i Abbracciat-i-si_i,   i   ragazzi_i...
              hug.PRTC-PL.M=REFL.ACC.3PL.M the boys
          'Having hugged each other, the boys...'

      f. Conosciut-a   da me,...
          know.PRTC-SG.F by me
          'Me having met her,...'

      g. *Conosciut-a   Maria da me,...
          know.PRTC-SG.F Maria by ACC.1SG
          'Me having met Maria,...'

Moreover, unergative intransitive verbs are generally excluded (88-a), (88-b). It is possible

to find an unergative participle only when the reduced clause contains an overt argument (88-c) (but this cannot be the external argument (88-b)).

(88) a. *Telefonato,...
          call.PRTC
          'Having called,...'
      b. *Telefonato io/me,...
          call.PRTC   NOM.1SG/ACC.1SG
          'Having called,...'
      c. pro_i Telefonato a Gianni, Maria_i uscì   di casa.
              call.PRTC   to Gianni Maria go.out.PST.3SG of home
          'Having called Gianni, Maria left home.'

Given these facts, it seems that the argument structure of reduced clauses is defective. There is no overt position for the external argument, although it must be syntactically represented. The clause contains just one overt slot for arguments, which is usually filled by the DO (but cf. the case of the by-phrase in (87-g)).

We also saw that there should be a T head, although defective. As far as the head Perf is concerned, I argue that it is present in the structure, since the semantics of reduced clauses is clearly perfect and because movement to C can involve Perf as well (leading to the complex head C-T-Perf-v-V). In fact, as Belletti (1990: 83-84) has established, in reduced clauses the past participle moves to C and fills the C position.

Evidence for movement of the participle to C is the position of the verb with respect to the subject DP, which can only appear postverbally.

(89) a. Arrivat-a   Maria, Gianni tirò   un sospiro di sollievo.
          arrive.PRTC-SG.F Maria Gianni throw.PST.3SG a sigh   of relief
      b. *Maria arrivata,   Gianni tirò   un sospiro di sollievo.
          Maria arrive.PRTC-SG.F Gianni throw.PST.3SG a   sigh   of relief
          'Maria having arrived, Gianni was relieved.'   (Belletti 1990: 96)

According to Belletti (1990), movement to C is related to case assignment. Following Rizzi (1982); Raposo (1987), in Italian and Portuguese a nominative case assigner can be present in some non-finite clauses. However, such nominative case assigner appears in C, meaning that C must combine with T (and Agr) in order to assign case. In other words, non-finite T can assign nominative, but it requires movement of an agreeing head to C: the Agr head and T move to C.

Evidence for this analysis comes from the behavior of reduced clauses with an overt complementizer. If C is filled with lexical material as in (90-a), the sentence is grammatical only without an overt DP. This is because the participle cannot move to C. Consequently, nominative case cannot be assigned. In this case, the sentence is grammatical only if nominative case is not needed, namely when the argument is *pro* (under the assumption that *pro* does not need case) (Belletti 1990: 99). In fact, the reduced clause may contain

other material that does not need case, such as prepositional or adverbial phrases (90-b).

(90)   a. *Anche se arrivat-a   Maria, tutti   si=rifiutarono
            even   if arrive.PRTC-SG.F Maria everyone REFL.ACC.3PL=refuse.PST.3PL
            di partire.
            to leave
            'Even if Maria had arrived, everyone refused to leave.'   (Belletti 1990: 99)
        b. Anche se arrivat-a   in ritardo, Maria non
            even   if arrive.PRTC-SG.F late   Maria not
            si=scusò.
            REFL.ACC.3SG=apologize.PST.3SG
            'Even if arrived late, Maria did not apologize.'

In this dissertation, I must leave the issue of the syntactic structure of reduced clauses open. The problem that is relevant for this study is participle agreement with the transitive object, repeated in (91).

(91)   Conosciut-a   Maria,...
        know.PRTC-SG.F Maria
        'Having met Maria,...'

In this chapter, I have argued that participle agreement is a morphological reflex of movement to the edge of the phase, due to an unchecked feature on the moving element. Which kind of unchecked feature could responsible for participle agreement with the transitive object in (91)? In what follows, I will explore some possible analyses.

The first hypothesis is that the participle agrees with the transitive object because v does not assign case to it. This solution has the following ingredients: v is defective (Belletti 1990: 109), an EF is inserted on v causing object agreement, v moves to C and assigns accusative to the object. Belletti (1990: 109) has argued that v in reduced clauses is always defective. Since it does not assign accusative case to its object, this defective v moves to C, and they both together assigns accusative case. Translated into the system of edge features, the analysis looks as follows. Since v is defective, there is an unchecked case feature on the DP in Comp,v. Hence, an EF is inserted on v, leading to object agreement.

The DP moves to Spec,v due to EF-insertion on v. Belletti (1990) has shown that the unaccusative object moves from its base position, given that ne-extraction is not possible (92-a). In contrast, the transitive object does not move from its base position, since ne-extraction is possible (92-b).

(92)   a. ?*Arrivat-i=ne   parecchi,...
            arrive.PRTC-PL.M=of many
            'Many of them having arrived,...'   (Belletti 1990: 101)
        b. Conosciut-e=ne   molte,...
            know.PRTC-SG.F=of many
            'Having known many of them,...'   (Belletti 1990: 104)

Example (92-a) constitutes evidence for movement of the unaccusative object. In contrast, example (92-b) seems to show that the transitive object has not moved at all, leaving the mystery of (91) intact. In fact, even under Belletti's (1990) analysis the object must be accessible for case assignment from C, meaning that it must move out of its base position. Hence, example (92-b) does not support this analysis. Note, however, that judgments on *ne* extraction are not uniform among speakers, and these facts in (93) could have a different explanation.

More in general, this analysis has the further problem of accusative assignment. How can accusative case (visible on pronouns in (86-a), (87-c)) be assigned from C? Belletti (1990: 109,110) has argued that accusative case assignment happens under head-complement configuration once the transitive participle moves to C at LF, similarly to nominative case assignment in the case of unaccusative objects (where the configuration is instead spec-head). In general, head movement has been considered as a prerequisite for case assignment, for instance by Bobaljik and Branigan (2006) (where the causative head can assign accusative case to the embedded object only if the lexical verb moves to the causative head). However, it is not clear how v or C can become a case assigner once they form a complex head (V-v-T-C), and how this can lead to nominative case assignment for unaccusative verbs, to accusative case assignment for transitive verbs.

Under the second approach, participle agreement in reduced clauses is not the result of movement to the edge of the phase, but it is rather a case of agreement on C. Evidence for this fact comes from the presence of participial agreement in reduced clauses also in languages where participle agreement is generally excluded. In Spanish, Portuguese, Catalan, and Romanian, the participle never shows morphological agreement in perfect clauses (neither with clitics, nor with unaccusative or reflexive arguments). However, it exhibits agreement in reduced clauses, as shown in (93).

(93)   *Spanish*

        Leíd-a/*leido   la   sentencia, el   juez
        read.PRTC-SG.F/PRTC the sentence   the judge
        se=retiró.
        REFL.ACC.3SG=withdraw.PST.3SG
        'Having read the sentence, the judge withdrew'.   (Loporcaro 2016: 803)

The presence of participle agreement in reduced clauses in languages where the morphological reflexes of EF-movement are not visible, and the unusual case of transitive object agreement in reduced clauses in Italian, might show that participle agreement in reduced clauses is not due to EF. That participle agreement might have different sources also within a language has been proposed for French, where agreement with clitic pronouns might be a case of resumption, and agreement with unaccusative arguments may be due to a ϕ-probe (Georgi and Stark 2020).

I propose that the C head of reduced clauses bears a probe for gender and number. This

ϕ-probe targets the argument that is present in the derivation, either the unaccusative object or the direct object (assuming that the transitive external argument is not accessible for the same reasons that it cannot be overtly realized, still to be understood). At Spell-out, overt morphological inflection is realized on the participle because of the features on the complex head, represented in (94).

(94)   C[#:α][γ:α] - T - Perf - v[Infl:perf] - V

The participle morphology is due to [Infl:perf] on v, whereas the inflection does not come from the EF on v, but rather from the presence of gender and number on the ϕ-probe on C, which is part of the same complex head containg V and v. The structure of the complex head should be as in (95).

(95)
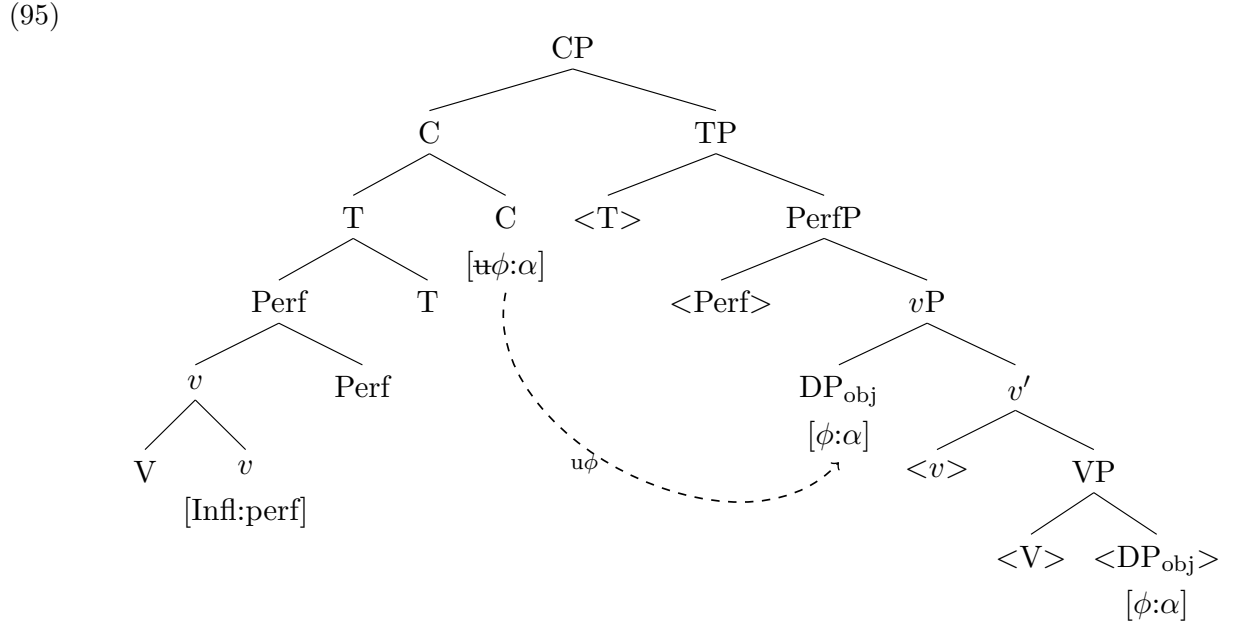
This process is independent of the edge feature. There can be an an EF on v if needed, but this does not interact with the probe on C.

This solution presents still the problem of accusative assignment. Since the object must move to Spec,v in order to remain accessible to C (as represented in (95)), v should be defective. A defective v could also clarify the restrictions in the distribution of the overt arguments. However, if v is defective, then C must be able to assign case. Hence, we face again the problem of the previous solution, as far as case assignment is concerned.[39]

In addition, there are some further problems. If it is the case that participle agreement is morphologically realized whenever the complex head contains both v[Infl:perf] and gender

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[39]A possible solution could be phase sliding (Gallego 2008), triggered by head movement of v to C, so that the object remains accessible to C for ϕ-agreement. If this approach is adopted, accusative case is canonically assigned by v, and nominative case by T. However, one should somehow restrict the possibility of phase sliding to reduced clause.

and number on another subpart of the complex head (canonically v, but in the present case C), then we would expect participle agreement every time that the participle moves to T (since it contains a ϕ-probe), even without EF-insertion (at least for number, if T probes for person and number, but not for gender). One could maybe argue that the participle normally does not move to T-Perf, as actually shown by the possibility of intervening adverbs between the past participle and the finite auxiliary.

(96)   Ho   già   mangiato la mela.
       have.PRS.1SG already eat.PRTC the apple
       'I have already eaten the apple.'

If V-v[Infl:perf] does not move to T, the scenario with gender and number features on a subpart of the complex head arises only in the case of reduced clauses. Still, this might be an issue to think about.

In general, the proposed explanation should also account for the distribution of overt arguments in the structure. The C-Agree approach does not contribute to this question, whereas the defective v account may go in this direction. A defective v, with eventually an extra Voice head that could select an implicit external argument, similar to what happens for passives and impersonals, could be a solution. In fact, if v is defective the internal argument would not receive case, thereby triggering participle agreement via EF-insertion. Defective v would also not be able to introduce the external argument, thereby explaining cases such as (87-a), (87-b), (88-a), (88-b). Note, however, that the distribution of the overt arguments could be explained via another constraint that bans two postverbal arguments within the vP, the so-called *Subject-in-Situ Generalization* (Alexiadou and Anagnostopoulou 2001).

(97)   *Subject-in-Situ Generalization* (Alexiadou and Anagnostopoulou 2001: 208)
       It is not possible for a subject and an object that "need their Case to be checked"
       both to be spelled out at the positions in which they are initially merged.

This principle excludes a configuration where both the object and the subject does not move from their base positions, i.e. a structure such as [(Expletive)-V[$_{VP}$SO]]. It could be the case that in reduced clauses the subject does not find the way to move out of its base position, maybe because defective T cannot host a DP in its specifier. Hence, if the structure contains two DPs, the clause ends up containing two postverbal DPs and the derivation crashes. This is just a suggestion, but it is noteworthy to highlight the similarities between this generalization about root clauses and the impossibility of two overt DPs in reduced clauses.

To conclude, I do not have a clear answer that can successfully explain participle agreement in reduced clauses, in accordance with all other properties of these structures. I tentatively suggest that participle agreement in reduced clauses is not due to EF, but rather to a ϕ-probe on C, as suggested by data from languages such as Spanish, where

participle agreement is normally excluded, but it is instead found in reduced clauses. The involved structure must also be defective in order to explain the other properties of reduced clauses. However, many problems still remain, such as case assignment. I leave participle agreement in reduced clauses to further research.

4.7 Participle agreement in Old Italian

It is well-known that in Old Italian the participle behaves as in Standard Italian, but in addition it can agree with the internal argument (Egerland 1996; Loporcaro 2010; Belletti 2017; D'Alessandro to appear).

(98)   *Decameron*; II: 5 (1350 ca.) (Egerland 1996: 38)

      (...) come che tu   abbi   perdut-i   i   tuoi
          as   that NOM.2SG have.CONJ.PRS.2SG lose.PRTC-PL.M the your
      denari (...)
      money
      '... even if you have lost your money...'

(99)   *Novellino*; 18, 15-16 (1525 ca.) (D'Alessandro to appear: 14)

      Mio padre ha   offert-i   duomila   marchi.
      my father have.PRS.3SG offer.PRTC-PL.M two thousand marks
      'My father has offered two thousand marks.'

Participle agreement with the transitive object is not ubiquitous, but it is well-attested, differently from the Standard Italian where it is generally excluded.[40]

In the previous literature, it has been highlighted that in Old Italian the participle tends to remain low, and many elements can be scrambled in front of the past participle (Egerland 1996; Franco 2009; Benincà and Poletto 2010; D'Alessandro to appear). There are many examples where the transitive object appears in the leftward position, as in (100), (101).

(100)   *Decameron*; II: 5 (1350 ca.) (Egerland 1996: 38)

      (...) co' denari avresti   la persona perdut-a.
          with money have.COND.PRS.2SG the person lose.PRTC-SG.F
      '... with your money you would have lost your life.'

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[40]Nowadays, it is possible to find cases of object agreement in very formal Italian with archaic taste (Loporcaro 2010: 228).

(i)   Gianni aveva   già   pres-a   la sua decisione.
      Gianni have.PST.3SG already take.PRTC-SG.F the his decision
      'Gianni had already taken his decision.'   (Guasti and Rizzi 2002: 181)

(101)   Bono Giamboni, *Orosio*; 2, 9, 15-16 (XIII c.) (D'Alessandro to appear: 14)

(...) i   nimici avessero   già   il   passo pigliat-o.
the enemies have.CONJ.PST.3PL already the pass   take.PRTC-SG.M
'the enemies has already taken the pass'

The data in (100), (101) show that the direct object has moved to a higher position across the participle in v. If this is a general tendency, it could be the case that even when the object seems to be in situ as in clauses (98), (99), it might instead have moved out of its position (covertly, or overtly with simultaneous movement of other constituents, cf. discussion in section §4.5). If the object in (98), (99) has moved, it is possible that participle agreement is due to the edge feature, as is the case in Standard Italian. The object could move to a low focus position (above vP), which is an instance of Ā-movement. If in Old Italian Ā-EFs are associated with a ϕ-probe too (similarly to what I have proposed for French in section §4.3.5), this Focus feature on the object could trigger $EF_{\bar{A}}$-insertion, and, consequently, participle agreement.

However, there is another possible analysis that I would like to adopt. It could be the case that participle agreement in Old Italian is not only tied to EF-feature insertion, but it is also due to a more complex probe on v. The edge feature is an available technology for triggering successive cyclic movement, exactly as is in Standard Italian. In both languages, the edge feature contains a gender and number probe. Hence, participle agreement in presence of clitic pronouns or with the unaccusative object is due to EF-insertion in both languages. However, independently of the EF, participle agreement with transitive object in Old Italian results from the fact that transitive v is a probe not only for person, but also for the whole ϕ-feature set, differently from Standard Italian. If non-defective v contains [uϕ:_], v always copies all the features of the object, resulting in participle agreement when v bears the feature [Infl:perf]. This is represented in (102).[41]

(102)   a.   *Old Italian*
            v_{trans}[uϕ:_] (+ EF[u#:_, uγ:_])
        b.   *Standard Italian*
            v_{trans}[uπ:_] (+ EF[u#:_, uγ:_])

In Old Italian, participle agreement is due to two processes: ϕ-Agree on transitive v, and edge feature insertion. Standard Italian has lost the former strategy because the probe on transitive v has become more simplified (from [uπ:_, u#:_, uγ:_] to [uπ:_]). A similar analysis, where more than one strategy for participle agreement is present within a single

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[41] Egerland (1996) proposes that in Old Italian there were two grammatical systems at disposal of the speakers, and then one replaced the other one by the middle of the 14th century. According to his analysis, in Old Italian participle agreement with a transitive object was possible as long as the object could also appear in a position to the left of the participle. This possibility is due to a strong accusative case that forces overt object shift, and to the presence of a *pro* in the object position. The change from the grammar of Old Italian to that of Standard Italian is twofold. In the former, *pro* is licensed by AgrO and the accusative case feature is strong; in the latter, *pro* is not licensed in the object position and accusative case is weak.

language, has been proposed by Georgi and Stark (2020) for French.

The featural make-up of v can also explain the optionality of object agreement in Old Italian, which is not always invariably realized. If in Old Italian transitive v can also be equipped with a π-probe instead of a ϕ-probe (i.e., both grammars in (102) are simultaneously available for speakers of Old Italian), there can be some variation in the realization of object agreement. The possibility to have a simpler probe on v_{trans} later on became the only option, leading to the grammar of Standard Italian where v can only be equipped with the more restricted π-probe. Note that many Southern Italo-Romance varieties behave as Old Italian, meaning that the system in (102-a) has been retained in many cases, for instance in many dialects spoken in Lazio and Campania. I address in details the issue of participle agreement in other languages in chapter 6.

4.8 Relation between participle agreement and auxiliary selection

The discussion of participle agreement developed in this chapter leads to the conclusion that participle agreement and auxiliary selection are independent phenomena. Many authors have already highlighted that the co-occurrence between participle agreement and the perfect auxiliary BE does not always take place (Loporcaro 1998; Bentley and Eythórsson 2004; Belletti 2005b, 2017; Manzini and Savoia 2005, 2007; Legendre 2010). Even though this conclusion is not a new achievement, the account provided in this dissertation has the considerable advantage of explaining not only why the full correlation between these two processes is not real, but also why there is indeed a partial correlation.

The correlation between participle agreement and BE breaks down at least in the following cases: with impersonal transitive and unergative clauses (103-a,b), with object clitic pronouns (103-c), occasionally with relativization (in formal Italian) (103-d).

(103)   a.   Si=è   mangiato gli spaghetti.
             IMPERS=be.PRS.3SG eat.PRTC the spaghetti
             'One has eaten the spaghetti.'

        b.   Si=è   lavorato   molto.
             IMPERS=be.PRS.3SG work.PRTC a lot
             'One has worked a lot.'

        c.   Le=ho   conosciut-e.
             ACC.3PL.F=have.PRS.1SG know.PRTC-PL.F
             'I have met them.'

        d.   Le ragazze che ho   conosciut-e...
             the girls   REL have.PRS.1SG know.PRTC-PL.F
             'The girls that I have met...'

Moreover, this correlation is also absent in many other languages, as I will illustrate in chapter 6. In some Italo-Romance varieties, the perfect auxiliary with unaccusative verbs is HAVE, but the participle behaves as in Italian (for instance, Cori (104)). In other varieties, even when the auxiliary is BE the participle does not show agreement (for

example, Colledimacine (105)).

(104) *Cori*

    Au   venuti.
    have.PRS.3PL come.PRTC-PL.M
    'They have come.'   (Kayne 1993)

(105) *Colledimacine*

    Semmə   mənu:tə   / maɲɲat:ə.
    be.PRS.2PL come.PRTC / eat.PRTC
    'We have come / eaten.'   (Manzini and Savoia 2005: II: 695)

Apart from the exceptions in (103), in Standard Italian the auxiliary BE and participle agreement tend to appear together. This pattern is due to the defectiveness of v. If v is defective, it is neither a probe for π-feature, nor does it assign accusative case. The former characteristic has the consequence that Agree on Perf fails because it cannot find a matching goal, leading to BE insertion. The latter property causes the movement of the object to the edge of the phase, in order to be visible for a higher case assigner. This is achieved via EF-insertion on v. The edge feature copies the gender and number features of the moved item on v, resulting into participle agreement. In other words, the frequent co-occurrence between BE-selection and participle agreement is an effect of the featural specification of the functional head v. In Standard Italian, the features [ucase:acc] and [uπ:_] cluster together on v. This distribution has the broad effects of auxiliary selection on the one hand, and participle agreement on the other hand. These two phenomena are as different as the features on v [ucase:acc] and [uπ:_] are.

In chapter 3, we saw that BE arises either in unaccusative structures, or in the presence of a reflexive or impersonal clitic. With unaccusative verbs, the fact that defective v is neither a probe for person, nor a case assigner leads to the emergence of BE and to participle agreement, with the expected correlation (cf. section §3.3.4). With the reflexive and impersonal clitics, the co-occurrence between BE and participle agreement is due again to the cluster of two properties on a defective item: the argument is a clitic and is ϕ-defective (cf. sections §3.3.2, §3.3.9). As we saw for v, where case and person probe cluster together, in Standard Italian ϕ-defective pronouns happen to be clitics. The generalization seems to be that if a D category bears an unvalued person feature, then it must also be a clitic. It is possible that a non-clitic item bears some unvalued ϕ-features, as is the case for the self-reflexive pronoun *se stess-o/a/i/e*, which acquires gender and number via binding (but, according to my analysis, bears a valued person feature), or as is the case for adjectives (which do not belong to the [D] category). Nonetheless, if the person feature is missing (π-defectiveness), then the item must also be a clitic. For this reason, it is not possible to have the auxiliary BE without participle agreement with the reflexive and impersonal clitics: on the one hand, the unvalued π-feature of the clitic leads to BE insertion, on the other hand its [T]-feature that characterizes clitics causes

participle agreement via edge feature insertion.

Various factors can destroy the "perfect" correlation between BE and participle agreement on the one hand, and HAVE and lack of participle agreement on the other hand. If a transitive verb takes a clitic as its direct object (103-c), then the auxiliary is realized as HAVE because v successfully agrees with the clitic, but participle agreement is caused by the defectiveness of the clitic (prosodic, indicated by [•T•]), and not of v. Example (103-d) can be explained in a similar way, assuming that the EF for relativization contains a ϕ-probe (cf. discussion of the French case in section §4.3.5).

Moreover, the presence of BE and the lack of participle agreement is indeed possible. This happens in impersonal clauses, both with transitive verbs without person agreement (103-a) and with unergative verbs (103-b). The prediction that a defective clitic (reflexive or impersonal) leads both to BE insertion and to participle agreement does not hold here because of the syntactic structure. In (103-a) and (103-b), the Merge position of the defective clitic is higher than the locus of participle agreement (which is v), but lower than the position of Perf (cf. analysis of auxiliary selection in impersonal clauses, sections §3.3.9.2, §3.3.9.3 in chapter 3). Therefore, participle agreement here is excluded in the same way as is excluded with external arguments in general (Belletti 2005b).

We can conclude that, in those positions that are able to cause participle agreement (namely, in the v domain), the joint presence of [uπ:__] and [•T•] on a D category always leads both to BE and to participle agreement. If the DP is in a position that is not relevant for participle agreement (i.e., if it is merged in the external argument position or even higher), then the correlation is automatically not active, since the precondition for participle agreement is not met anymore (the affected domain is not the v domain). The other correlation between the lack of [uπ:__] and [ucase:acc] on v is always relevant for participle agreement, because these features are located exactly on the functional head that gives rise to participle agreement and that is targeted by Agree on Perf.

The relationships between the phenomena are summarized in Table 4.1.

	auxiliary	participle agreement	motivation	example
(i)	BE	yes	defective v, defective pronoun	(1-a), (1-d), (1-h)
(ii)	BE	no	defective pronoun *si* above v	(103-a), (103-b)
(iii)	HAVE	yes	clitic [•T•]	(103-c)
(iv)	HAVE	no	non-defective v	(2-a)

Table 4.1: Auxiliary selection and participle agreement.

4.9 Summary

In this chapter, I have argued that in Standard Italian participle agreement is a morphological reflex of A-movement across v. Overt morphological inflection is realized on the past

participle when the internal argument has moved out of its base position. A constituent must move out of a phase domain if it bears a feature that has not been checked yet, after all operations triggered by the phase head have been carried out. This "featural defectiveness" can be inherent (as in the case of reflexive clitic pronouns), or structural (due to the presence of a defective v).

The theoretical implementation of this idea makes use of edge features, which have been independently proposed as a trigger for successive cyclic movement. The new proposal developed in this chapter consists of the presence of a gender and number probe on the edge feature. This probe targets the ϕ-features of the item that bears the unchecked feature, which has caused edge feature insertion.

In this chapter, I have proposed the derivation for all instances of participle agreement addressed in this dissertation. I have also shown how cases that apparently do not involve phrasal movement, but still exhibit participle agreement, can be reduced to instances of covert A-movement or to the presence of a further probe. Finally, I have highlighted that participle agreement and auxiliary selection are different phenomena, although they happen to pattern together because of the clusters of features on the functional head v and on the arguments.

In the next chapter, I apply the analysis that I have developed for auxiliary selection and for participle agreement to the complex case of restructuring.

5 Auxiliary selection in restructuring

5.1 Introduction

In the previous chapters, I have developed a theory of auxiliary selection and participle agreement that derives the distribution of the perfect auxiliaries HAVE and BE and of participle inflection in Standard Italian. The allomorph that realizes the auxiliary depends on the result of the operation Agree. Since the relevant probe consists of an ordered feature on the head Perf, the operation is subject to the algorithm of Nested Agree. The auxiliary BE emerges in the case of defective structures, meaning with unaccusative verbs or in the presence of reflexive clitics or impersonal *si*. Participle agreement does not depend on auxiliary selection: it is due to the phenomenon of edge feature insertion. The emergence of BE generally correlates with overt inflection on the past participle, but this is not always the case. In this chapter, I apply this analysis to complex clauses, in particular to restructuring clauses.

The chapter is structured as follows. In the next section, I briefly discuss biclausal sentences (§5.2.1) and restructuring clauses (§5.2.2), with a focus on the perfect auxiliary. In §5.3, I present the relevant data about auxiliary selection in restructuring. In particular, in §5.3 I show the data about modal verbs, in §5.3.1 about aspectual and motion verbs. In section §5.4, I briefly summarize some previous approaches to restructuring and I try to apply previous analyses of auxiliary selection to restructuring, showing that previous analyses of auxiliary selection cannot derive auxiliary switch. Thereafter, in §5.5 I introduce my proposal: restructuring configurations are obligatory monoclausal raising structures with reduced complements. Then, in §5.6 I propose that auxiliary selection in restructuring is due to the presence of a special type of v and to the optionality for different sizes of the complement. In section §5.7, I offer the detailed derivation for all possible cases, thereby providing the first explicit analysis of auxiliary selection in restructuring. In favor of my proposal, I offer empirical evidence for different sizes of the complement in §5.8, where I also discuss the difference between control and raising §5.8.1. After that, in section §5.9 I leave the modal verbs and I move on to aspectual and motion predicates, highlighting the variable behavior of restructuring verbs. In particular, in §5.9.1 I discuss the diagnostics for considering these verbs as (semi-)lexical predicates, differently from modal verbs. On the basis of these data, I develop my proposal for these non-core restructuring verbs in §5.9.2. I sketch an analysis for auxiliary selection in §5.9.3. In section §5.10, I discuss auxiliary selection in case of sequences of restructuring verbs. Furthermore, I look at variation among Italian dialects in section §5.11. Finally, I sum up the results of this chapter in the conclusion (§5.12), highlighting their relevance for the theory of auxiliary selection proposed in this dissertation.

5.2 Types of complementation

5.2.1 Biclausal structures

In Standard Italian, in biclausal sentences with subordination the matrix auxiliary is in general HAVE. This is the case, for instance, with *say*-verbs, as shown in (1-a,b).

(1) a. Teresa ha   detto   [DP una bugia].
         Teresa have.PRS.3SG say.PRTC   a   lie

     b. Teresa ha   detto   [CP di sentir=si   bene].
         Teresa have.PRS.3SG say.PRTC   to feel.INF=REFL.ACC.3SG.F well

     c. Teresa ha   detto   [CP che si=sente
         Teresa have.PRS.3SG say.PRTC   that REFL.ACC.3SG.F=feel.PRS.3SG
         bene].
         well
         'Teresa has said a lie / to feel well / that she is feeling well.'

The internal argument of the matrix verb in (1) can be either a DP or a CP.[1] The matrix clause in these structures is transitive, as the presence of the auxiliary HAVE confirms. Recall, in fact, that Perf can be realized as HAVE only in the presence of a valued π-probe on v, which is the case with a non-defective v (in absence of any defective argument), as I have illustrated in chapter 3. Hence, biclausal structures contains a non-defective v. The matrix clause behaves as a transitive root clause, leading to the presence of HAVE as the matrix auxiliary. The auxiliary is HAVE even when the embedded verb is unaccusative, as shown in (2).

(2) a. Teresa ha   detto   [CP di andare via   presto].
         Teresa have.PRS.3SG say.PRTC   to go.INF away early

     b. Teresa ha   detto   [CP che va   via presto].
         Teresa have.PRS.3SG say.PRTC   that go.PRS.3SG away early
         'Teresa has said to leave early / that she is leaving early.'

This confirms the transitive structure of the matrix verb. Further evidence comes from auxiliary switch to BE when the matrix clause contains a reflexive indirect object (3) or an impersonal external argument (4), exactly as it happens for transitive root clauses.

(3) a. Teresa si=è   dett-a   [DP una bugia].
         Teresa REFL.DAT.3SG.F=be.PRS.3SG say.PRTC-SG.F   a   lie

     b. Teresa si=è   dett-a   [CP di
         Teresa REFL.DAT.3SG.F=be.PRS.3SG say.PRTC-SG.F   to

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[1]The CP projection is identified by the presence of an overt complementizer in the finite subordinate in (1-c), and by the possibility of topicalized arguments before the particle *di* in the non-finite subordinate in (1-b) (Rizzi 1997). Note, however, that the non-finite subordinate in (1-b) might have a different (smaller) structure than the finite one in (1-c).

        sentir=si   bene].
        feel.INF=REFL.ACC.3SG.F well

  c. Teresa si=è   dett-a   [CP che
      Teresa REFL.DAT.3SG.F=be.PRS.3SG say.PRTC-SG.F   that
      si=sente   bene].
      REFL.ACC.3SG.F=feel.PRS.3SG well
      'Teresa has said herself a lie / to feel well / that she is feeling well.'

(4) a. Ieri   a casa mia si=è   detto   [DP una bugia].
      yesterday at home my IMPERS=be.PRS.3SG say.PRTC   a   lie

  b. Ieri   a casa mia si=è   detto   [CP di
      yesterday at home my IMPERS=be.PRS.3SG say.PRTC   to
      sentir=si   bene].
      feel.INF=REFL.ACC.3SG well

  c. Ieri   a casa mia si=è   detto   [CP che
      yesterday at home my IMPERS=be.PRS.3SG say.PRTC   that
      ci=si=sente   bene].
      IMPERS=REFL.ACC.3SG=feel.PRS.3SG well
      'Yesterday at my place one has said a lie / to feel well / that one is feeling well.'

This can be derived if the probe on matrix transitive v always finds a goal (the DP or the CP, assuming that the C head bears ϕ-features).[2] Evidence for the fact that person-Agree on matrix v is always successful with a CP complement is the presence of the auxiliary HAVE also when the embedded clause contains an impersonal clitic: *Teresa ha detto che si mangia bene a casa* 'Teresa has said that one eats well at home'.

    Unaccusative verbs can also select clausal complements. An example is the verb *parere* 'look like'. Its complement can be a DP, as in (5-a), or a CP, as in (5-b) and (5-c).

(5) a. Teresa è   pars-a   [DP una vera campionessa].
      Teresa be.PRS.3SG look.like.PRTC-SG.F   a   real champion

  b. Teresa è   pars-a   [TP vincere tutte le   gare].
      Teresa be.PRS.3SG look.like.PRTC-SG.F   win.INF all   the competitions

  c. È   parso   [CP che Teresa abbia   vinto
      be.PRS.3SG look.like.PRTC   that Teresa have.SUBJ.PRS.3SG win.PRTC
      tutte le   gare].
      all   the competitions
      'Teresa looked like a real champion / to have won all the competitions.'

In the case of nominal complementation (5-a), the DP is a predicative noun phrase in a

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[2]The presence of ϕ-features on C can be due to different reasons. One possibility, which goes back at least to Stowell (1981), is that CPs are embedded under a nominal shell. These clausal complements are DPs with a covert definite determiner, which selects for a CP as its complement. If the CP is indeed a DP, the D head can host (default) ϕ-features. For discussion of the DP-approach, cf. Moulton (2009); Kastner (2015). An alternative is to say that C bears ϕ-features of its own (Platzack 1986). Finally, the ϕ-features can be actually located on T, but be accessible in C because of head movement of T to C.

copular construction, where the unaccusative verb acts as a copula. In the case of TP/CP complementation, the clausal complement can be either non-finite (5-b) or finite (5-c). The former structure involves subject-to-subject raising.[3] In the latter, the matrix predicate is combined with a CP that blocks raising (and the subject is an expletive *pro*). As we can see, the perfect auxiliary is invariably BE, even in the presence of a CP complement. This is expected with a defective v. In fact, if the v associated with the unaccusative verb does not contain any person probe, Agree on Perf always fails, independently of the type of complement, leading to the emergence of the unmarked form BE.

To sum up, in the case of biclausal subordination transitive verbs are selected by a transitive v, while unaccusative verbs are selected by a defective v. The presence of a transitive v causes the perfect auxiliary to be realized as HAVE, whereas a defective v determines the realization of the perfect auxiliary as BE.

5.2.2 Restructuring

A much more interesting case is restructuring, which is the topic of this chapter. The word *restructuring* refers to a structure where a modal, aspectual or motion verb takes as its complement a non-finite verb, leading to a surface structure as in (6) (Rizzi 1976; Wurmbrand 2003; Cinque 2004; Grano 2015).

(6)   DP$_{sbj}$ restructuring-V [lexical-VP]

Even though the syntactic structure in (6) contains two verbs, i.e. the restructuring verb and the lexical verb, some processes can span across the two verbs, as if the two verbs would constitute a single verbal extended projection. In other words, this configuration is transparent for clause-bounded phenomena. In Standard Italian, the syntactic processes that cannot apply across a clause boundary are clitic climbing, long object movement, and auxiliary switch. The diagnostics for restructuring are exactly these types of operations that normally apply only within a CP, and are in general language-specific. The set of restructuring verbs varies depending on the considered operation and it is often subject to intra-speaker variation. Moreover, not every restructuring verb homogeneously allows for all monoclausal behaviors. Instead, restructuring verbs are located along a cline of "monoclausality".

In Standard Italian, clitic climbing is the most wide-spread restructuring behavior. The term *clitic climbing* refers to the placement of a clitic pronoun, which is the argument of the lexical verb, in the domain of the restructuring inflected verb. Clitic climbing is

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[3]In example (5-b) I labeled the clausal complement as a TP because this should be smaller than a CP in order to allow for raising. However, it should be bigger than a TP, since the non-finite subordinate clause can contain preverbal topicalized elements (Rizzi 1997).

(i)   Teresa pare   LE GARE   vincer=le   tutte.
        Teresa look.like.PRS.3SG the competitions win.PRTC=ACC.3PL.F all
        'As far as the competitions are concerned, Teresa looks like to win all of them.'

in general optional: the clitic can surface either on the verb that selects it (lack of clitic climbing) (7-a), or on the higher verb (clitic climbing) (7-b).

(7)   Clitic climbing

     a.   Vorrei   [andar=ci   con   Maria].
              want.COND.1SG go.INF=there with Maria

     b.   Ci=vorrei   [andare con   Maria].
              there=want.COND.1SG go.INF   with Maria
              'I would like to go there with Maria.'   (Cardinaletti and Shlonsky 2004: 521)

According to de Andrade and Bok-Bennema (2017: 39) (whose study is based on data from Fresina 1982: 294, Napoli 1981: 883), the following are the verbs that allow for clitic climbing in Standard Italian.

(8)   Restructuring clitic climbing verbs

     a.   Movement verbs: *andare a* 'go to, will', *arrivare a* 'arrive at, even do', *venire a* 'come to, end up', *tornare a* 'come back to, do again'

     b.   Aspectual verbs: *continuare a* 'keep on', *smettere di* 'refrain from', *cominciare a* 'begin', *iniziare a* 'begin', *prendere a* 'begin', *restare a* 'remain', *rimanere a* 'remain', *stare a* 'stay', *stare per* 'be about to', *solere* 'normally do', *finire di* 'finish'

     c.   Modal verbs: *dovere* 'must, should', *potere* 'can, be able, may', *volere* 'want', *sapere* 'know (how)', *avere da* 'have to', *sembrare* 'seem'

     d.   Other, subject control: *imparare a* 'learn (how)', *riuscire a* 'manage', *desiderare* 'desire', *detestare* 'hate', *esitare a* 'hesitate', *insegnare a* 'teach', *sperare* 'hope', *osare a* 'dare', *pensare di* 'think', *pretendere* 'intend', *preferire* 'prefer', *stentare a* 'find hard', *tentare di* 'try', *provare a* 'try', *valere* 'be worth'

In the case of *long object movement*, the direct argument of the lexical verb is promoted to the subject position when the restructuring verb is passivized. The verbs that allow for this operation are very few, and they are typically aspectual verbs.

(9)   Quelle case   furono   iniziat-e   a costruire negli anni '20.
              those   houses be.PST.3PL start.PRTC-PL.F to build.INF in.the years 20
              'Those houses were started to build in the 20's.' (literally)   (Cinque 2003: 34)

The focus of this chapter is on *auxiliary switch*. In Standard Italian, modal verbs in restructuring configurations can license auxiliary switch: the expected auxiliary HAVE does not show up, but rather the restructuring verb takes the auxiliary of the lexical, embedded verb. In particular, if a modal verb selects a HAVE-verb (i.e., a verb whose perfect auxiliary is HAVE: transitive and unergative predicates), then its auxiliary is invariably HAVE (10-a,b). If the modal verb merges with a BE-verb (i.e., unaccusative verbs, but also transitive predicates with reflexive or impersonal arguments), then its

auxiliary can optionally switch from HAVE to BE (10-c,d). Auxiliary switch is obligatory in the presence of clitic climbing (10-e,f).

(10)　a.　Teresa ha　　　　voluto　　comprar=lo.
　　　　　Teresa have.PRS.3SG want.PRTC buy.INF=ACC.3SG.M

　　　b.　*Teresa è　　　　voluto/-a　　comprar=lo.
　　　　　Teresa be.PRS.3SG want.PRTC/-SG.F buy.INF=ACC.3SG.M
　　　　　'Teresa wanted to buy it.'

　　　c.　Teresa ha　　　　voluto　　andar=ci.
　　　　　Teresa have.PRS.3SG want.PRTC go.INF=there

　　　d.　Teresa è　　　　volut-a　　andar=ci.
　　　　　Teresa be.PRS.3SG want.PRTC-SG.F go.INF=there

　　　e.　Teresa *ci=ha　　　　voluto　　andare.
　　　　　Teresa there=have.PRS.3SG want.PRTC go.INF

　　　f.　Teresa ci=è　　　　volut-a　　andare.
　　　　　Teresa there=be.PRS.3SG want.PRTC-SG.F go.INF
　　　　　'Teresa wanted to go there.'

Hence, auxiliary switch can be defined as the selection of the allomorph determined by the lower lexical verb for the perfect auxiliary of the higher modal verb. Note that in the previous literature neither a definition nor a formal analysis of this phenomenon.

In this chapter, I show that the distribution of the auxiliaries in (10) is the result of π-Agree in the same way as is the case for auxiliary selection in root clauses. Moreover, I provide an explanation not only for the selection of the allomorph of the auxiliary, but also for the interaction with clitic climbing. I will argue that there is no true optionality, but rather it is the possibility to select complements of different sizes that determines different search domains for Agree, with different results in the valuation of the person probe on Perf.

5.3 Auxiliary selection in restructuring

Modal verbs select HAVE as their own perfect auxiliary. This can be seen in the case of ellipsis (11-a) and nominal complementation (11-b), where the choice of auxiliary is not influenced by the type of complement clause (Rizzi 1976: 23).[4,5]

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[4]Saying that modal verbs select their own auxiliary is a simplistic description of the facts, since I have extensively argued against a selectional view of auxiliary selection, which is instead the result of π-Agree. If modal verbs "select" HAVE, this means that they are combined with a v that contains a probe that always manages to find a valued goal. In this chapter, I will argue that this v is a special v_{restr} with a person probe that is valued by the elided TP/CP complement in (11-a) and by the DP complement in (11-b). Hence, example (11) shows that modal verbs should be selected by a v with a valued person feature, thereby determining HAVE insertion.

[5]In the case of ellipsis in (11-a), the clause contains some kind of (elided) complement clause. However, the choice of the auxiliary does not depend on the type of elided complement clause. As shown in (i), when the elided verb is the transitive verb *mangiare* or the unaccusative verb *andare*, the perfect auxiliary of the stranded modal verb is always HAVE.

(11) a. Non ho   / *sono   voluto   Δ!
          not have.PRS.1SG / be.PRS.1SG want.PRTC
          'I didn't want to!'

     b. Ho   / *Sono   voluto   questo.
          have.PRS.1SG / be.PRS.1SG want.PRTC this
          'I wanted this.'

When auxiliary switch applies, a modal verb selects BE instead of HAVE if it embeds a BE-verb (unaccusative, reflexive, impersonal verbs, but not passives).

(12) Teresa è   volut-a   andare al   mare.
      Teresa be.PRS.3SG want.PRTC-SG.F go.INF to.the beach
      'Teresa wanted to go to the beach.'

Auxiliary switch is optional, but becomes obligatory in the presence of clitic climbing.

The verbs that allow for auxiliary switch are only modals, which cross-linguistically constitute the core of the category of restructuring predicates (Wurmbrand 2003, 2004; Grano 2015). Modal verbs are also robustly categorized as restructuring predicates as far as other diagnostics are concerned, for instance in relation to clitic climbing (Egerland 2009). These verbs are *volere, potere, dovere* 'want', 'can', 'must'. Aspectual verbs, instead, always select for HAVE, independently of the valency of the embedded verb. However, under some particular conditions that I describe in section §5.9.3 (which constitutes a new observation), some aspectual verbs can also switch their auxiliary (and must, in some specific contexts). In contrast, the perfect auxiliary of motion verbs never switches, and is always BE.

I now present the relevant data in details. The following examples contain the restructuring modal verb *volere* 'want', but the same behavior is observed with *potere* 'can' and *dovere* 'must'. If the verb in its complement is transitive, then the auxiliary is always HAVE, independently of the position of the clitic pronoun (if present), as (13-b,c) show.

(13) a. Teresa ha   voluto   mangiare la torta.
          Teresa have.PRS.3SG want.PRTC eat.INF   the cake
          'Teresa wanted to eat the cake.'

     b. Teresa ha   voluto   mangiar=la.
          Teresa have.PRS.3SG want.PRTC eat.INF=ACC.3SG.F

     c. Teresa l=ha   volut-a   mangiare.
          Teresa ACC.3SG.F=have.PRS.3SG want.PRTC-SG.F eat.INF
          'Teresa wanted to eat it.'

(i) a. Mangiare la pizza? Non ho   / *sono   voluto   Δ!
          eat.INF   the pizza not have.PRS.1SG / be.PRS.1SG want.PRTC
          'To eat pizza? I didn't want to!'
     b. Andare al   mare? Non ho   / *sono   voluto   Δ!
          go.INF   to.the beach not have.PRS.1SG / be.PRS.1SG want.PRTC
          'To go to the beach? I didn't want to!'

In contrast, if the lexical verb is an unaccusative predicate, the perfect auxiliary on the matrix modal can be either HAVE (14-a) or BE (14-b).[6] The emergence of BE constitutes the so-called phenomenon of auxiliary switch. However, if the unaccusative verb has a clitic argument, then auxiliary switch suddenly becomes obligatory (14-c,d).

(14)   a.   Teresa ha   voluto   andar=ci   ieri.
             Teresa have.PRS.3SG want.PRTC go.INF=there yesterday

        b.   Teresa è   volut-a   andar=ci   ieri.
             Teresa be.PRS.3SG want.PRTC-SG.F go.INF=there yesterday

        c.   Teresa ci=è   volut-a   andare ieri.
             Teresa there=be.PRS.3SG want.PRTC-SG.F go.INF yesterday

        d.   *Teresa ci=ha   voluto   andare ieri.
             Teresa there=have.PRS.3SG want.PRTC go.INF yesterday
             'Teresa wanted to go there yesterday.'

As for clitics, only the locative *ci*, the partitive *ne* and the impersonal *si* can be arguments of unaccusative verbs. We have just seen an example with the clitic *ci* in (14-c,d). Note that it is not clitic climbing of the pronoun *ci* itself that can change the perfect auxiliary. In fact, in the case of unergative verbs the auxiliary is invariably HAVE, as (15-a,b) show.

(15)   a.   *Teresa ci=è   volut-a   lavorare per tre   anni.
             Teresa there=be.PRS.3SG want.PRTC-SG.F work.INF for three years

        b.   Teresa ci=ha   voluto   lavorare per tre   anni.
             Teresa there=have.PRS.3SG want.PRTC work.INF for three years
             'Teresa wanted to work there for three years.'

The same can be said for the clitic *ne*. When it climbs, it invariably triggers obligatory auxiliary switch.

(16)   a.   Di modelle, hanno   voluto   venir=ne   molte.
             of models   have.PRS.3PL want.PRTC come.INF=of many

        b.   Di modelle, sono   volut-e   venir=ne   molte.
             of models   be.PRS.3PL want.PRTC-PL.F come.INF=of many

        c.   Di modelle, ne=sono   volut-e   venire   molte.
             of models   of=be.PRS.3PL want.PRTC-PL.F come.INF many

        d.   *Di modelle, ne=hanno   voluto/-e   venire   molte.
             of models   of=have.PRS.3PL want.PRTC/-PL.F come.INF many
             'Of models, many of them wanted to come.'

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[6] In this chapter, I provide many examples with the verb *andare* 'go' because it is a very frequent one. The reader might wonder if it is so obvious that such a verb is unaccusative and not unergative, given that its subject is more agentive than the subject of the other unaccusative verbs such as *morire* 'die', *cadere* 'fall'. In Standard Italian, *andare* behaves as an unaccusative verb as far as these diagnostics are concerned: (i) auxiliary selection, (ii) *ne*-cliticization, (iii) reduced relative clauses, (iv) impossibility of deverbal agent nouns. However, nothing changes if the examples in this chapter contain the verbs *morire* 'die', *cadere* 'fall', instead.

The reflexive clitic pronoun behaves similarly. When this is the direct or indirect object of a transitive verb, auxiliary switch on the modal verb is always obligatory in the presence of clitic climbing. As (17-c,d) illustrates, auxiliary switch is obligatory when the reflexive direct object of the transitive verb climbs.

(17) a. Teresa ha voluto lavar=si ieri.
Teresa have.PRS.3SG want.PRTC wash.INF=REFL.ACC.3SG.F yesterday

b. ??Teresa è volut-a lavar=si ieri.
Teresa be.PRS.3SG want.PRTC-SG.F wash.INF=REFL.ACC.3SG.F yesterday

c. *Teresa si=ha voluto lavare ieri.
Teresa REFL.ACC.3SG.F=have.PRS.3SG want.PRTC wash.INF yesterday

d. Teresa si=è volut-a lavare ieri.
Teresa REFL.ACC.3SG.F=be.PRS.3SG want.PRTC-SG.F wash.INF yesterday
'Teresa wanted to wash herself yesterday.'

Note also that auxiliary switch without clitic climbing is non-fully grammatical (17-b).

The same happens when the reflexive clitic is a dative benefactive argument.

(18) a. Teresa ha voluto mangiar=si il panino.
Teresa have.PRS.3SG want.PRTC eat.INF=REFL.DAT.3SG.F the sandwich

b. ??Teresa è volut-a mangiar=si il panino.
Teresa be.PRS.3SG want.PRTC-SG.F eat.INF=REFL.DAT.3SG.F the sandwich

c. *Teresa si=ha voluto mangiare il panino.
Teresa REFL.DAT.3SG.F=have.PRS.3SG want.PRTC eat.INF the sandwich

d. Teresa si=è volut-a mangiare il
Teresa REFL.DAT.3SG.F=be.PRS.3SG want.PRTC-SG.F eat.INF the
panino.
sandwich
'Teresa wanted to eat the sandwich for/by herself.'

Impersonal clauses pattern slightly differently. The clitic impersonal pronoun *si* must climb, differently from other clitics. Consequently, auxiliary switch is obligatory. I present the data for impersonal transitive verbs with object agreement (19), impersonal transitive verbs without object agreement (20), impersonal unergative verbs (21), impersonal unaccusative verbs (22).[7]

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[7]Examples (19-a) and (20-a) (both without participle agreement) are grammatical if *si* is a benefactive dative for third person plural, instead of an impersonal pronoun. Example (20-d) is ambiguous with a clause with a benefactive dative for third person singular. As for examples (22-d) and (22-e), the grammaticality judgments may vary among speakers. In particular, for some speakers the sentence with participle agreement in (22-d) is not grammatical. However, according to my competence this sentence is perfectly fine. Similar examples of impersonal clauses with unaccusative verb and participle agreement on the modal verb can be found in Cinque (1988).

(19)   a.   *Hanno   voluto/-i   mangiar=si   gli spaghetti.
            have.PRS.3PL want.PRTC/PRTC-PL.M eat.INF=IMPERS the spaghetti

       b.   *Sono   voluto/-i   mangiar=si   gli spaghetti.
            be.PRS.3PL want.PRTC/PRTC-PL.M eat.INF=IMPERS the spaghetti

       c.   *Si=hanno   voluto/-i   mangiare gli spaghetti.
            IMPERS=have.PRS.3PL want.PRTC/PRTC-PL.M eat.INF   the spaghetti

       d.   Si=sono   volut-i   mangiare gli spaghetti.
            IMPERS=be.PRS.3PL want.PRTC-PL.M eat.INF   the spaghetti
            'One wanted to eat the spaghetti.'

(20)   a.   *Ha   voluto   mangiar=si   gli spaghetti.
            have.PRS.3SG want.PRTC eat.INF=IMPERS the spaghetti

       b.   *È   voluto   mangiar=si   gli spaghetti.
            be.PRS.3SG want.PRTC eat.INF=IMPERS the spaghetti

       c.   *Si=ha   voluto   mangiare gli spaghetti.
            IMPERS=have.PRS.3SG want.PRTC eat.INF   the spaghetti

       d.   Si=è   voluto   mangiare gli spaghetti.
            IMPERS=be.PRS.3SG want.PRTC eat.INF   the spaghetti
            'One wanted to eat the spaghetti.'

(21)   a.   *Ha   voluto   lavorar=si   molto.
            have.PRS.3SG want.PRTC work.INF=IMPERS a   lot

       b.   *È   voluto   lavorar=si   molto.
            be.PRS.3SG want.PRTC-SG.F work.INF=IMPERS a   lot

       c.   *Si=ha   voluto   lavorare molto.
            IMPERS=have.PRS.3SG want.PRTC work.INF a   lot

       d.   Si=è   voluto   lavorare molto.
            IMPERS=be.PRS.3SG want.PRTC-SG.F work.INF a   lot
            'One wanted to work a lot.'

(22)   a.   *Ha   voluto   arrivar=si   in anticipo.
            have.PRS.3SG want.PRTC arrive.INF=IMPERS on time

       b.   *È   voluto   arrivar=si   in anticipo.
            be.PRS.3SG want.PRTC-SG.F arrive.INF=IMPERS on time

       c.   *Si=ha   voluto   arrivare in anticipo.
            IMPERS=have.PRS.3SG want.PRTC arrive.INF on time

       d.   Si=è   volut-i   arrivare in anticipo.
            IMPERS=be.PRS.3SG want.PRTC-PL.M arrive.INF on time

       e.   *Si=è   voluto   arrivare in anticipo.
            IMPERS=be.PRS.3SG want.PRTC arrive.INF on time
            'One wanted to arrive on time.'

As the examples above illustrate, the impersonal clitic must climb to the matrix verb, and climbing of *si* imposes auxiliary switch.

Let me spend some words on the clitic *si*. This clitic pronoun can have different functions. On the basis of the analysis by D'Alessandro (2004), we can distinguish different

classes: reflexive, applicative (here called benefactive), reciprocal, middle (here called impersonal), passive (here called impersonal with agreement), unaccusative, inherently reflexive, inchoative. In root clauses, all these different instances of *si* require the auxiliary BE. In Table 5.1 I represent the different types of *si* and their interaction with the auxiliary in restructuring.

types of *si*	✗ Aux switch + ✗ cl cl	✓ Aux switch + ✗ cl cl	✗ Aux switch + ✓ cl cl	✓ Aux switch + ✓ cl cl
reflexive =(17)	ok	*	*	ok
applicative =(18)	ok	*	*	ok
passive =(19)	*	*	*	ok
middle =(20),(21),(22)	*	*	*	ok
reciprocal	ok	*	*	ok
unaccusative	?	?	*	ok
inherently reflexive	ok	?	*	ok
inchoative	ok	*	*	ok

Table 5.1: *Si* and auxiliary switch in restructuring.

As Table 5.1 illustrates, the different types of *si* lead to different results for auxiliary selection when the clitic does not climb (first and second columns of the table). In particular, lack of clitic climbing and lack of auxiliary switch (first column of the table) is ungrammatical only with the impersonal type of *si*. This means that auxiliary switch is obligatory in impersonal clauses, whereas it is optional in other contexts. Not all types of *si* trigger obligatory auxiliary switch: neither does the anaphoric *si* (reflexive, reciprocal, applicative), nor the inherently reflexive, nor the inchoative. In general, for all types of *si*, if the clitic stays in the lower position, then it is impossible to switch the auxiliary to BE (second column of the table). If the clitic has moved to the higher position, then auxiliary switch is required for all types of *si* (third column of the table). Finally, for all instances of *si* it is always possible to simultaneously perform both operations (fourth column of the table).

Since the clitics require auxiliary switch in restructuring to different extents (obligatory for the impersonal, optional with reflexives), the configuration that leads to auxiliary switch should be different according to which type of clitic is present in the structure. In fact, auxiliary switch could be due either to the featural specification of the clitic, or to its position in the structure. For instance, one of the differences, at least for transitive clauses, between impersonal *si* (middle and passive) versus anaphoric *si* (reflexive, applicative, reciprocal) is the different base position of the clitic. With transitive verbs, the impersonal clitic *si* is not merged in the object position, but rather in the external argument position, whereas the reflexive *si* is instead base-generated as the indirect or direct object of the lexical verb.[8] As we will see in the analysis of reflexive and impersonal clauses (in sections

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[8] As I said in section §3.2.4.2 in chapter 3, I consider impersonal *si* as an argumental clitic with a defective set of ϕ-features, which cannot be bound, but must be licensed by a special Voice$_{\text{impers}}$. To be more precise, the difference in auxiliary selection is not due to the different base position of the clitics, but rather to the presence of this impersonal Voice head. In fact, in the case of unaccusative impersonal

§5.7.2, §5.7.6 and §5.7.8), different structures are responsible for the results in Table 5.1.

Finally, if the restructuring verb takes a passivized predicate as its complement, then it is impossible to have auxiliary switch. This fact has already been noticed by Rizzi (1982: 45), Burzio (1986: 364-365).

(23) a. Dopo la festa, Teresa ha voluto essere portat-a a
after the party Teresa have.PRS.3SG want.PRTC be.INF bring.PRTC-SG.F at
casa dal suo ragazzo.
home by her boyfriend

b. *Dopo la festa, Teresa è volut-a essere
after the party Teresa be.PRS.3SG want.PRTC-SG.F be.INF
portat-a a casa dal suo ragazzo.
bring.PRTC-SG.F at home by her boyfriend
'After the party, Teresa wanted to be brought at home by her boyfriend.'

The auxiliary of the modal is not influenced by the position of the clitic.

(24) a. Teresa ha voluto esser=gli presentat-a
Teresa have.PRS.3SG want.PRTC be.INF=DAT.3SG.M introduce.PRTC-SG.F
il prima possibile.
the soon possible

b. Teresa gli=ha voluto essere presentat-a
Teresa DAT.3SG.M=have.PRS.3SG want.PRTC be.INF introduce.PRTC-SG.F
il prima possibile.
the soon possible
'Teresa wanted to be introduced to him as soon as possible.'

The summary of the distribution of the two auxiliaries for modal verbs is represented in Table 5.2 (here and in the rest of the chapter, the abbreviation *aux switch* stands for 'auxiliary switch', and *cl cl* for 'clitic climbing').

	restructuring verb	lexical verb	aux selection	aux switch	cl cl
a.	modal	transitive	HAVE	no	irrelevant
b.	modal	unergative	HAVE	no	irrelevant
c.	modal	passive	HAVE	no	irrelevant
d.	modal	unaccusative	HAVE/BE	no/yes	relevant
e.	modal	reflexive	HAVE/BE	no/yes	relevant
f.	modal	impersonal	BE	yes	yes

Table 5.2: Auxiliary selection with modal verbs.

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clauses, the impersonal argument is merged in the object position, in the very same way as a canonical argument and as the reflexive direct object (cf. analysis in section §3.3.9.4 in chapter 3).

5.3.1 Aspectual and motion verbs

In general, other restructuring verbs do not allow for auxiliary switch. Nonetheless, this is possible under some specific circumstances.

Among the restructuring aspectual verbs, we can mention the verbs *continuare a* 'keep on', *smettere di* 'refrain from', *cominciare a* 'begin', *iniziare a* 'begin', *prendere a* 'begin', *restare a* 'remain', *rimanere a* 'remain', *stare a* 'stay', *stare per* 'be about to', *solere* 'normally do', *finire di* 'finish'. Aspectual verbs generally maintain their auxiliary, which is HAVE (25-a,b). However, if the lexical verb is unaccusative and in the presence of clitic climbing, then auxiliary switch becomes instead a possibility also for these verbs (25-c).

(25)   a.   Teresa ha   cominciato a andar=ci   tre   mesi   fa.
           Teresa have.PRS.3SG start.PRTC to go.INF=there three months ago

      b.   *Teresa è   cominciat-a   a andar=ci   tre   mesi   fa.
           Teresa be.PRS.3SG start.PRTC-3SG.F to go.INF=there three months ago

      c.   Teresa ci=è   cominciat-a   a andare tre   mesi   fa.
           Teresa there=be.PRS.3SG start.PRTC-SG.F to go.INF three months ago

      d.   Teresa ci=ha   cominciato a andare tre   mesi   fa.
           Teresa there=have.PRS.3SG start.PRTC to go.INF three months ago
           'Teresa started going there three months ago.'

Auxiliary switch here is optional: the variant without auxiliary switch in presence of clitic climbing (25-d) can be found as well (but cf. section §5.9.3 for a more precise description of the data). This behavior is different from modal verbs, where optionality is possible only without clitic climbing, but it breaks down in favor of auxiliary switch when the clitic climbs (cf. (14-a) and (14-b), versus (14-c) and (14-d)). As far as I know, the possibility of auxiliary switch for aspectual verb constitutes a new observation.

Interestingly, aspectual verbs behave exactly as modal verbs when there is a reflexive argument or an impersonal pronoun. In (26-a,b), I show that auxiliary switch is not only possible, but indeed obligatory when the reflexive clitic climbs. Note, again, that auxiliary switch is impossible when the clitic stays in the lower position (26-c,d).

(26)   a.   *Teresa si=ha   cominciato a lavare.
           Teresa REFL.ACC.3SG.F=have.PRS.3SG start.PRTC to wash.INF

      b.   Teresa si=è   cominciat-a   a lavare.
           Teresa REFL.ACC.3SG.F=have.PRS.3SG start.PRTC-SG.F to wash.INF

      c.   Teresa ha   cominciato a lavar=si.
           Teresa have.PRS.3SG start.PRTC to wash.INF=REFL.ACC.3SG.F

      d.   *Teresa è   cominciat-a   a lavar=si.
           Teresa have.PRS.3SG start.PRTC-SG.F to wash.INF=REFL.ACC.3SG.F
           'Teresa has started washing herself.'

The same pattern can be observed with indirect reflexive objects in benefactive construc-

tions.

(27) a. *Teresa si=ha   cominciato a mangiare il
          Teresa REFL.DAT.3SG.F=have.PRS.3SG start.PRTC to eat.INF   the
          panino.
          sandwich
          'Teresa started washing herself.'

      b. ?Teresa si=è   cominciat-a   a mangiare il
          Teresa REFL.DAT.3SG.F=have.PRS.3SG start.PRTC-SG.F to eat.INF   the
          panino.
          sandwich

      c. Teresa ha   cominciato a mangiar=si   il panino.
          Teresa have.PRS.3SG start.PRTC to eat.INF=REFL.DAT.3SG.F the sandwich

      d. *Teresa è   cominciat-a   a mangiar=si   il
          Teresa have.PRS.3SG start.PRTC-SG.F to eat.INF=REFL.DAT.3SG.F the
          panino.
          sandwich
          'Teresa has started eating her sandwich.'

The same picture can be seen in impersonal clauses. As we already saw for modal verbs, even for aspectual verbs clitic climbing and auxiliary switch are obligatory. I present here some examples with a transitive verb with agreement (28) and without agreement (29), with an unergative verb (30), with an unaccusative verb (31). Note also that the grammaticality judgments may vary among speakers. In particular, for some speakers the sentence with participle agreement in (31-d) is not grammatical. However, according to my competence this sentence is perfectly fine.

(28) a. *Hanno   cominciato a mangiar=si   gli spaghetti.
          have.PRS.3PL start.PRTC to eat.INF=IMPERS the spaghetti

      b. *Sono   cominciato/-i   a mangiar=si   gli spaghetti.
          be.PRS.3PL start.PRTC/PRTC-PL.M to eat.INF=IMPERS the spaghetti

      c. *Si=hanno   cominciato/-i   a mangiare gli spaghetti.
          IMPERS=have.PRS.3PL start.PRTC/PRTC-PL.M to eat.INF   the spaghetti

      d. Si=sono   cominciat-i   a mangiare gli spaghetti.
          IMPERS=be.PRS.3PL start.PRTC-PL.M to eat.INF   the spaghetti
          'One has started to eat the spaghetti.'

(29) a. *Ha   cominciato a mangiar=si   gli spaghetti.
          have.PRS.3SG start.PRTC to eat.INF=IMPERS the spaghetti

      b. *È   cominciato a mangiar=si   gli spaghetti.
          be.PRS.3SG start.PRTC to eat.INF=IMPERS the spaghetti

      c. *Si=ha   cominciato a mangiare gli spaghetti.
          IMPERS=have.PRS.3SG start.PRTC to eat.INF   the spaghetti

      d. Si=è   cominciato a mangiare gli spaghetti.
          IMPERS=be.PRS.3SG start.PRTC to eat.INF   the spaghetti

'One has started to eat the spaghetti.'

(30)   a.   *Ha   cominciato a lavorar=si   molto.
                have.PRS.3SG start.PRTC to work.INF=IMPERS a lot

          b.   *È   cominciato a lavorar=si   molto.
                be.PRS.3SG start.PRTC to work.INF=IMPERS a lot

          c.   *Si=ha   cominciato a lavorare molto.
                IMPERS=have.PRS.3SG start.PRTC to work.INF a lot

          d.   Si=è   cominciato a lavorare molto.
                IMPERS=be.PRS.3SG start.PRTC to work.INF a lot
                'One has started to work a lot.'

(31)   a.   *Ha   cominciato a arrivar=si   in anticipo.
                have.PRS.3SG start.PRTC to arrive.INF=IMPERS on time

          b.   *È   cominciato a arrivar=si   in anticipo.
                 be.PRS.3SG start.PRTC to arrive.INF=IMPERS on time

          c.   *Si=ha   cominciato a arrivare   in anticipo.
                IMPERS=have.PRS.3SG start.PRTC to arrive.INF on time

          d.   Si=è   cominciat-i   a arrivare   in anticipo.
                IMPERS=be.PRS.3SG start.PRTC-PL.M to arrive.INF on time

          e.   Si=è   cominciato a arrivare   in anticipo.
                IMPERS=be.PRS.3SG start.PRTC to arrive.INF on time
                'One has started to arrive on time.'

These data have gone unnoticed in the literature on restructuring. The possibility of auxiliary switch for aspectual verbs seems to depend on the type of restructuring verb, on clitic placement, and on the type of arguments (in particular, on animacy). I will give a more fine grained description of these facts in section §5.9. I will also sketch an analysis for auxiliary switch with aspectual verbs in section §5.9.3.

Let us now look at motion verbs. Restructuring motion verbs are *andare a* 'go to, will', *arrivare a* 'arrive at, even do', *venire a* 'come to, end up', *tornare a* 'come back to, do again'. With these verbs, the perfect auxiliary is invariably realized as BE. This also happens when a transitive verb is embedded (32-a), and even in the presence of clitic climbing (32-c).

(32)   a.   Teresa è   andat-a   a mangiare la torta.
                Teresa be.PRS.3SG go.PRTC-SG.F to eat.INF   the cake

          b.   *Teresa ha   andato/-a   a mangiare la torta.
                Teresa have.PRS.3SG go.PRTC/PRTC-SG.F to eat.INF   the cake
                'Teresa went to eat the cake.'

          c.   Teresa la=è   andat-a   a mangiare.
                Teresa ACC.3SG.F=be.PRS.3SG go.PRTC-SG.F to eat.INF
                'Teresa went to eat it.'

Reflexive arguments (33-a,b) and impersonal *si* (33-c) do not provoke any change in the

auxiliary. This is expected, since the auxiliary is already BE.

(33) a. Teresa è   andat-a   a lavar=si.
          Teresa be.PRS.3SG go.PRTC-SG.F to wash.INF=REFL
          'Teresa went to eat the cake.'

     b. Teresa si=è   andat-a   a lavare.
          Teresa REFL=be.PRS.3SG go.PRTC-SG.F to wash.INF
          'Teresa went to wash herself.'

     c. Si=è   andat-i   a lavorare.
          IMPERS=be.PRS.3SG go.PRTC-PL.M to work.INF
          'One went to work.'

5.4 Previous analyses

5.4.1 Previous analyses of restructuring

There are many different previous accounts of restructuring that vary depending on different factors: biclausal or monoclausal, obligatory or optional, with obligatory or optional transparency effects, with complements of different sizes. Since the focus of this dissertation is auxiliary selection and not restructuring in itself, and since only modal verbs allow for auxiliary switch, I focus here only on analyses of modal verbs. For these restructuring verbs, a monoclausal approach is generally widely assumed (although not for aspectual and motion verbs). Hence, I will stick to monoclausal approaches to restructuring, as proposed by Wurmbrand (2003, 2004); Cinque (2004); Cardinaletti and Shlonsky (2004); Grano (2015).[9]

In Cinque's (2004) approach, restructuring verbs are always functional heads. Restructuring is obligatorily, whereas transparency effects (clitic climbing, auxiliary switch, long object movement) are optional. Consequently, restructuring is obligatory and always monoclausal, since there is just a single syntactic spine of functional projections. Evidence for this claim comes from the possible combinations of restructuring verbs, which must follow a strict order that is supposed to track the order of the clausal functional heads. Moreover, adverbs cannot be repeated, meaning that there is only a single sequence of functional projections.[10] Counter-evidence for their exclusively functional use might come

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[9]For other monoclausal analyses, cf. Strozer (1977); Cremers (1983); Picallo (1990); Rochette (1990, 1999); Rosen (1991); Haider (1993, 2010); Moore (1994); Kiss (2011). For theories of restructuring that start out with a biclausal structure, cf. Baker (1988); Sternefeld (1990); Sabel (1996); Koopman and Szabolcsi (2000); Müller (2017); Pesetsky (2019).

[10]Under the cartographic approach, adopted by Cinque (2004), it should never be possible to find the same adverb twice in a restructuring clause, even when trasparency effects are missing (since restructuring configurations are always monoclausal). In the following example, provided by Cinque (2004: 138), the adverb *già* 'already' can be repeated twice if the clitic does not climb to the higher position (i-a) or if the auxiliary does not switch (i-c). In (i-b), the adverb *già* cannot be repeated because clitic climbing has occurred, showing that the sentence is monoclausal; the same fact is suggested by the presence of auxiliary switch in (i-d).

from nominal complementation, which is possible with the verb *volere* 'want'.[11] However, it has been argued that in these cases there is some hidden structure involved (Cinque 2004; Grano 2015, building on Larson, Den Dikken, and Ludlow 1997). The restructuring verb does not directly select the DP as its object, but rather an abstract verbal complement (HAVE or OBTAIN) that takes the DP as its complement: V_{restr} [$_{XP}$ HAVE [$_{DP}$ DP]].

The alternative idea that modal verbs can combine with different types of complements has been proposed by Cardinaletti and Shlonsky (2004). In particular, restructuring takes place when the modal verb selects for a reduced complement, whereas a bigger complement means lack of restructuring. Under this approach, restructuring is monoclausal, but restructuring verbs may also appear in non restructured configurations, differently from Cinque (2004). The variation in the size of the clause and, consequently, in restructuring, affects all restructuring verbs, modal verbs included. Every restructuring verb can select either for a CP, resulting in a biclausal structure without any transparency effect, or for

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(i) a. Maria vorrebbe   già   aver=lo   già   lasciato.
         Maria want.COND.3SG already have.INF=ACC.3SG.M already leave.PRTC
     b. *Maria lo=vorrebbe   già   aver   già   lasciato.
         Maria ACC.3SG.M=want.COND.3SG already have.INF already leave.PRTC
         'Maria would already want to have left him already.'
     c. Paolo avrebbe   sempre voluto   arrivare sempre tra   i   primi.
         Paolo have.COND.3SG always want.PRTC arrive.INF always between the first
     d. *Paolo sarebbe   sempre voluto   arrivare sempre tra   i   primi.
         Paolo be.COND.3SG always want.PRTC arrive.INF always between the first
         'Paolo would always have wanted to arrive always among the first.'

This behavior is not restricted to the somehow special modal verb *volere*, but it is also possible for *dovere* and *potere*. How are sentences as (i-a,c) ever possible under Cinque's theory of restructuring? It remains unclear how Cinque accounts for these cases.

As I will show in this chapter, under my analysis the lack of transparency effects in (i-a,c) is due to a bigger structure of the complement with respect to (i-b,d). In particular, in (i-a,c) the structure is big enough to contain a low and a high TP projection. In fact, the lexical verb in the sentences in (i) has a perfect meaning, which is due to the presence of a lower PerfP. Hence, the sequence of projections is repeated once lower, once higher in the structure, and both TPs can host the TP-layer adverb *già* 'already'. Sentences (i-b,d) are ungrammatical because the auxiliary BE and the clitic in the high position can be found only with a complement smaller than a TP, where there is no position for the lower occurrence of *già*. The underlying assumption is that sequences of functional projections can be repeated, differently from the cartographic approach.

[11]The future-oriented verb *volere* is the only modal verb that can take a DP argument. With other modals, DPs are marginally possible if they are demonstrative or clitic pronouns that refer to a clausal complement.

(i) a. Ho   voluto   un compito.
         have.PRS.1SG want.PRTC a   task
         'I wanted a task.'
     b. *Ho   dovuto   un compito.
         have.PRS.1SG must.PRTC a   task
     c. *Ho   potuto   un compito.
         have.PRS.1SG can.PRTC un   task
     d. ??L=ho   dovuto   / potuto.
         ACC.3SG.M=have.PRS.1SG must.PRTC   can.PRTC
     e. ?Ho   dovuto   / potuto   questo.
         have.PRS.1SG must.PRTC   can.PRTC this

I refer the reader to Grano (2015) for a detailed analysis of the modal verb *volere* 'want'.

a smaller complement, leading to a monoclausal configuration where auxiliary switch is obligatory (when applicable), and clitic climbing may reach the finite verb (their analysis of clitic placement is a bit more complicated, as discussed in sections 5.7.9.2 and §5.10).

The proposal by Wurmbrand (2003, 2004) is similar to Cardinaletti and Shlonsky's (2004), since it allows for different sizes of the complement. Differently from Cardinaletti and Shlonsky (2004), here the variation does not affect a single item, but the classes of restructuring verbs, which are distributed along a cline of "functionality". Restructuring verbs allow for different complementation depending on "how much" they are restructuring verbs. There are different groups of restructuring verbs: verbs that always trigger restructuring, for example modals, and other verbs, for example aspectuals, which behave differently with respect to some diagnostics and which do not constitute an homogeneous class cross-linguistically. For the former verbs, which are called *functional restructuring verbs*, restructuring is always obligatory, it involves a small complement and it leads to obligatory transparency effects. The latter verbs, called *lexical restructuring verbs*, allow for different sizes of the complement, with the result that restructuring takes place only when the selected complement is small enough.

Looking at transparency effects (clitic climbing, auxiliary switch and long object movement), there are different ways to account for their presence or absence. According to Cinque (2004), since restructuring is obligatory, transparency effects must be optional, given that they do not always take place. This means that every clause containing a modal verb is a restructuring clause, but it does not necessarily exhibit clitic climbing or auxiliary switch. These effects might have applied or might have not taken place, without implying a different syntactic structure. In contrast, transparency effects are used by Cardinaletti and Shlonsky (2004) as diagnostics to check the size of the clause. If they are present, the sentence is restructured and monoclausal; if they are absent, then there is a CP boundary involved, and restructuring does not take place.

5.4.2 Previous analyses of auxiliary switch

The phenomenon of auxiliary switch has never been deeply analyzed, as far as I know. This transparency effect is often used as a test for restructuring (Wurmbrand 1999, 2003; Cardinaletti and Shlonsky 2004), or it is considered as an optional sign of it (Cinque 2004), but it is not given itself an explanation. According to Cardinaletti and Shlonsky (2004: 536), whose work represents one of the most explicit analysis of restructuring effects, "auxiliary switch is the hallmark of modals used as functional verbs and a necessary condition for clitic climbing". However, nothing else is said about the mechanism itself. In general, in the literature on restructuring, it is only said that if the configuration is monoclausal, then the auxiliary of the modal can be realized as the one of the lexical verb. There exists neither an explicit definition, nor a syntactic, morphological, phonological or lexical analysis.

Given this gap in the literature, we may now consider the previous analyses of auxiliary

selection that I have presented in chapter 3 and see if they can account for auxiliary selection in restructuring. The crucial factor for auxiliary selection is considered to be either the external argument (Bjorkman 2011) or the type of v (D'Alessandro and Roberts 2010). In Bjorkman's (2011) proposal, the presence of an external argument leads to defective intervention in the Agree relation between a [D] feature on Perf and the lexical verb. The failure of Agree causes the incorporation of [D] into Perf, which is consequently realized by the more specific allomorph HAVE (following the idea that HAVE is equal to BE plus something else, cf. Kayne 1993). Instead, D'Alessandro and Roberts (2010) argue that Perf is realized differently depending on the type of v it selects. In Standard Italian, the generalization is as follows: the auxiliary is realized as HAVE when the v that it selects is non-defective (D'Alessandro and Roberts 2010: 51).

If we try to apply these analyses to restructuring, they all fail to derive the pattern in (10), repeated here again.

(34) a. Teresa ha   voluto   comprar=lo.
          Teresa have.PRS.3SG want.PRTC buy.INF=ACC.3SG.M

   b. *Teresa è   voluto/-a   comprar=lo.
       Teresa be.PRS.3SG want.PRTC/-SG.F buy.INF=ACC.3SG.M
       'Teresa wanted to buy it.'

   c. Teresa ha   voluto   andar=ci.
       Teresa have.PRS.3SG want.PRTC go.INF=there

   d. Teresa è   volut-a   andar=ci.
       Teresa be.PRS.3SG want.PRTC-SG.F go.INF=there

   e. Teresa *ci=ha   voluto   andare.
       Teresa there=have.PRS.3SG want.PRTC go.INF

   f. Teresa ci=è   volut-a   andare.
       Teresa there=be.PRS.3SG want.PRTC-SG.F go.INF
       'Teresa wanted to go there.'

Under Bjorkman's (2011) account, HAVE is always expected in (34). In fact, the DP$_{sbj}$ always intervenes, thereby disrupting the Agree relation between the higher head Perf and the lower lexical verb. In restructuring, the DP$_{sbj}$ must move to the subject position, crossing different escape hatches of phases (the v associated with the lexical verb, and potentially the v associated with the modal verb). The DP$_{sbj}$ intervenes between Perf and the lexical verb if it has already been raised and is located in the higher Spec,vP when Perf probes, always leading to HAVE insertion. Alternatively, if one assumes that unaccusative v does not constitute a phase boundary, and that the restructuring verb is not associated with its own v, then one can derive the auxiliary BE with unaccusative verbs in (34-d), but not the auxiliary HAVE in (34-c). In addition, assuming that the subject does not raise and is an argument of the restructuring verb does not help either in deriving the distribution in (34).

Under D'Alessandro and Roberts's (2010) analysis, we can construct four different

scenarios, but in none of these cases we arrive at the right predictions. If the restructuring verb is always selected by a transitive v, HAVE is always inserted. If the restructuring v is always defective, as for raising verbs, BE is invariably inserted. If the auxiliary is determined by a matching condition (which must be considered either as a constraint on restructuring, or as a consequence of the fact that in restructuring configurations there might be only a single v, namely the one associated with the lexical verb), then the auxiliary should always obligatorily switch, and a sentence such as (34-c) should be impossible. If there is optional alternation between a non-defective v and a defective v, then the auxiliary BE is possible also with transitive verbs, contrary to example (34-b). Hence, one should specify under which conditions the optional alternation between two different vs is possible, when it is impossible and how this interacts with clitics as in (34-e,f).

To conclude, it seems that no previous analysis of restructuring or of auxiliary selection can account for auxiliary switch. In the next sections, in particular in §5.6, I will propose an analysis of auxiliary switch in restructuring, based on the analysis of auxiliary selection that I have proposed in chapter 3.

5.5 Restructuring: proposal

In this dissertation, I propose that restructuring configurations are monoclausal raising structures of different sizes. Restructuring verbs can take different types of complements, namely vPs or TPs, but not CPs. In both cases, the complement is reduced and the structure is monoclausal (assuming the presence of a CP boundary as a sign of biclausality). Restructuring verbs can take different types of complements, as argued by Cardinaletti and Shlonsky (2004), but crucially they can never select a CP complement, thereby always being functional verbs.[12] Hence, restructuring verbs are always restructuring predicates, as proposed by Cinque (2004). However, differently from Cinque (2004), I argue that transparency effects are not optional. The presence or lack of transparency effects derives from a difference in the syntactic structure.

My proposal shares some similarities both with the claim of obligatory functional restructuring (Wurmbrand 2003, 2004; Cinque 2004), and with the idea of optionality with respect to complementation (partially as in Cardinaletti and Shlonsky 2004; Wurmbrand 2004, 2014). From the former approach, I adopt the hypothesis that restructuring verbs are always functional. However, I reject the idea that transparency effects are optional. I also reinterpret the fact that functional sequences cannot be repeated, as claimed under the cartographic approach. Instead, I argue that different complement sizes are possible, resulting in a syntactic structure that contains two TPs or two vPs (one in the higher

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[12]I do not enter the discussion of nominal complementation: it could be that, next to the TP and vP complementation (determined by a special v_{restr}), a DP complementation (with selection by a transitive v) is possible too, meaning that these verbs can also be categorized as lexical verbs according to their selectional properties. Alternatively, there could be some hidden structure as in Cinque (2004)'s proposal.

position, one in the lower position).

From the latter proposal, I adopt the idea that transparency effects really show a structural difference. Wurmbrand (2014: 424) claims that there are different degrees of restructuring, from no restructuring (CP complement), to core restructuring (vP/VP complement), including cases of TP complementation with some restructuring behavior, exactly as I argue here.

(35) a. matrix V $[_{CP}$ $[_{TP/wollP}$ $[_{v}$P $[_{VP}$]]]] no restructuring

  b. matrix V $[_{TP/wollP}$ $[_{v}$P $[_{VP}$]]] "a little" restructuring

  c. matrix V $[_{v}$P $[_{VP}$]] "more" restructuring

  d. matrix V $[_{VP}$] "most" restructuring

  (Wurmbrand 2014: 424)

Wurmbrand's (2014) proposal concerns only some types of restructuring verbs (lexical restructuring verbs). Instead, I would like to argue that in Italian all restructuring verbs allow for complement of different sizes, and exhibit no detectable semantic differences regarding TP and vP complements (cf. also discussion in section §5.8). In addition, differently from Cardinaletti and Shlonsky (2004), I argue that sentences with modal verbs are always restructuring clauses, even when no transparency effect takes place.

In restructuring clauses, there is just a single overt subject, as is the case in sentences with a single predicate. However, there must be a lower position than the surface position for the subject because of the semantic interpretation: the DP$_{sbj}$ is interpreted as the subject of the lower lexical verb. Wurmbrand (1999, 2003, 2004) has shown that, cross-linguistically, in restructuring with modal verbs the subject starts out as an argument of the embedded verb, it is interpreted below the modal verb and does not receive any Theta-role from the modal verb. Under this analysis, modal verbs behave as raising verbs. Since the subject should originate as an argument of the lexical verb, a VP complement must be excluded, since it cannot provide a position for the subject. The complement must be at least a vP (as also shown by Wurmbrand 2016).[13] The interpretation of the subject in the lower position is achieved either with raising or control. In the former, there is only one subject, whereas in the latter there are two co-referential subjects, one of which is a phonologically not realized (PRO). I consider restructuring with modal verbs as a case of raising, following Cinque (2004); Wurmbrand (2003), among others. I also provide some arguments against the control analysis in section §5.8.1.

Canonically, the term *raising* refers to the DP movement from a Spec,T position to a higher Spec,T position in monoclausal configurations, driven by case-related reasons (Rosenbaum 1965; Postal 1974; Chomsky 2000, 2001; Polinsky 2013). In restructuring, I

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[13]Note that the lower position of the subject is also necessary because of Burzio's generalization (Burzio 1986), according to which an object cannot bear accusative case if the nominative argument is not introduced in the same domain. Since the lower v is a phase, accusative case cannot be assigned to the direct object by the modal verb or by the higher v. If it is the lower v that assigns accusative case, it must also introduce the external argument.

propose that the subject raises out of a TP or a vP to a higher position. Movement of the DP out of the vP is not a standard case of raising, but it is very similar to subject raising from TP to TP. Hence, I use the label 'raising' for both cases. The two possible raising structures are represented in the following trees: (36) consists of raising out of a TP, whereas (37) is an instance of raising out of a vP.
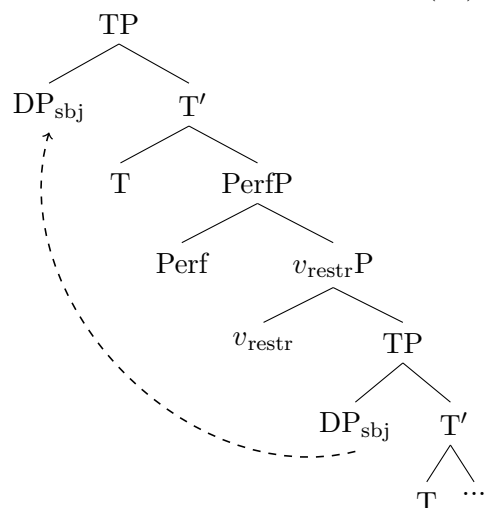
(36)   Raising out of TP   (37)   Raising out of vP
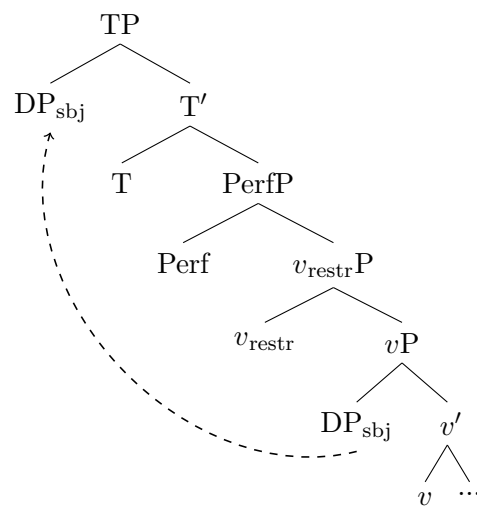
For modal verbs, I propose the structures in (36) and (37). For other restructuring verbs, the structure might be different. In fact, it has been argued that modal verbs enter in raising configurations, whereas aspectual verbs show the hallmarks of control structures instead (Wurmbrand 2004). I will discuss the case of other restructuring verbs in section §5.9. However, since in this dissertation I am concerned with the problem of the realization of the auxiliary and this is relevant in the case of modal verbs, but not so much in the case of aspectual and motion restructuring verbs, which (in general) are not subject to auxiliary switch, I will stick to the raising analysis for modal verbs.

The idea that modal verbs can combine with different types of complements has already been proposed by Cardinaletti and Shlonsky (2004), as I have highlighted in section §5.4. A similar approach is developed by Wurmbrand (2012), in order to explain the morphological realization of the lexical verb in some Germanic languages. In particular, if a modal verb selects a complement as small as a vP/VP, then the lexical verb appears as a past participle; if the complement contains a T projection, then the lexical verb is realized as a non-finite form (under Wurmbrand's (2012) analysis, given the presence of an interpretable T feature on the infinitival head).

Evidence for the fact that restructuring involves complements of different sizes also comes from the distribution of participle agreement. In restructuring, auxiliary selection and participle agreement pattern together, as in root clauses. This is shown by the ungrammaticality of examples (38) with respect to (10-c) and (10-d), repeated here again in (39).

(38)   a. *Teresa ha   volut-a   andar=ci.
             Teresa have.PRS.3SG want.PRTC-SG.F go.INF=there

        b. *Teresa è   voluto   andar=ci.
             Teresa be.PRS.3SG want.PRTC go.INF=there
             'Teresa wanted to go there.'

(39)   a. Teresa ha   voluto   andar=ci.
             Teresa have.PRS.3SG want.PRTC go.INF=there

        b. Teresa è   volut-a   andar=ci.
             Teresa be.PRS.3SG want.PRTC-SG.F go.INF=there
             'Teresa wanted to go there.'

The co-occurrence of BE with participle agreement and HAVE without it suggests that there is one difference in syntactic structure that accounts for both phenomena simultaneously. If auxiliary switch was unrelated to the size of the clause or to the type of projection, one could not explain why participle agreement also changes according to the auxiliary. In this dissertation, I have argued that auxiliary selection and participle agreement are independent phenomena that pattern together just because of the featural inventory of the functional heads (in Standard Italian). The natural conclusion is that the functional heads involved in the two grammatical examples (39-a,b) are different. The sentences must differ either with respect to the set of heads, or with respect to the set of features on those heads.

Recall that participle agreement arises when there is some defectiveness in the structure, such as an unchecked feature on a DP due to a defective v (cf. chapter 4). Hence, when we find BE and participle agreement the structure must be more reduced (in terms of features) as compared to the one that causes HAVE and lack of participle agreement. The lack or presence of auxiliary switch must be related to the projections or the features of the heads, in order to give rise to participle agreement (via edge feature insertion) in the one case (39-b) but not in the other one (39-a). Thus, the distribution of the auxiliaries and of participle agreement shows that restructuring must involve different structures.

A possible objection to this proposal is the following. The clause without auxiliary switch, without clitic climbing and without participle agreement (39-a) could be a non-restructured sentence, in contrast to the restructured clause (39-b). In syntax, this would correspond to control into CP and raising out of vP, respectively. In section §5.8.1 I argue that the difference for the clauses in (39) is due to a vP or a TP complement, since there is no evidence for a PRO and a CP layer and all facts can be easily explained by assuming a TP instead of resorting to a CP. In particular, both sentences in (39) behave in the same way as far as the diagnostics for raising or control are concerned: the difference in the auxiliary does not correspond to a difference of control versus raising.

Finally, let me clarify a terminological issue. I sometimes use the term *embedded* and *matrix* to refer, respectively, to the lower and to the higher portion of the clause. Obviously, these terms are not correct, since I said that restructuring configurations are monoclausal.

However, in order to distinguish the lower and the higher instances of v, T and so on, I use the label 'matrix' and 'embedded' as the equivalent of 'higher' and 'lower', without assuming a biclausal representation, but only as a purely descriptive label (cf. Wurmbrand 2003 for the same terminological discussion).

To sum up, I argue that restructuring always involves a monoclausal configuration where the syntactic structure selected by the restructuring verb can be of different sizes. The presence of overt transparency effects, such as clitic climbing and auxiliary switch, is due to the size of the complement selected by the restructuring verb.

5.6 Auxiliary switch: proposal

The central claim of this dissertation is that auxiliary selection is π-Agree. This must be valid, of course, also in restructuring configurations. Consequently, when the matrix auxiliary is realized as HAVE, this means that Agree on Perf has succeeded in copying a valued person feature. In contrast, the unmarked allomorph BE corresponds to the lack of a valued person feature on Perf. Under this analysis, so-called auxiliary switch must be interpreted as the result either of failed Agree or of Agree with ϕ-defective items, as we saw for root clauses in the previous chapter 3.

I argue that auxiliary selection in restructuring is due to the presence of a special v (v_{restr}) that selects either a TP or a vP complement and bears a double [Infl] feature. The possibility of auxiliary switch depends on the joint effect of a small complement and of the probes on v_{restr} (subject to Nested Agree, cf. chapter 2). This head characterizes modal verbs, the prototypical restructuring verbs, but does not combine with peripheral restructuring verbs, such as aspectual and motion verbs.

We saw that, in root clauses, v agrees with the internal argument, and Perf agrees with v due to Nested Agree (cf. chapters 2, 3). In restructuring, there is a further intermediate head, v_{restr}. The function of this head is represented in trees (40) and (41).

(40) / (41)
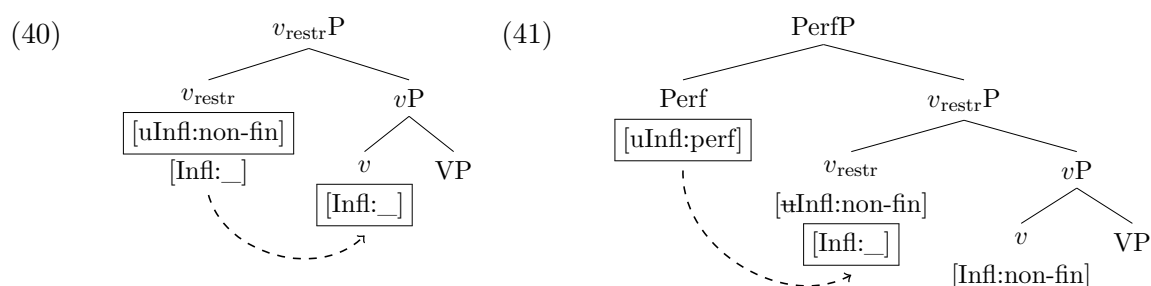
The head v_{restr} bears two instances of the [Infl] feature, one valued, one unvalued. Thanks to its double [Infl], this head enables agreement between the embedded v and the matrix Perf, acting as intermediate agreeing head that creates a "chain of information". The Agree-relations are between the internal argument and the lower v, the lower v and v_{restr}, v_{restr} and Perf. We have already seen an example of such a head in the case of Voice$_{pass}$,

which values the [Infl] feature on v as passive and is valued in its unvalued [Infl] feature by Perf (cf. section §3.3.6 in chapter 3).

The features on the lower v, which result both from the argument structure itself (transitive vs. defective v) and from the features of the arguments (reflexive/impersonal vs. non-reflexive/non-impersonal), can be accessed by Perf because they have been copied by the intermediate head v_{restr}. This results in a cyclic Agree configuration (Legate 2005). Auxiliary selection in restructuring is the result of long distance agreement between the lower lexical v and Perf thanks to the higher restructuring v.

If the features of the lower v are accessible to Perf, then the question is why the modal auxiliary is not always the "faithful" one, i.e. the one that the lower lexical verb would be combined with. In fact, the syntactic structure should be transparent for auxiliary selection, meaning that an embedded BE-verb should invariably determine the presence of BE on the matrix modal, whereas an embedded HAVE-verb should give rise to HAVE as the perfect auxiliary in the matrix. Instead, we saw that auxiliary switch is optional, as shown again in (42).

(42)   a.   Teresa ha   voluto   andar=ci.
              Teresa have.PRS.3SG want.PRTC go.INF=there

         b.   Teresa è   volut-a   andar=ci.
              Teresa be.PRS.3SG want.PRTC-SG.F go.INF=there
              'Teresa wanted to go there.'

I argue that the difference in auxiliary selection is a reflex of the difference in size of the complements. If the complement of the modal verb is a vP, then the modal auxiliary is the same as the one that the embedded verb would select. This results in auxiliary switch if the embedded verb is a BE-verb. In case of a vP complement, the structure is "transparent": the information about the person feature of the object of the lexical verb reaches the head Perf in the higher portion of the clause, as in root clauses. Consequently, the matrix auxiliary is HAVE with transitive verbs, BE with transitive verbs with a reflexive (in-)direct object, BE with impersonal clauses and BE with unaccusative verbs, as in root clauses. Moreover, clitic climbing is obligatory.[14] In fact, under the assumption that the clitic must move to T, given the absence of an embedded T head, the clitic must reach the matrix T head in order to find a host.

In contrast, if the complement is a TP, no transparency effect arises.[15] The reason

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[14]The sentence with auxiliary switch and without clitic climbing is also possible: *Teresa è volut-a andar=ci*. I discuss this issue (and the similar case with clitic climbing and without auxiliary switch, *Teresa ci=ha voluto andare*) in section §5.7.9. For the purpose of the present discussion we can ignore this case, which is marked with respect to the standard alternatives in (42).

[15]Differently from Cardinaletti and Shlonsky (2004) and similarly to Cinque (2004), I argue that sentences without overt transparency effects are, nonetheless, restructured. The reader may wonder what restructuring then means. I think that characteristics such as raising (cf. the tests for raising for modal verbs with and without auxiliary switch in section §5.8.1) and the lack of an independent embedded tense interpretation (meaning that the event referred by the lexical predicate must be located at the same time as the matrix event) are present also when there are no overt transparency effects. In other words, next to

for the lack of transparency effects is not the presence of a barrier in the sense of a CP in a biclausal structure. Instead, more structure means more possibilities for Agree and for clitic placement. For instance, in those cases where Agree on Perf would fail because the lower v is unaccusative, the presence of a T head constitutes a further target for Agree: v_{restr}, and consequently Perf, can successfully agree with the lower T, when Agree with the lower v fails (cf. section §5.7.4). Consequently, HAVE arises even when the embedded structure contains a BE-verb. Agree always succeeds when the complement of the restructuring verb is a TP, leading to the insertion of the more specific allomorph HAVE. In addition, clitics incorporate into the lower T, without reaching the matrix T.

To sum up, if the complement is a vP, auxiliary switch and clitic climbing must take place, if applicable (i.e., if the structure contains a BE-verb and a clitic, respectively). If the complement is a TP, then the result is lack of auxiliary switch and of clitic climbing. Note, however, that there are other more complicated cases that I will address in section §5.7.9.

5.6.1 The restructuring head

The functional head that is involved in restructuring configurations is v_{restr}. The features on the head are extrinsically ordered (Koizumi 1994; Sabel 1998; Müller 2009; Georgi 2014). First of all, this head bears a selectional feature, which determines the category that can be merged with v_{restr}. It selects a modal verb, which itself selects a reduced complement. I will discuss in more details the selectional requirement in sections §5.6.2 and §5.6.4. Secondly, the head is marked with two Infl-features. The function of this double [Infl] feature is to create the restructuring configuration, which is characterized by various requirements. For instance, the TP/vP complement must be non-finite in order to exclude an independent embedded tense interpretation (Wurmbrand 2003; Grano 2015). This is due to the valued Infl-feature [Infl:non-finite]. Thirdly, the head bears a person probe that can access the lower v and can be accessed by Perf, by means of Nested Agree. Finally, in its non-defective version, it contains an EPP-feature that raises a DP with unchecked case feature to its specifier, leading to subject raising (cf. section §5.6.2 for the particular featural make-up of the head).

In general, the main function of v_{restr} is to provide a connection between the lower portion of the syntactic tree and the higher tense extended projection via the double [Infl] feature. Auxiliary selection depends on the order between the two [Infl] features and the person probe, as (43) shows (to be revised up to the final featural specification in (56)).

(43) v_{restr}: [Infl:__] ≻ [uInfl:non-fin] ≻ [uπ:__]

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transparency effects in the narrow sense (i.e., clitic climbing and auxiliary switch, indicating the absence of TP), there are other restructuring hallmarks (i.e., simultaneous interpretation of tense, identity of subject, indicating the absence of CP) that are always present. Cf. Wurmbrand (2003); Grano (2015) for the discussion of such properties.

The first Infl-feature is an unvalued one, which can remain either unvalued or can be valued by a higher inflectional head, as is the case for Perf. This type of feature is located on every type of v. The second Infl-feature is a valued one and determines the shape of the lower v: this should be realized as a non-finite verbal form. Next, the head contains a probe for person, which copies the features of the embedded v or of something else, in accordance with the principle of Nested Agree. The Infl-feature creates a chain of information between the functional heads v - v_{restr} - Perf. By exploiting this relation, the ϕ-features of the DP$_{\text{obj}}$ are copied by Perf via the lower v and v_{restr}. This is represented in trees (44) to (47).

(44) 1: v_{restr} agrees for [Infl]   (45) 2: v_{restr} agrees for [π]
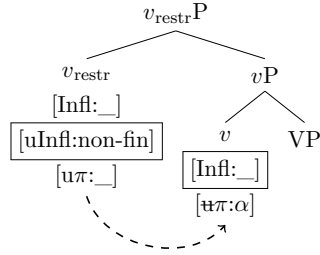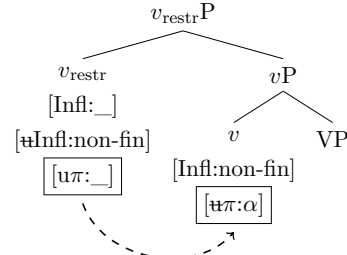
(46) 3: Perf agrees for [Infl]   (47) 4: Perf agrees for [π]
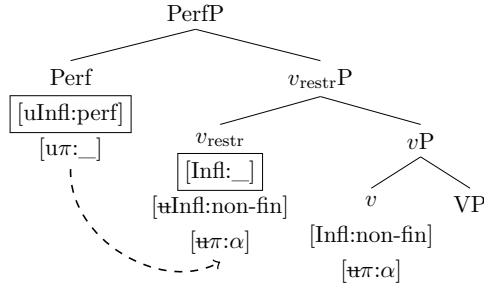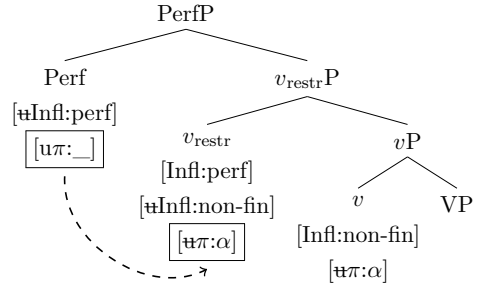
Restructuring configurations require the presence of this special v_{restr}. Since these clauses are raising structures, the reader may wonder whether the raising v could give rise to restructuring, without resorting to an extra v. If we look at raising predicates, such as the verb *sembrare* 'seem', auxiliary switch is impossible.

(48) a. Teresa è   sembrat-a   mangiare la torta.
          Teresa be.PRS.3SG seem.PRTC-SG.F eat   the cake

      b. *Teresa ha   sembrato mangiare la torta.
          Teresa have.PRS.3SG seem.PRTC eat   the cake
          'Teresa seemed to eat the cake.'

      c. Teresa è   sembrat-a   mangiar=la   tutta.
          Teresa be.PRS.3SG seem.PRTC-SG.F eat=ACC.3SG.F all

      d. *Teresa ha   sembrato mangiar=la   tutta.
          Teresa have.PRS.3SG seem.PRTC eat=ACC.3SG.F all
          'Teresa seemed to eat it all.'

As (48) show, the perfect auxiliary of raising verbs is always BE, independently of the

size of the complement (identified by the position of the clitic). The data in (48) can be derived if the matrix v is a defective one, such as unaccusative v.[16]

(49) v_{raising}: [Infl:__]

The derivation for raising verbs is represented in (50) and (51).

(50)

PerfP
├─ Perf
│   [[uInfl:perf]]
│   [uπ:__]
└─ v_{raising}P
    ├─ v_{raising}
    │   [Infl:__]
    └─ TP

(51)

PerfP
├─ Perf
│   [u̶Infl:perf]
│   [uπ:__]
└─ v_{raising}P
    ├─ v_{raising}
    │   [u̶Infl:perf]
    └─ TP
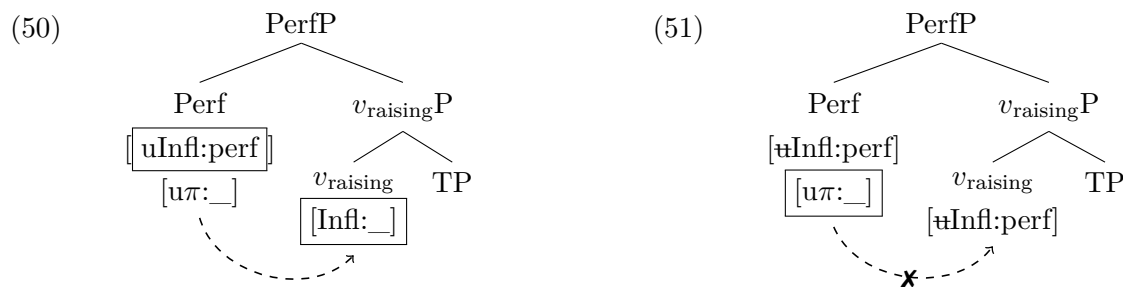
Raising v only contains an unvalued [Infl:__]. When Perf enters the derivation, it probes v_{raising} for [Infl]. Then, given Nested Agree, it probes v_{raising} also for the π-feature, skipping the raised argument in Spec,v_{raising}. However, it does not find any value on v, since it is defective (i.e., it does not bear a person probe). Given the *Phase Impenetrability Condition* (Chomsky 2000, 2001), since v is phase, the probe cannot search into the TP complement of the raising v. Given Nested Agree, the probe cannot backtrack to any position above v_{raising}. Hence, Agree on Perf fails. Raising v leads to BE insertion independently of the embedded syntactic structure, as example (48) shows.

Differently from raising verbs, modal verbs can exhibit HAVE as the perfect auxiliary and allow for clitic climbing. Thus, the type of v involved in restructuring cannot be the same used in raising configurations. Restructuring clauses cannot be created by a defective, raising v.

5.6.2 The EPP-feature

I said that v_{restr} can select two types of complements, TP and vP. This selectional requirement must be encoded by a c-selectional Merge feature, as shown in (52) (to be

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[16]The complement must be a TP, as confirmed by the impossibility of clitic climbing.

(i) a. *Teresa l=è   sembrat-a   mangiare tutta.
         Teresa ACC.3SG.F=be.PRS.3SG seem.PRTC-SG.F eat   all
     b. *Teresa l=ha   sembrato   mangiare tutta.
         Teresa ACC.3SG.F=have.PRS.3SG seem.PRTC eat   all
         'Teresa seemed to eat it all.'

It is of course possible to find a clitic incorporated into the tensed verb, but only if it is an argument of the matrix clause, such an experiencer, and not an argument of the lexical verb.

(ii) a. Teresa gli=è   sembrat-a   mangiar=la   tutta.
          Teresa DAT.3SG.M=be.PRS.3SG seem.PRTC-SG.F eat=ACC.3SG.F all
      b. *Teresa gli=ha   sembrato   mangiar=la   tutta.
          Teresa DAT.3SG.M=have.PRS.3SG seem.PRTC eat=ACC.3SG.F all
          'Teresa seemed to him to eat it all.'

revised as in (56)).

(52)   a. v_{restr}: [•v•] ≻ [**Infl**:__] ≻ [u**Infl**:non-fin] ≻ [uπ:__]
        b. v_{restr}: [•T•] ≻ [**Infl**:__] ≻ [u**Infl**:non-fin] ≻ [uπ:__]

The former head takes as its complement a vP, the latter selects a TP. This is the point where optionality arises. The optionality with respect to auxiliary switch and clitic climbing is a mere consequence of the size of the selected complement.

However, the featural array on the head is indeed more complex. To illustrate this point, let us look at participle agreement in restructuring. As already pointed out in the discussion around examples (38) and (39), we observe the regular co-occurrence of BE with participle agreement. With HAVE, it is possible to have participle agreement, but only in the case of (in-)direct object clitics (53-a), and never with the subject (53-b,c,d).

(53)   a.   La torta, le   ragazze l=hanno   volut-a   mangiare.
              the cake   the girls   ACC.3SG.F=have.PRS.3PL want.PRTC-SG.F eat.INF

        b. *La torta, le   ragazze l=hanno   voluto/-e   mangiare.
              the cake   the girls   ACC.3SG.F=have.PRS.3PL want.PRTC-PL.F eat.INF
              'The cake, the girls wanted to eat it.'

        c.   Le ragazze hanno   voluto   mangiare la   torta.
              the girls   have.PRS.3PL want.PRTC eat.INF   the cake

        d. *Le ragazze hanno   volut-e/-a   mangiare la   torta.
              the girls   have.PRS.3PL want.PRTC-PL.F/-SG.F eat.INF   the cake
              'The girls wanted to eat the cake.'

The impossibility for the transitive subject to control participle agreement needs an explanation. In fact, given the proposed raising analysis of restructuring (evidence for raising is given in section §5.8.1), the subject is introduced in the specifier of the lower v, which is c-commanded by the position where participle agreement shows up, namely v_{restr}. When the DP$_{\text{sbj}}$ raises, it should trigger participle agreement by means of edge feature insertion on v_{restr} (cf. analysis of participle agreement in chapter 4). Hence, the absence of participle agreement controlled by the transitive subject in (53) suggests that v_{restr} bears an EPP-feature, which raises the DP without resorting to edge feature insertion.[17]

I will now discuss this point in further details. When v_{restr} enters the derivation, the case feature of the external argument of the lexical verb in the specifier of the lower v

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[17]The EPP-feature triggers internal Merge, rather than external Merge. The reason why the EPP causes raising of an already present argument (which could be anyway raised by an edge feature), instead of introducing a new one, could be that this EPP-feature is a Merge feature that inherently needs to be satisfied by Move. This means that there are two types of [•D•] features: EPP$_{\text{ext}}$, which triggers external Merge and is associated with a Theta-role (for instance, the one on full argument structure v), and EPP$_{\text{int}}$, which probes downward and triggers internal Merge, without assigning a Theta-role (for instance, the one on restructuring v or on T).

In general, the discussion on the nature and on the functions of the EPP-feature is still open. Originally, it was thought as a nominal feature D on ArgSP (Chomsky 1995: 232). It is also considered a selectional feature that can be satisfied by an XP merged with the category it heads (Chomsky 2000).

is still unchecked. Consequently, this DP must escape the phase v_{restr} in order to be accessible for the higher case assigner T (recall that all v heads are phase heads). This can be done either via an EPP-feature or via an edge feature (EF). The former is a type of Merge feature that triggers internal Merge of the relevant category. In particular, it moves an item of the [D] category that bears the feature [case:__] to the specifier of the head on which it is located (here, v_{restr}). The latter is a feature that is inserted when the complement of the phase contains an item with unchecked features, and moves it to the specifier of the head on which it is inserted (here, v_{restr}). This operation results in overt participle agreement in the morpho-phonology (cf. chapter 4). Hence, when in a restructuring clause the subject controls participle agreement on the modal verb, as in (54-a), it means that the subject has moved via EF-insertion, and that the head v_{restr} did not contain an EPP-feature. In contrast, when the subject does not control participle agreement, as in (53) and in (54-b), it has moved due to the EPP-feature on v_{restr}.

(54)   a.   Teresa è   volut-a   andare al   mare.
               Teresa be.PRS.3SG want.PRTC-SG.F go.INF to.the beach
               'Teresa wanted to go to the beach.'   (vP complement)
                                                  (DP$_{\text{sbj}}$ raised via EF)

        b.   Teresa ha   voluto   andare al   mare.
               Teresa have.PRS.3SG want.PRTC go.INF to.the beach
               'Teresa wanted to go to the beach.'   (TP complement)
                                             (DP$_{\text{sbj}}$ raised via EPP)

Note that the EPP-feature is not necessary for raising, since this would happen anyway by means of an edge feature under the assumption of the phasal status of v_{restr}. The reason why there should be an EPP-feature on v_{restr} in (53) is the lack of participle agreement with the subject of a transitive embedded verb. In contrast, if the subject was raised by means of an edge feature, overt participle agreement would be present in (53) and in every single instance of restructuring. Since this is not the case, we must conclude that raising happens not always via EF-insertion, but also via an EPP-feature on the restructuring head.

    It follows that the sentences in (54-a,b) must be due to slightly different types of vs. For the latter, I propose that v_{restr} contains an EPP-feature [•D$_{[\text{case:\_}]}$•]. For the former, the EPP-feature is instead not present on the head v_{restr}. The EPP is a type of Merge feature that creates the raising configuration by moving a DP with unchecked case feature to Spec,v_{restr}. I argue that this EPP-feature [•D$_{[\text{case:\_}]}$•] correlates with the c-selectional feature on v_{restr}, which is also a Merge feature. It is crucial that the EPP-feature is tied to the type of selected complement. In particular, if v_{restr} takes as a complement a defective vP, it does not bear the EPP-feature; instead, it is subject to edge feature insertion. Evidence for this claim is the presence of participle agreement on v_{restr} when the embedded verb is unaccusative, as shown in (54-a).

    The type of complement correlates with the EPP-feature [•D$_{[\text{case:\_}]}$•] in the following

way. The c-selectional properties of the embedded head must be "inherited" by v_{restr}. When v_{restr} selects a v head that, as a lexical property, contains a Merge feature [•D•], v_{restr} must bear the same feature as well. In contrast, when it selects a defective head, it is defective as well. In its implementation, this can be seen as a feature co-occurrence restriction between the EPP-feature and the selectional feature, stated in (55).[18]

(55) $v_{restr}[•D_{[case:\_]}•] \leftrightarrow v_{restr}[•T•] \lor v_{restr}[•v^*•]$

The matching condition in (55) is a constraint on the numeration that correlates the presence of the EPP-feature with the type of selected head. It results in a sort of "matching defectiveness" in relation to the [•D•] feature: v_{restr} contains it when the embedded head also bears it, otherwise it does not.[19] The idea is that the head v_{restr} has the function of relating the higher T domain to the lower argument structure in the complement. The matching defectiveness is a device to keep track of the defectiveness of the lower part of the structure. This condition is the reason why in restructuring we find the identical pattern of root clauses as far as participle agreement is concerned.

I said in (52) that the restructuring head bears a c-selectional feature, a π-probe, and two instances (one valued, one unvalued) of the Infl-feature. The first Merge feature can be [•v•], [•v^*•], or [•T•]. It is a c-selectional feature satisfied by external Merge and determines the type of complement. In addition to this Merge feature, there can be another one, as I have just proposed. This EPP Merge feature is satisfied by internal Merge causing raising of the DP_{sbj}. This is present on the head only when the first feature is either [•v^*•], or [•T•], but not [•v•]. In fact, both v^* and T contains a [•D•] feature, whereas v does not. The final, updated version of the head(s) is stated in (56).

(56)   a. v_{restr}: [•v•] $\succ$ [uInfl:non-fin] $\succ$ [uπ:_] $\succ$ [Infl:_]
         b. v_{restr}: [•v^*•] $\succ$ [uInfl:non-fin] $\succ$ [uπ:_] $\succ$ [**Infl**:_] $\succ$ [•D_{[case:_]}•]

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[18]Note that selection between the head v_{restr} and the TP/vP complement is not local in the strict sense: the TP/vP is selected by the modal V, which is selected by v_{restr}. Hence, the feature co-occurrence restriction in (55) is a simplification, since the c-selectional feature on v_{restr} is actually [•V•], rather than [•v(*)•] or [•T•]. This issue can be solved in two ways. If external Merge involves checking of selectional features, and if the modal verb is indeed the realization of the head v_{restr} (as discussed in section §5.6.4), the requirement in (55) holds. Alternatively, if Merge as such can apply freely but its output is subject to some selectional filter at some later point of the derivation (e.g. LF), then selection can be procrastinated (F. Heck, p.c.). This means that the modal V head combines freely with the TP/vP; then, v_{restr} selects the modal V (without checking its selectional requirement locally). When V moves to v, the two heads collapse and now the local configuration for feature checking is created.

[19]The matching condition among vs is quite intuitive. In contrast, the relation between v_{restr} and T is not as such. In fact, if the numeration contains just a single T, v_{restr} does not have to contain an EPP-feature. However, if there are two Ts, then v_{restr} acquires [•D•] by means of the matching condition (55), in relation with this second instance of T. I see two consequences here. Firstly, the numeration should be, at least partially, organized in subarrays that "anticipate" the syntactic structure: a single subset contains only a V, a v, a T and so on (cf. Chomsky 2000 for the notion of phases as lexical subarrays, or chunks of numeration). This allows v_{restr} to be compared with the whole other subarray. Secondly, it exists only a type of v_{restr} in the lexicon, which is then adjusted in its featural specification by some pre-syntactic operations that act in the numeration. Alternatively, there could be a filter on the numeration that rejects ill-formed sets of lexical items.

c. v_{restr}: $[\bullet\text{T}\bullet] \succ [\text{uInfl:non-fin}] \succ [\text{u}\pi:\_] \succ [\textbf{Infl}:\_] \succ [\bullet\text{D}_{[\text{case}:\_]}\bullet]$

As (56) shows, the restructuring v comes in three flavors, which are set along a cline of defectiveness, defectiveness meaning the lack of a $[\bullet\text{D}\bullet]$ feature on the heads. This defectiveness could be extended to other features of v_{restr}, such as the probe for person. In fact, the presence or absence of a person probe on defective v_{restr} does not change the analysis.[20] The featural relations between the heads are represented in Table 5.3.

type of selected head	features on the selected head	features on restructuring v
$\boxed{\text{T}}$	$\boxed{\bullet\text{D}\bullet}$, T, u$\pi$:_, case:? , $\bullet v\bullet$	$\boxed{[\bullet\text{T}\bullet]} \succ [\text{uInfl:non-fin}] \succ [\text{u}\pi:\_] \succ [\text{Infl}:\_] \succ \boxed{[\bullet\text{D}\bullet]}$
non-defective $\boxed{v^*}$	$\boxed{\bullet\text{D}\bullet}$, Infl, u$\pi$:_, case:acc , $\bullet\text{V}\bullet$	$\boxed{[\bullet v^*\bullet]} \succ [\text{uInfl:non-fin}] \succ [\text{u}\pi:\_] \succ [\text{Infl}:\_] \succ \boxed{[\bullet\text{D}\bullet]}$
defective $\boxed{v}$	Infl, $\bullet\text{V}\bullet$	$\boxed{[\bullet v\bullet]} \succ [\text{uInfl:non-fin}] \succ ([\text{u}\pi:\_]) \succ [\text{Infl}:\_]$

Table 5.3: Featural array on v_{restr}.

When the head v_{restr} selects a non-defective projection, such as v^* or T, it is non-defective as well. However, when a defective v is selected, then the head must be defective as well. This means that for v_{restr} not only the category of the selected head is relevant, but also the array of features on that category, so that v_{restr} can distinguish v and v^* in the same way as Voice$_{\text{pass}}$ can distinguish them.

The EPP-feature targets not only a [D] category, but, crucially, it is relativized to a [D] category that bears an unvalued case feature: $[\bullet\text{D}_{[\text{case}:\_]}\bullet]$.[21] This ensures that the raised element is exactly the subject and not any other DP with already valued case. In this sense, it is different from the EPP-feature on T, which can be satisfied also by expletives or by prepositional phrase (cf. English *There arrived three women*). The EPP-feature on v_{restr} is a Merge feature that is responsible for subject raising. This is a case of relativized probing (Béjar 2003; Béjar and Rezac 2009): the search is relativized to a particular value of a feature. However, this operation does not result in valuation, but rather in internal Merge.

Relativized probing is necessary when the c-command domain contains more than one DP. In fact, in the presence of other DPs that have moved to the edge of the phase (for instance, a clitic), the EPP raises the right argument if it looks for a DP with unvalued case feature. Let us see in details how it works. If there is a clitic that competes for raising, it can be the transitive object clitic. Since this bears accusative case, it is ignored by $[\bullet\text{D}_{[\text{case}:\_]}\bullet]$, which instead raises the external argument. An example of a clitic with unvalued case feature could be the object of an unaccusative verb, selected by a defective

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[20]It is highly possible that defective v_{restr} lacks the person probe. This conclusion stems from the discussion of problematic cases in section §5.7.9. I refer the reader to that section for details.

[21]A relativized EPP-feature has also been proposed by Bjorkman (2018: 341). Under Bjorkman's (2018) analysis, the EPP-feature on T, which depends on a ϕ-probe, must be relativized to a [D] category, in order to skip the ϕ-feature on Asp and on v, and to target the unaccusative subject, thereby moving it to Spec,T. Not every EPP-feature must be relativized according to a [D] feature. The ϕ-probe on Asp, a head equivalent to Perf, can be satisfied by any ϕ-feature. In unaccusative clauses, the EPP-feature on Asp targets the ϕ-features on v, thereby satisfying the EPP requirement by means of head movement (Alexiadou and Anagnostopoulou 1998).

v (leaving on a side the fact that in Standard Italian subject clitic pronouns are not possible). However, if v is defective, also v_{restr} must be defective, meaning that it does not bear an EPP-feature, as stated in (55). Consequently, the clitic is raised via EF, thereby triggering participle agreement, as is expected. Moreover, in this case there is no competition between the clitic and the surface subject, since they are the same item. In all other cases, the clitic pronoun bears either accusative case (direct object of a transitive verb), dative case (indirect object of a transitive verb via applicative head or direct object of a quirky verb) or no case at all (for example, locative clitic). In all these instances, the $[\cdot D_{[case:\_]}\cdot]$ feature on v_{restr} sensitive to unvalued case can skip the clitic and raise the external argument with unvalued case feature, independently of their respective positions.

To sum up, the relativization of the EPP-feature to DPs with unchecked case translates the raising function of v_{restr} into a syntactic feature. Moreover, it provides that if there are other DPs in the structure, such as PPs or clitic pronouns, only the external argument will be raised. The case specification on the EPP-feature exactly prevents v_{restr} from raising the wrong argument.[22]

Note that the EPP-feature must not be subject to Nested Agree in order to be able to target the right argument, otherwise it could not reach anything above the lower v, after v_{restr} has agreed with v for [Infl]. However, since the EPP-feature is a kind of probe, it should be subject to Nested Agree. The solution to this puzzle lies in the way in which the EPP works (F. Heck, p.c.). The idea is that the EPP-feature is composed of an Agree part for relativized probing and a Merge component, which are ordered as all other features on the head are. The Agree component goes first and identifies the item that should be moved. This is temporarily removed from the structure and is stored in a separate workspace before being remerged in the syntactic tree by means of the Merge feature. The Merge-EPP-component is discharged when all other probing operations between the head and the complement have been performed. The order of operations on v_{restr} is as in (57).[23]

(57)   [uEPP] (target $[D_{case:\_}]$) $\succ$ uInfl $\succ$ uπ $\succ$ [·EPP·] (move $[D_{case:\_}]$)

This kind of derivation with a separate workspace has been proposed for many different phenomena by Heck and Himmelreich (2016); Heck (2016). The separate workspace is a way to deal with intervention effects, as Nested Agree is. As a side remark, note that the assumption of the separate workspace model does not weaken the proposal of Nested

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[22]Alternatively, the EPP-feature could also not be restricted to a specific case feature. However, in this case one has to assume *Tucking-in* (Richards 1997, 2001). In fact, in the presence of other DPs that have moved to the edge of the phase, the transitive external argument or the unaccusative internal argument must be the highest DP in the c-command domain of v_{restr}. For example, if the structure contains a clitic object, without Tucking-in this will land in the outer Spec,v, above the external argument. Hence, the EPP on v_{restr} would raise the clitic object rather than the subject.

Since Tucking-in is an operation that should be avoided because of the Strict Cycle Condition, I prefer to relativize the EPP to DPs with unvalued case features.

[23]Another option is to consider the EPP as a unitary feature (which does not contain an Agree component), and to assume that Merge features are actually not constrained by Nested Agree (but cf. discussion on the possible extensions of Nested Agree to Merge features in section §2.6 in chapter 2).

Agree. In fact, an intervention effect may vanish either because of a separate workspace, or by means of Nested Agree. The separate workspace can deal with those configurations where the intervener will move out of the way at a later derivational step. In addition, it allows to avoid intervention by means of procrastination of Merge of the intervener (which is possible because otherwise the *Extension Condition* (Chomsky 1995), which prescribes that Merge must extend the tree, would be violated). However, it cannot help with other structures where the intervener does not move at a relevant stage of the derivation and is already in the structure (as shown by other independent interactions). Instead, Nested Agree can solve this issue. Nested Agree is needed for those cases where a specifier or a head that would not move at all must be skipped, as for the subject in Spec,v in relation to Perf (T comes too late in order to resort to the separate workspace explanation). In addition, Merge of the external argument cannot be procrastinated, because the subject binds the reflexive object before this moves to the edge of v (cf. derivation of reflexive clauses in sections §3.3.2 and §4.4.3). Since the separate workspace approach is compatible with Nested Agree (and both of them are actually needed in different contexts), I will not discuss this approach any further.

To conclude, the head v_{restr} acts as a "hinge-head" not only in determining the inflectional form of the lower verb and in copying the person feature for the purpose of auxiliary selection, but also by "handing over" the right argument of the lower lexical verb to the higher modal verb. The head also comes in a defective version that is used when its complement is defective (and in this case the latter function is not present).

5.6.3 More on participle agreement

In the previous section, I have given an explanation for the lack of participle agreement with the external argument of the lower predicate. I have proposed that when v_{restr} selects a transitive verbal complement, it also bears an EPP-feature that raises the subject. In contrast, if the internal argument of the embedded predicate raises (i.e. in the case of unaccusatives), then v_{restr} does not bear the EPP-feature. Consequently, EF-insertion applies to v_{restr}, causing participle agreement.

In this discussion, I have focused on the head v_{restr}. As far as the lower v is concerned, whenever the (in-)direct object of the embedded verb has to move, an EF is inserted on the embedded v. However, this EF does not cause overt ϕ-agreement, because agreement can only be morphologically realized by Vocabulary Insertion if v also bears [Infl:perf] (hence participle agreement). In restructuring configurations, this morpho-syntactic context is only met for the higher v_{restr}. In tree (58), I represent the case of an unaccusative complement, marking EF-insertion on both vs (for the detailed derivation, cf. section §5.7.3).

(58)

$$
\begin{array}{c}
\text{PerfP} \\
\diagup \quad \diagdown \\
\text{Perf} \qquad v_{\text{restr}}\text{P} \\
[\text{\#Infl:perf}] \qquad \diagup \quad \diagdown \\
[\text{\#}\phi\text{:\_}] \quad \text{DP}_{\text{obj}} \qquad v_{\text{restr}}' \\
[\phi\text{:}\alpha] \qquad \diagup \quad \diagdown \\
[\text{case:\_}] \quad v_{\text{restr}} \qquad \text{VP} \\
[\text{Infl:perf}] \quad \diagup \quad \diagdown \\
[\text{\#Infl:non-fin}] \quad \text{V} \qquad v\text{P} \\
[\text{\#}\pi\text{:\_}] \quad \text{modal} \quad \diagup \quad \diagdown \\
\boxed{\text{EF}[\gamma\text{:}\alpha,\ \#\text{:}\alpha]} \quad <\text{DP}_{\text{obj}}> \quad v' \\
[\phi\text{:}\alpha] \qquad \diagup \quad \diagdown \\
v \qquad \text{VP} \\
[\text{Infl:non-fin}] \quad \diagup \diagdown \\
\boxed{\text{EF}[\gamma\text{:}\alpha,\ \#\text{:}\alpha]} \quad \text{V} \quad <\text{DP}_{\text{obj}}> \\
[\phi\text{:}\alpha]
\end{array}
$$
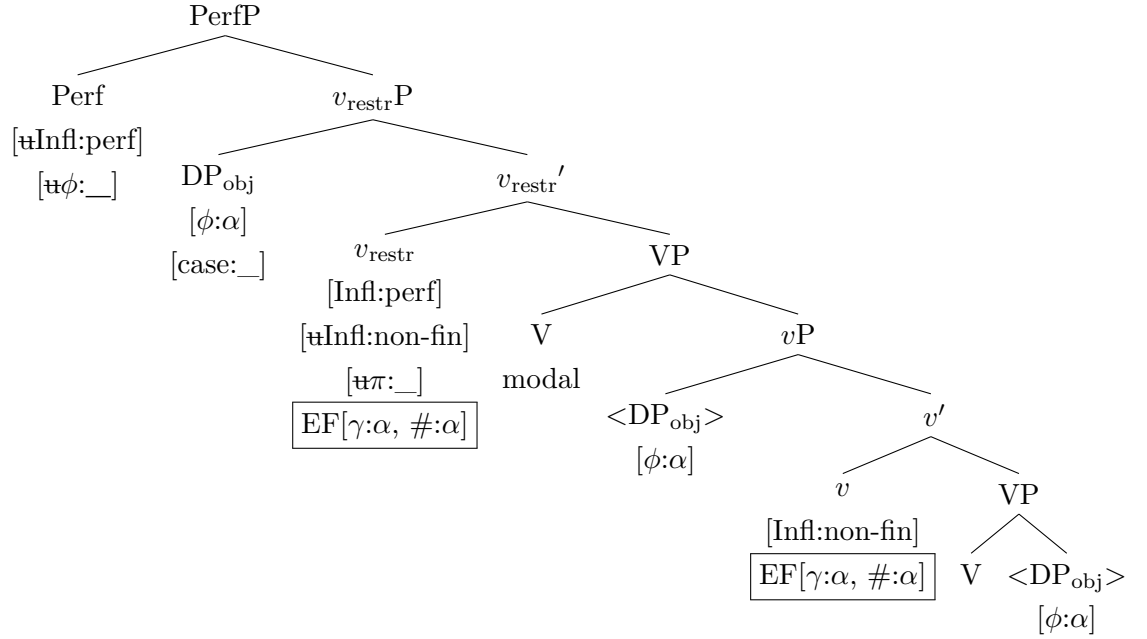
The lexical entries for participial ϕ-inflection, given in chapter 4, are repeated again here in (59).

(59) a. /ppa/ $\leftrightarrow v^0[\gamma\text{:}\alpha],[\#\text{:}\alpha]$ / [Infl:perf]
      b. /t/ $\leftrightarrow v^0$[Infl:perf]
      c. /re/ $\leftrightarrow v^0$ (elsewhere)

Given the derivation in (58), the lower v is realized by the elsewhere form (59-c), which in Italian is the non-finite verbal form. Despite the presence of gender and number features on this head, participle agreement cannot be morphologically realized because the head lacks the perfect feature [Infl:perf]. In contrast, the higher v is realized as a past participle because of the presence of [Infl:perf]. In the context of this feature, an overt exponent for gender and number must be inserted if these features are on the head, as shown by the metarule in (59-a).[24]

In this chapter, I extensively discuss the issue of participle agreement because its distribution in restructuring should be derived next to auxiliary selection. The fact that in restructuring participle agreement is excluded with transitive subjects, and it is present with unaccusative subjects but only in the context of auxiliary switch (cf. example (54), repeated here below), cannot be explained by any other theory of restructuring I am aware of.

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[24]Recall also the discussion about Vocabulary Insertion in section §4.4.1 of chapter 4. As shown in (59), the morpheme corresponding to v is spelled twice: the vocabulary entry /t/ spells out the [Infl] feature, and overt inflection spells out [γ] and [#]. This is due to a mechanism called *Fission* (Noyer 1992). When a single morpheme may correspond to more than a single Vocabulary Item (and there is no overlap), Fission creates an additional position for other exponents after one Vocabulary Item is inserted.

(60)   a.   Teresa è   volut-a   andare al   mare.
            Teresa be.PRS.3SG want.PRTC-SG.F go.INF to.the beach
            'Teresa wanted to go to the beach.'
       b.   Teresa ha   voluto   andare al   mare.
            Teresa have.PRS.3SG want.PRTC go.INF to.the beach
            'Teresa wanted to go to the beach.'

For example, under a simple raising analysis, participle agreement is expected both with transitive verbs and with unaccusative verbs, which is a wrong prediction. Similarly, under a theory where the higher v is exactly the copy of the lower v, we also get a wrong prediction for participle agreement. In the case of unaccusative verbs, if the two vs must match, a sentence without participle agreement should not be expected, contrary to the example (60-b). With unaccusative complements, the alternation between BE plus participle agreement and HAVE without participle agreement, as in (60), could eventually be explained via the optionality of the matching condition: in (60-a) v_{restr} matches the lower v (no [•D•] feature), whereas in (60-b) v_{restr} is a transitive v or a special type of v (equipped with [•D•]). Hence, examples as (60-b) suggest that if a matching condition exists, then it must be an optional rule. Moreover, the copy-approach should also be able to restrict this optionality and to relate it to other phenomena, such as clitic climbing. I do not see how this could be possible without resorting to a proposal similar to the one developed in this dissertation.

To sum up, the distribution of participle agreement seems to be a problem that requires either a new theory of participle agreement or the stipulation of a [•D•] feature tied to the type of complement, as I argue for in this chapter. I cannot be more precise in the discussion of competing analyses for participle agreement in restructuring. In fact, there has been no attempt in the literature on restructuring or in literature on participle agreement so far to explain how participle agreement in restructuring works. If possible, there is even less discussion than for auxiliary selection in restructuring. Participle agreement is taken for granted as a consequence of the theory of auxiliary selection: if BE, then participle agreement, otherwise HAVE.

Instead, my proposal for restructuring simply extends the theory of participle agreement that I have developed for root clauses also to restructuring. In particular, it makes use of the optionality with respect to the type of complement that is independently needed in order to account for the possibility of clitic climbing versus its absence, and for auxiliary switch versus its absence.

5.6.4 On the restructuring verb

Let me now add a last remark about the head that is morphologically realized by the restructuring verb. There are two different possibilities. Either the restructuring verb is itself the morphological realization of v_{restr}, specified for different modalities by a higher modal projection (to obtain the meanings 'want, can, must'), or it realizes a V head that

is selected by v_{restr}. According to the former view, the modal verb and the v_{restr} are fused in a single functional head. This is realized by a Vocabulary Item as (61). It also simplifies the locality condition for Vocabulary Insertion (cf. also footnote 18) adopting the c-selectional requirement that we just saw in (56), repeated here in (62).

(61) $/\sqrt{\mathrm{WANT}}/ \leftrightarrow \mathrm{V} + v_{\mathrm{restr}}$

(62)   a. v_{restr}: $[\bullet v\bullet] \succ [\mathrm{uInfl:non\text{-}fin}] \succ [\mathrm{u}\pi:\_] \succ [\mathrm{Infl:}\_]$
         b. v_{restr}: $[\bullet v^*\bullet] \succ [\mathrm{uInfl:non\text{-}fin}] \succ [\mathrm{u}\pi:\_] \succ [\mathrm{Infl:}\_] \succ [\bullet \mathrm{D}_{[\mathrm{case:}\_]}\bullet]$
         c. v_{restr}: $[\bullet \mathrm{T}\bullet] \succ [\mathrm{uInfl:non\text{-}fin}] \succ [\mathrm{u}\pi:\_] \succ [\mathrm{Infl:}\_] \succ [\bullet \mathrm{D}_{[\mathrm{case:}\_]}\bullet]$

Under the second hypothesis, the restructuring verb enters the derivation as a lexical verb, although special: it merges with a restructuring v, and it selects for a $[\bullet v\bullet]$ or a $[\bullet \mathrm{T}\bullet]$ category, differently from other verbs. In this case, the lexical entry for the modal verb must be as (63). The c-selectional requirement in (56) must be specified as in (64).

(63) $\sqrt{\mathrm{WANT}} \leftrightarrow \mathrm{V} \, / \, v_{\mathrm{restr}}$

(64) v_{restr}: $[\bullet\sqrt{\mathrm{WANT}}\bullet] \succ [\mathrm{uInfl:non\text{-}fin}] \succ [\mathrm{u}\phi:\_] \succ [\mathbf{Infl:}\_]$

I think that there is no compelling evidence for preferring one option over the other one. The discussion of problematic cases in section §5.7.9 and of auxiliary switch for aspectual verbs in section §5.9.3 might suggest that the latter solution in (63) and (64) is the best one. As we will see, an aspectual verb can be selected by the modal v_{restr} instead of by the aspectual v_{restr}. This fact can be easily modeled with the latter selectional frame, although it is possible to explain it even under the former possibility. Nonetheless, the former option in (61) and (62) is favored by the fact that the $[\bullet \mathrm{D}\bullet]$ feature on v_{restr} correlates with the type of embedded complement. For this purpose, it should be better to choose the former configuration: all features are kept on v_{restr} and the restructuring verb spells out v_{restr}. I leave this question open, since what is important for this dissertation is just the featural specification of v_{restr}. In the trees of this chapter, I keep v_{restr} and the modal verb separated, for the sake of simplicity.

5.7 Analysis

5.7.1 vP + transitive

I start with the analysis of transitive verbs, as in (65).

(65)   a.   Teresa ha   voluto   mangiare la   torta.
               Teresa have.PRS.3SG want.PRTC eat.INF   the cake
               'Teresa wanted to eat the cake.'
         b.   Teresa l=ha   volut-a   mangiare.
               Teresa ACC.3SG.F=have.PRS.3SG want.PRTC-SG.F eat.INF
               'Teresa wanted to eat it.'

The example with clitic climbing (65-b) shows that the embedded complement does not contain a T position. Example (65-a) is ambiguous between a TP and a vP structure, since without the clitic there is no cue for the structure of the complement in the case of transitive verb (whereas for unaccusative verbs auxiliary switch constitutes a way to disambiguate the size of the complement, cf. (54)). I consider (65) to contain a small complement (a vP), as is clear in (65-b) and possible in (65-a) (cf. section §5.7.5 for the alternative TP derivation for (65-a)).

First of all, the transitive vP is built as for root clauses (cf. section §3.3.1 in chapter 3). Transitive v agrees with the object for person. The vP contains the external argument with unchecked case feature in its specifier. If the object is a clitic, it moves to the edge of the vP, after EF-insertion on the head v. Note, however, that the result of this EF will not be spelled out, since this v will not end up bearing the feature [Infl:perf], which is responsible for the morphological realization of v as a past participle that can show overt gender and number inflection (cf. section §5.6.3).

(66)

```
                    vP
                  /    \
             DP_sbj     v'
              [φ:β]     /  \
            [case:__]  v    VP
                    [Infl:__]  / \
                    [case:acc] V  DP_obj
                     [ππ:α]        [φ:α]
                     [•D•]       [case:acc]
```
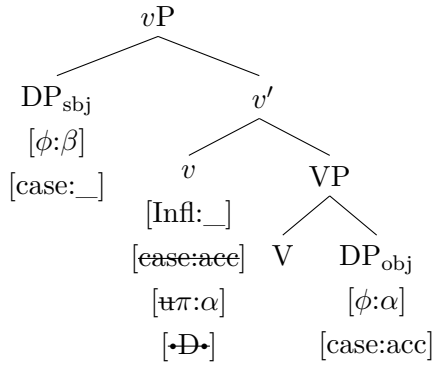
At this point, instead of merging the vP with the T head, a modal verb introduced by v_{restr} enters the derivation, as shown in (67). The type of restructuring v is a non-defective one (because the embedded v is non-defective, as established by the matching condition in (55)). Hence, it contains a $[\cdot D_{[case:\_]}\cdot]$ feature. As I have explained in section §5.6.2, this is the non-defective version of the head v_{restr}, which is able to select both a non-defective v^*, as is the case here, or a TP. For defective vs, v_{restr} must also be defective, as we will see in §5.7.3.

As I said, the modal V and v_{restr} act as a single head (cf. section §5.6.4 for discussion). When v_{restr} is merged, it agrees with the lower v for [Infl]. This creates the first Agree-Link between the two heads. Subsequently, by means of Nested Agree, v_{restr} agrees with v also for [π]. Nested Agree allows the probe on v_{restr} to skip the ϕ-features of the subject in Spec,v_{restr}, thereby avoiding a minimality violation (cf. chapter 2 for the discussion of the principle and its application to solve the minimality problem posed by auxiliary selection in Standard Italian, where the probe on Perf skips the ϕ-features of the subject in Spec,v). Instead, the π-feature of the object is copied onto v_{restr}. This is shown in tree (67).

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(67)

$v_{\text{restr}}P$

DP$_{\text{sbj}}$ $v_{\text{restr}}{}'$

$[\phi{:}\beta]$

$[\text{case:\_\_}]$

v_{restr} VP

$[\text{Infl:\_\_}]$

$[\text{uInfl:non-fin}]$

$[\text{u}\pi{:}\alpha]$

$[\bullet\text{D}_{[\text{case:\_\_}]}\bullet]$

V vP

modal

$\langle\text{DP}_{\text{sbj}}\rangle$ v'

$[\phi{:}\beta]$

$[\text{case:\_\_}]$

v VP

$[\text{Infl:non-fin}]$

$[\text{u}\pi{:}\alpha]$

V   DP$_{\text{obj}}$

$[\phi{:}\alpha]$

$[\text{case:acc}]$

(c) •D

(a) Infl, (b) π
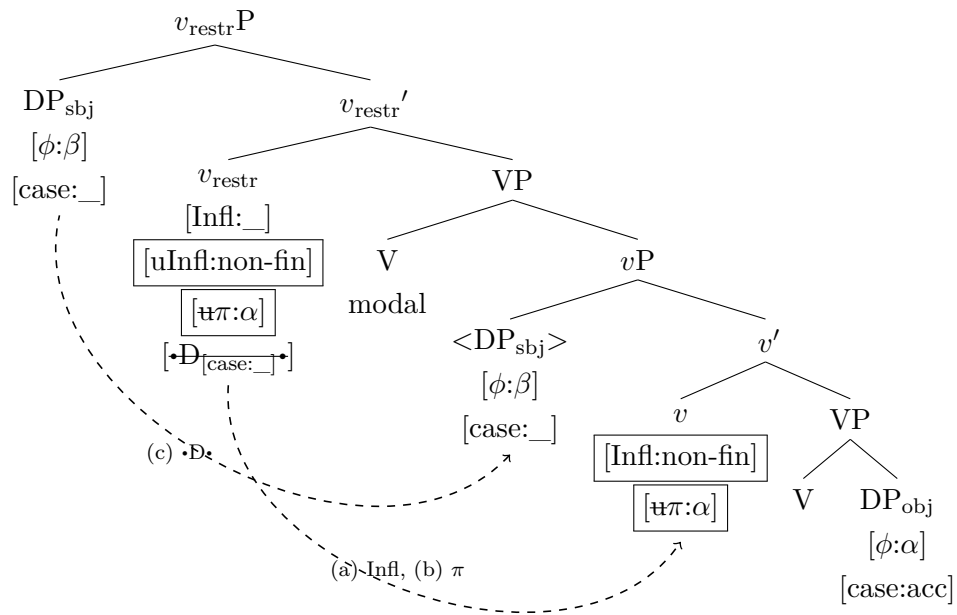
I said that the head v_{restr} contains an EPP-feature of the form $[\bullet\text{D}_{[\text{case:\_\_}]}\bullet]$, which is relativized to [D] categories with unvalued case feature. This attracts a DP with unvalued case feature to Spec,v. The EPP-feature ensures the raising behavior of restructuring modal verbs, and in particular that only the external argument will be raised. In fact, if the EPP was not relativized to look only for DPs with an unchecked case feature, it could raise instead another argument, such as an intervening clitic. If the EPP would be discharged by moving an intervening clitic, the external argument could not be raised by it. Hence, it would be moved by an edge feature (given its unchecked case feature). This would result in participle agreement controlled by the external argument, in violation of Belletti's generalization (Belletti 2005b, 2017).

Looking again at tree (67), after v_{restr} has agreed for [Infl] and [π], its $[\bullet\text{D}_{[\text{case:\_\_}]}\bullet]$ feature is discharged, meaning that the subject DP selected by the lexical verb is raised to the Spec,v_{restr} position. Note also that the EPP-feature is not subject to Nested Agree, otherwise it could not reach the DP in Spec,v, once v_{restr} has agreed with the DP in Comp,v. This is probably due either to the fact that Nested Agree does not constrain Merge operations or to the fact that the EPP contains two components, one of which is actually discharged first, before the other probes.[25]

After all operations have been carried out, any clitic (if there is one) must move to the edge of v_{restr} via edge feature insertion, since v_{restr} is a phase, as other vs are. This is why we see participle agreement in (65-b), but not in (65-a), where there is no need for

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[25]This can be obtained if the relativized probing of the EPP goes first, but then the targeted DP is placed into a separate work space before being re-merged in the structure (Heck and Himmelreich 2016; Heck 2016). I refer the reader to section §5.6.2 for discussion.

EF-insertion.

The head Perf is now merged in the structure. As v_{restr} did with the lower v, now Perf checks its Infl-feature with v_{restr}. Then, it probes it for person, because of Nested Agree. As the representation in (68) shows, this instance of v contains a person value. Therefore, Agree succeeds and Perf will be realized by the allomorph HAVE at Spell-out, given the lexical entries repeated here below in (69).

(68)
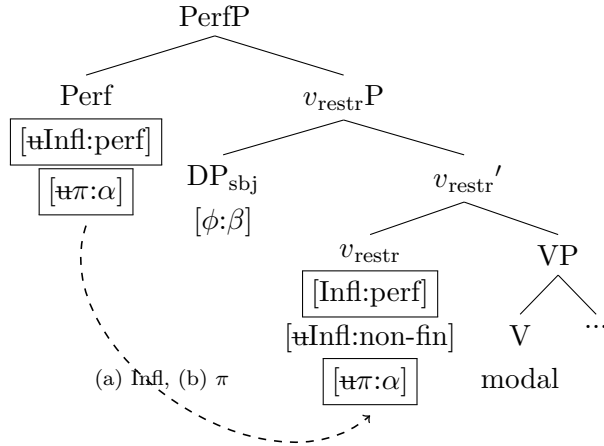
(69) a. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi{:}\alpha]$
   b. $/\sqrt{\text{BE}}/ \leftrightarrow \text{Perf elsewhere}$

When T enters the derivation, if there is a clitic in Spec,v_{restr}, it immediately incorporates into T, since the condition for discharging its feature [•T•] is met (cf. analysis in root clauses in section §3.3.2). Then, T assigns nominative case to the external argument in Spec,v_{restr}, it copies its ϕ features and it moves it to its specifier. The ϕ-probe on T can reach the ϕ-features of the subject, thereby skipping the ϕ-features on the Perf head, because of Nested Agree. This is possible if nominative assignment precedes ϕ-agreement (cf. section §3.3.2 in chapter 2 for discussion).

At Spell-out, the complex heads are v + V, v_{restr} + V(modal) and T + Perf, as represented in (70), (71) and (72).
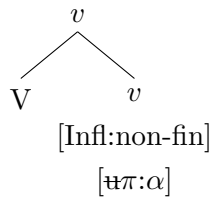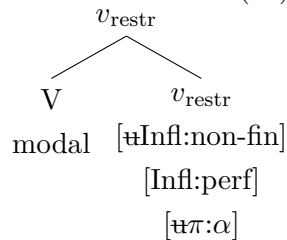
(70)   (71)   (72)
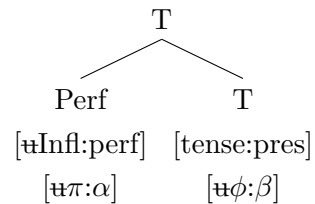
I repeat here again the Vocabulary Items presented in section §5.6.3.

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(73)   a.   /ppa/ ↔ $v[\gamma{:}\alpha],[\#{:}\alpha]$ / [Infl:perf]

        b.   /t/ ↔ v[Infl:perf]

        c.   /re/ ↔ v (elsewhere)

In the complex head V + v (70), the lexical verb substitutes the terminal node V and is spelled out as a non-finite form. This is due to the insertion of the elsewhere form for v, since the value *non-fin* for the feature [Infl] does not correspond to any vocabulary entries in the lexicon (73). The same realization would have taken place with an unvalued feature, since the non-finite form of the verb is the elsewhere form in Italian.

The tree in (71) represents the case when there is no clitic in the clause, such as in (65-a). In the complex head V(modal) + v_{restr} (71), the modal verb is realized as a past participle, since v_{restr} bears [Infl:perf]. This feature leads to the insertion of the more specific verbal form (73-b). In fact, the head v_{restr} contains two instances of the Infl-feature. The realization of [Infl:non-fin] corresponds to the insertion of the elsewhere form (73-c), whereas the feature [Infl:perf] requires the more specific form for the past participle (73-b). Given the Subset Principle, the latter form is preferred. Next to the past participle suffix, there can be morphological inflection for gender and number if the head v bears a gender and number value, expressed by the exponent in (73-a). In the complex head in (71), there are no gender and number values, but only a person value. Hence, the participle will not bear gender and number inflection, as we can see in the corresponding clause in (65-a). However, if there is a clitic in the structure as in (65-b), the features on v_{restr} are as in (74), rather than as in (71).

(74)

$$v_{\text{restr}}$$

V	v_{restr}
modal	[~~Infl:non-fin~~]
	[Infl:perf]
	[~~$\pi{:}\alpha$~~]
[#:α], [$\gamma{:}\alpha$]	
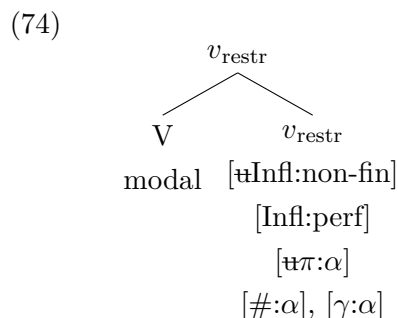
In this case, the modal verb is realized as a participle (given [Infl:perf]), with overt gender and number inflection determined by the lexical entry (73-a). The ϕ-features realized on the past participle correspond to those of the argument that bears the feature geometry called α (in the example, the clitic DP$_{\text{obj}}$).

Turning to the head Perf + T (72), the Perf head is realized by HAVE, since it bears a valued person feature. As long as Perf bears a valued person feature, it will be realized as HAVE (given the vocabulary entries repeated above in (69)). The ϕ-inflection on the auxiliary is given by the person and number values copied by T from the DP$_{\text{sbj}}$.

To sum up, if the complement of v_{restr} is a transitive vP, the auxiliary is always realized

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as HAVE, since the lower transitive v probes the object for π and it is probed by the matrix v_{restr}, which is successively probed by Perf. This chain of information allows the person feature of the object to be copied onto Perf, resulting in a cyclic Agree configuration (Legate 2005).

5.7.2 vP + reflexive

In this subsection, I show what happens when the structure contains a reflexive pronoun. For root clauses, in case of a reflexive clitic in the object or indirect object position the auxiliary is necessarily realized as BE (cf. sections §3.3.2, §3.3.7 in chapter 3). In the case of reflexive pronouns the switch to BE is obligatory also in restructuring. Examples (75-a,b) show the case of a reflexive direct object, examples (75-c,d) of a reflexive benefactive dative.

(75) a. Teresa si=è   volut-a   lavare.
          Teresa REFL.ACC.3SG.F=be.PRS.3SG want.PRTC-SG.F wash.INF

      b. *Teresa si=ha   voluto/-a   lavare.
          Teresa REFL.ACC.3SG.F=have.PRS.3SG want.PRTC/-SG.F wash.INF
          'Teresa wanted to wash herself.'

      c. Teresa si=è   volut-a   mangiare un
          Teresa REFL.DAT.3SG.F=be.PRS.3SG want.PRTC-SG.F eat.INF   a
          panino.
          sandwich

      d. *Teresa si=ha   voluto/-a   mangiare un
          Teresa REFL.DAT.3SG.F=have.PRS.3SG want.PRTC/-SG.F eat.INF   a
          panino.
          sandwich
          'Teresa wanted to eat a sandwich by/for herself.'

The reason why BE shows up in the sentences in (75) is because Agree on the lower v fails (and, consequently, on the higher v_{restr} and on Perf). The derivation is as follows.

In the clauses in (75), the position of the clitic indicates that the complement is a vP. We build the vP as we did for reflexive root clauses. I went through the derivation in section §3.3.2 in chapter 3. The main idea is that the reflexive pronoun is ϕ-defective until it is bound by the external argument (Reuland 2001, 2005; Heinat 2006; Kratzer 2009; Rooryck and Vanden Wyngaerd 2011; Sundaresan 2013, 2016). Crucially, when v probes the internal argument for the π-feature, the external argument has not been introduced yet (because of the *Strict Cycle Condition*, Chomsky 1973). This means that binding has not taken place yet, and the internal argument still bears unvalued ϕ-features. Hence, person-Agree on v fails.

The structure that the modal verb takes as its complement is represented in (76). At this point, the reflexive clitic has been bound by the external argument, which has been introduced by v after this has probed for person. The π-probe on v is discharged, but it

remains unvalued. The ϕ-features of the reflexive clitic are now valued as the ϕ-features of the external argument are (and the two arguments share the same referential index).

(76)

$$
\begin{array}{c}
v\text{P} \\
\begin{array}{cc}
\text{DP}_{\text{obj-refl}i} & v' \\
[\phi{:}\beta] & \\
[\text{case:acc}] & \text{DP}_i \qquad v' \\
[{\cdot}\text{T}{\cdot}] & [\phi{:}\beta] \\
 & [\text{case:\_\_}] \quad v \qquad \text{VP} \\
 & [\text{Infl:\_\_}] \quad \text{V} \quad \langle\text{DP}_{\text{obj-refl}}\rangle \\
 & [\text{case:acc}] \qquad [\phi{:}\_\_] \\
 & [u\pi{:}\_\_] \qquad [\text{case:acc}] \\
 & [{\cdot}\text{D}{\cdot}] \qquad \boxed{[{\cdot}\text{T}{\cdot}]} \\
 & \boxed{[u\#{:}\beta],[u\gamma{:}\beta]} \\
 & \text{(b) }{\cdot}\text{T}{\cdot} \quad \text{(a) binding}
\end{array}
\end{array}
$$

When the phase is completed the clitic must escape the phase domain because its $[{\cdot}\text{T}{\cdot}]$ feature has not been checked yet. As tree (76) shows by means of the boxes around $[{\cdot}\text{T}{\cdot}]$ and the EF-ϕ-probe on v, this is achieved by the insertion of an edge feature. The EF consists of a Merge component that builds the specifier by attracting the phrase bearing the unchecked feature, and of a number/gender probe that copies the values of these features from the object onto the phase head (cf. section §4.4.3 for details). The result of this operation is movement of the clitic to an outer specifier of v, causing gender and number agreement on v. As we can see, the head v bears the number and gender values of the clitic argument, although person-Agree has failed on v.

The head v_{restr} enters the derivation in its non-defective version, since the vP complement is non-defective (as ensured by the matching condition (55)). It takes (76) as its complement, resulting in the structure in (77). The head v_{restr} checks its Infl-feature with the lower v. Then, it probes for person. Given Nested Agree, it must start its the search from v. This is a matching goal because it bears the relevant feature, although unvalued. Hence, Agree stops because the probe has found a matching goal. However, valuation is not possible because the goal is unvalued. Note that the π-probe on v_{restr} would remain unvalued even if one assumes that an unvalued feature is not able to stop Agree. In fact, there is no other possible goal in the structure: the lower v is the only possible goal for v_{restr} because of the Phase Impenetrability Condition. In addition, the DP subject and the clitic object in the higher position have been skipped because of Nested Agree.

(77)

v_{restr}
- v_{restr} [Infl:_] [ʉInfl:non-fin] [ʉπ:_] [•D_{[case:_]}•]
- VP
  - V modal
  - vP
    - DP_{obj-refl i} [ϕ:β] [case:acc] [•T•]
    - v'
      - DP_i [ϕ:β] [case:_]
      - v'
        - v [Infl:non-fin] [ʉπ:_] [ʉ#:β],[ʉγ:β]
        - VP
          - V
          - <DP_{obj-refl}> [ϕ:_] [case:acc] [•T•]

(a) Infl, (b) π
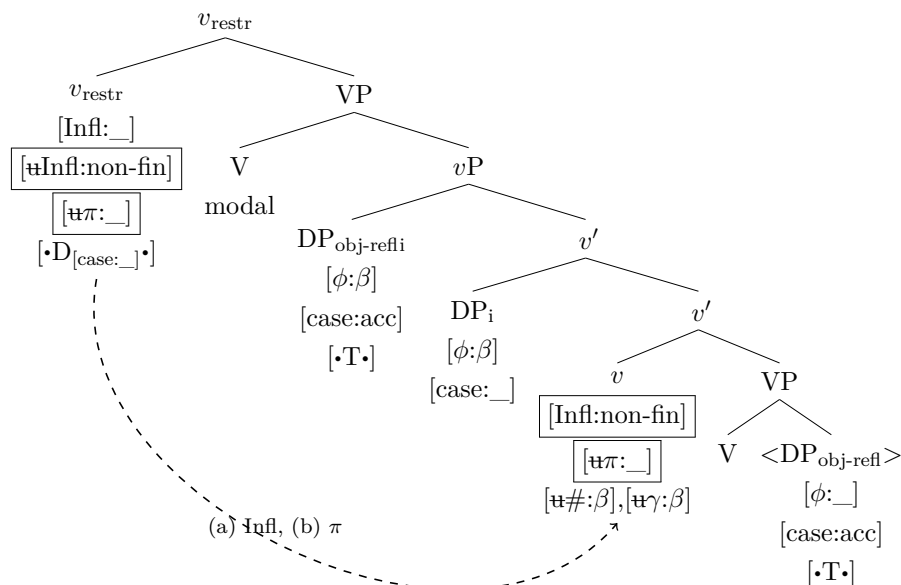
The next operations are shown in (78).

(78)

v_{restr}
- DP_{obj-refl i} [ϕ:β] [case:acc] [•T•]
- v_{restr}'
  - DP_i [ϕ:β] [case:_]
  - v_{restr}'
    - v_{restr} [Infl:_] [ʉInfl:non-fin] [ʉπ:_] [•D_{[case:_]}•] [ʉ#:β],[ʉγ:β]
    - VP
      - V modal
      - vP
        - <DP_{obj-refl i}> [ϕ:β] [case:acc] [•T•]
        - v'
          - <DP_i> [ϕ:β] [case:_]
          - v'
            - v [Infl:non-fin] [ʉπ:_] [ʉ#:β],[ʉγ:β]
            - VP
              - V
              - <DP_{obj-refl}> [ϕ:_] [case:acc] [•T•]

(a) •T•   (a) •D•
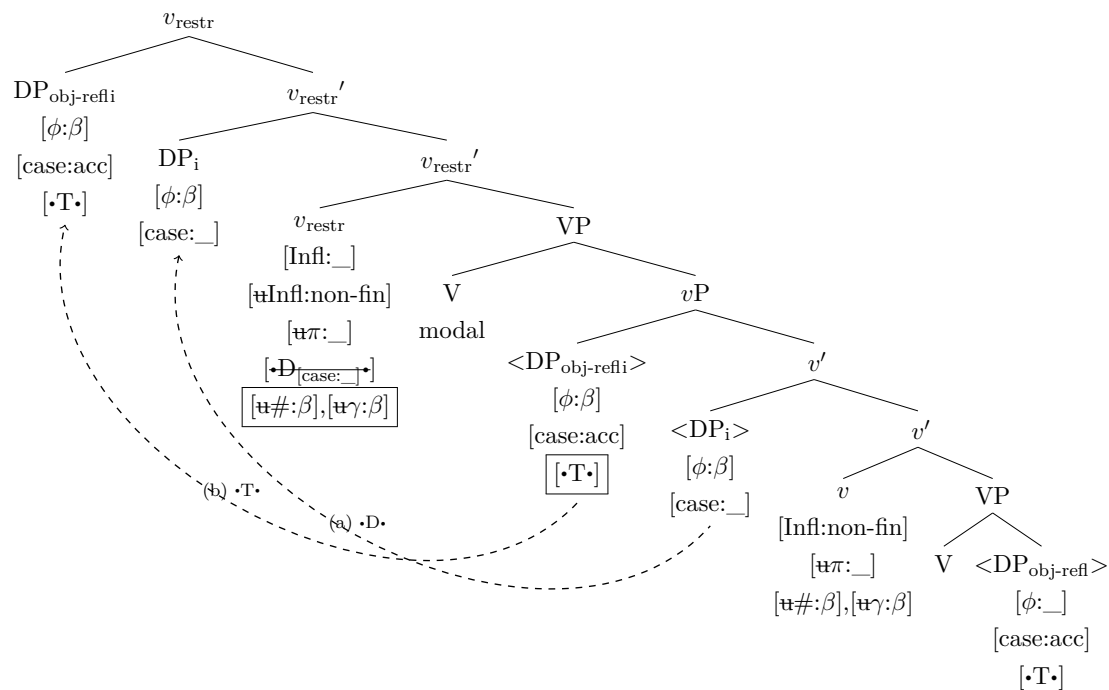
After the person probe has carried out Agree, the [•D_{[case:_]}•] feature raises the DP subject to its specifier. At this point the phase is completed. However, in the complement of v_{restr} there is still the clitic object that bears the unchecked feature [•T•]. Hence, an edge feature

is inserted on v_{restr}. This EF copies the gender and number valued of the clitic on v_{restr} and it moves it to Spec,v_{restr}, as represented with the boxes in (78).

The derivation then proceeds exactly as in the previous case. Perf enters the derivation and probes v_{restr} for Infl. By means of Nested Agree, it also probes it for person. Again, v_{restr} bears a person feature, although unvalued. Agree stops and Perf cannot copy any value. The tree in (79) is identical to the tree (68) of a transitive verb. The difference with the previous derivation in section §5.7.1 is that the unvalued person feature on v_{restr}, due to the unvalued person feature on the lower v, causes the person feature on Perf to remain unvalued as well. In addition, there is also a clitic in Spec,v_{restr}, which will cliticize to T as soon as it enters the derivation. The movement of the clitic out of the complement of v_{restr} has also caused the insertion of an edge feature, with the result that v_{restr} bears a valued number and gender feature.

(79)
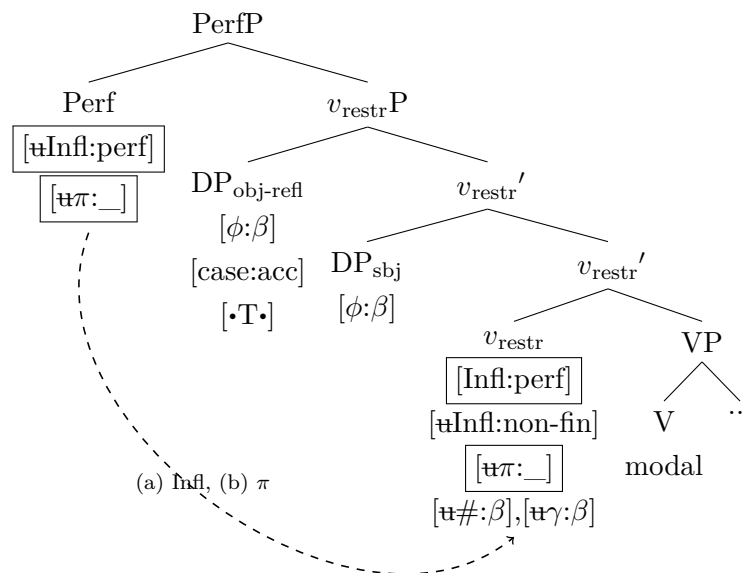
At Spell-out, Perf is substituted by the elsewhere form BE because the π-feature on Perf is unvalued. Participle agreement is overtly realized, since v_{restr} bears both [Infl:perf] and a valued number and gender feature (because of edge feature insertion). I repeat here again the metarule for the insertion of participle inflection (cf. chapter 4 for details).

(80)   /participle agreement for α/ $\leftrightarrow$ v^0[Infl:perf],[γ:α],[#:α]

5.7.3 vP + unaccusative

We have just seen what happens when the lower v is transitive. Let us now proceed with the case of unaccusative v. Again, I take clitic climbing as the hallmark for the embedded structure being smaller than a TP (since it should not contain any T position into which

the clitic can incorporate). The clitic pronouns that can depend on unaccusative verbs are the locative clitic *ci* and the partitive *ne*. In case of clitic climbing, auxiliary switch is obligatory, as shown in examples (81) (but cf. section §5.7.9 for the dubious acceptability of (81-b)). Moreover, participle agreement on the modal verb is obligatory.

(81) a. Teresa ci=è   volut-a   andare ieri.
          Teresa there=be.PRS.3SG want.PRTC-SG.F go.INF yesterday

      b. *Teresa ci=ha   voluto/-a   andare ieri.
          Teresa there=have.PRS.3SG want.PRTC/-SG.F go.INF yesterday
          'Teresa wanted to go there yesterday.'

I offer here the derivation with the locative clitic pronoun; the derivation without the clitic is the same as this one, in its core structure. First of all, we build the complement up to the *v*P. The tree is shown in (82).

(82)
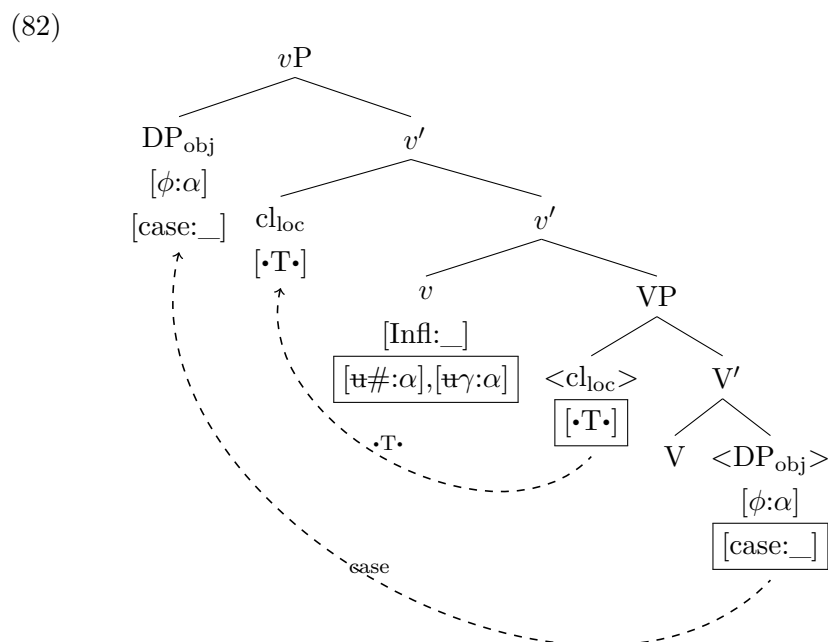
The head *v* in (82) is defective, meaning that it is neither a π-probe, nor a case assigner. Its complement contains a DP internal argument and a higher locative clitic, which I situate in Spec,V. Both the locative clitic and the DP$_{obj}$ must move to the edge of the phase, since they bear two unchecked features, respectively [·T·] and [case:__]. Therefore, an edge feature is inserted on *v*. This EF moves the two DPs to the edge of the phase, and the subset of relevant φ-features (namely, gender and number) are copied onto *v*. The head *v* ends up bearing the gender and number features of the object, with the exclusion of the person feature. The reason why the φ-features of the higher locative clitic are not

targeted is because only the features of the lastly moved element are actually copied by the head bearing the EF.[26] In this specific case, the gender and number features will not be morphologically expressed at Spell-out because this v will not end up being realized as a past participle. In fact, inflection for gender and number is only realized on a v head in the context of the feature [Infl:perf] or [Infl:pass], but not [Infl:non-fin] (cf. section §4.4.1 in chapter 4). This is due to the specific lexical inventory of Standard Italian.

The defective vP in (82) is then selected by a defective v_{restr}. The head v_{restr} is defective if it is not equipped with the EPP-feature [·D$_{[\text{case:}\_]}$·]. As I said, this is the result of a matching condition on the featural specification of the functional head v_{restr} in the numeration (cf. section §5.6.2). The derivation is represented in tree (83).

(83)

$$v_{\text{restr}}\text{P}$$

v_{restr} [Infl:_] [̶Infl:non-fin] [̶π:_]

VP

V modal

vP

DP$_{\text{obj}}$ [ϕ:α] [case:_]

cl$_{\text{loc}}$ [·T·]

v'

v'

v [Infl:non-fin] [γ:α, #:α]

VP

<cl$_{\text{loc}}$> [·T·]

V′

V <DP$_{\text{obj}}$> [ϕ:α] [case:_]

(a) Infl, (b) π
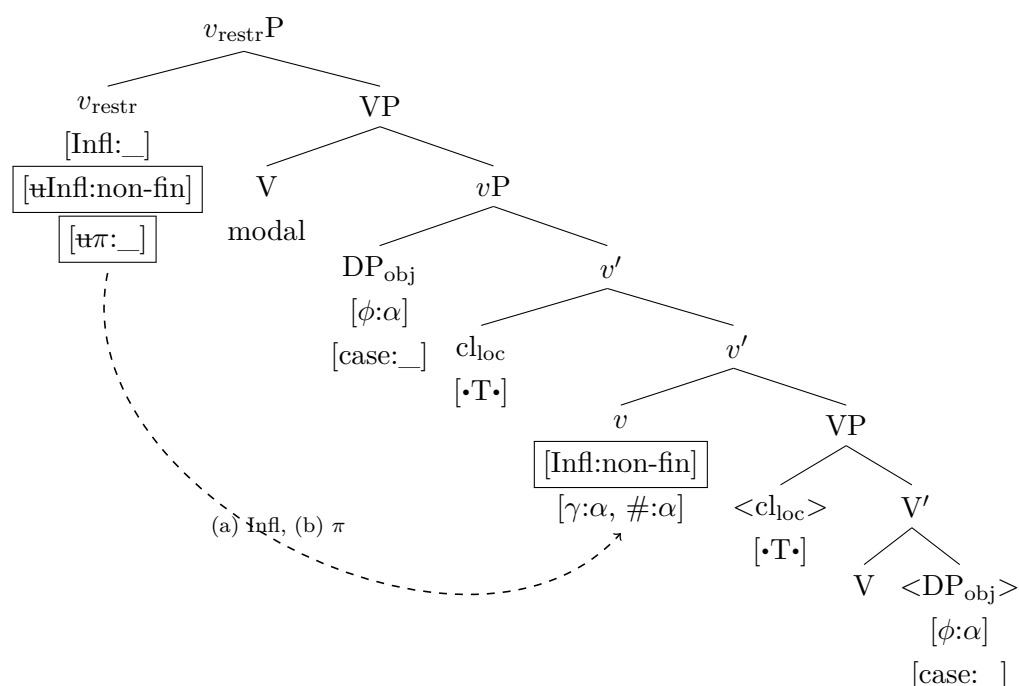
The restructuring head checks the Infl-feature on v. Then, it probes for person. Given Nested Agree, it must start from the v position, thereby skipping the material in Spec,v. The unaccusative v does not contain any π-feature (it does contain gender and number because of the EF, but not person): it is not a matching goal for the person probe on v_{restr}. Consequently, the probe on v_{restr} searches down the structure starting from this more embedded position. However, given the PIC, it cannot look inside the complement of vP (which is, anyway, empty). Hence, person-Agree on v_{restr} fails.

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[26]Regarding this issue, recall the discussion on multiple clitic movement in section §4.4.5 and §4.4.5.1 of chapter 4. In particular, the higher clitic does not intervene for ϕ-Agree between EF and the DP$_{\text{obj}}$ because there is just a single edge feature with a single ϕ-probe. The EF firstly agrees with the unchecked [·T·] feature of the clitic, and then with the unvalued case feature of the object. Thereafter, the ϕ-probe is discharged. Given Nested Agree, it must target the DP$_{\text{obj}}$, which is the last stored position. It follows that the ϕ-component of the EF can skip the clitic, with the result that the controller of agreement is the lower DP, instead of the higher clitic.

After this operation, the phase is completed. The two unchecked features in the complement of v_{restr}, [•T•] on the clitic and [case:__] on the DP$_{obj}$, trigger EF-insertion on v_{restr}. The EF moves the two elements to Spec,v_{restr}. This is shown in tree (84).

(84)
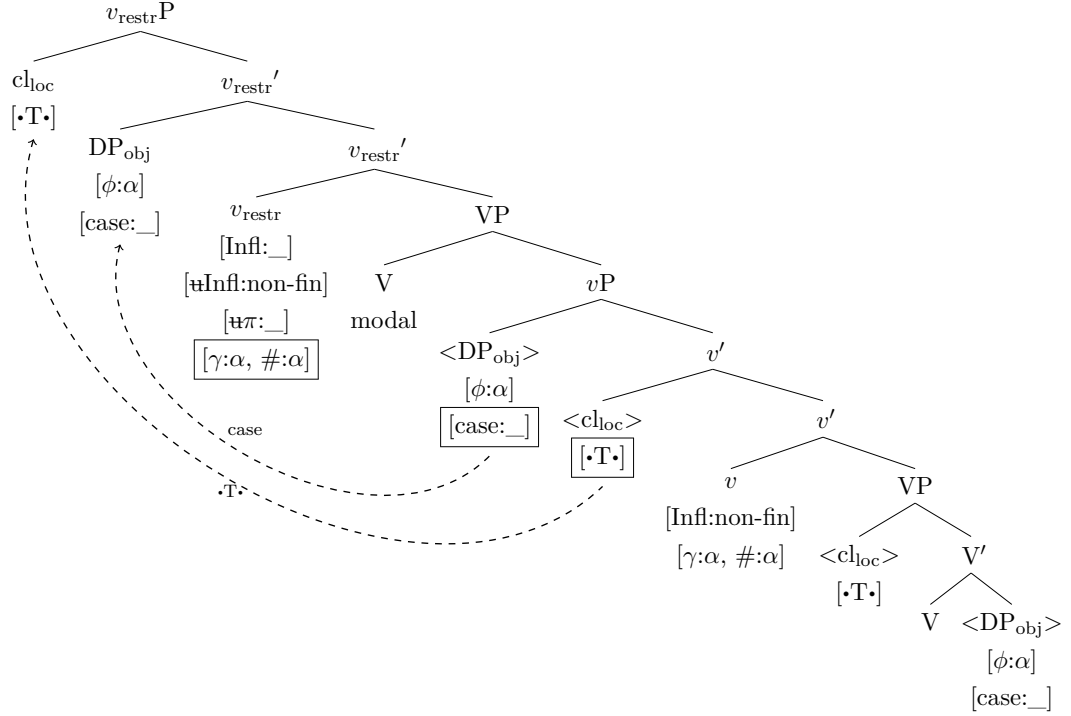
The gender and number features of the object are copied on v_{restr}, but not its person value. These features will be realized at Spell-out as participle agreement on the modal verb.

Now Perf enters the derivation, as (85) shows.

(85)
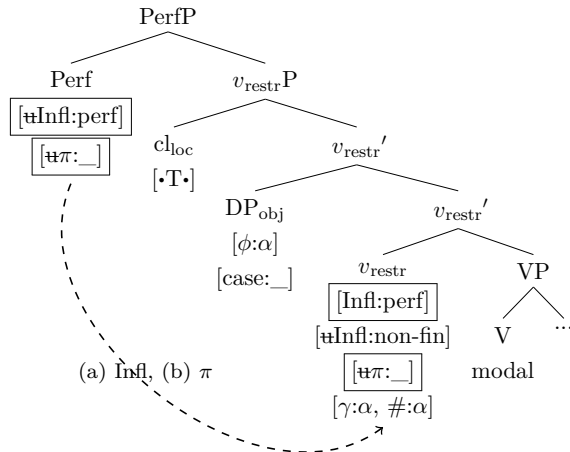
Perf checks the [Infl] feature on v_{restr}. As a second step, it probes v_{restr} for person. This

head contains a matching goal, but unvalued. Agree stops, resulting in lack of valuation. Note that, anyway, Perf can neither go back to already skipped goals (the specifiers of v_{restr}) because of Nested Agree, nor go downwards into v_{restr}P, because of the PIC. Hence, no person feature is copied on Perf. At Spell-out, this terminal node will be substituted by the allomorph BE, given the lexical entries in (69), repeated here in (86).

(86)   a. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi{:}\alpha]$
       b. $/\sqrt{\text{BE}}/ \leftrightarrow \text{Perf}$ elsewhere

When T enters the derivation, the clitic head-moves to it. Then, T assigns nominative case to the DP_{obj} in Spec,v_{restr}, it copies its ϕ-features and it raises it to its specifier.

To sum up, in the case of an unaccusative vP complement both clitic climbing and auxiliary switch are obligatory. The former because of the lack of a T position in the embedded complement, the latter because of the lack of π-feature on the lower defective v. For transitive vP complements, the auxiliary is always HAVE because of the presence of a person feature on the lower v, which is copied onto v_{restr} and, consequently onto Perf (cf. section §5.7.1).

As a general conclusion regarding vP complements, the structure is "transparent", as is normally said in the literature on restructuring in a descriptive sense. Auxiliary selection in restructuring is the result of cyclic Agree due to the head v_{restr}. The modal verb is transparent for auxiliary selection because of the special v involved in these structures, which puts into communication the features of the lower v with Perf, as if the structure would contain only a single v. The auxiliary is HAVE with transitive verbs, BE with transitive predicates with reflexive clitics (indirect and direct object) and BE with unaccusative verbs. Hence, the perfect auxiliary of the modal in the matrix always corresponds to the expected auxiliary of the lexical verb. The same can be said for participle agreement, which is found on the matrix v_{restr} exactly when it is expected on the lower v. This is caused by a matching requirement in the [•D•] feature among the two vs.

5.7.4 TP complement: the T head

I said that restructuring verbs can select either a vP or a TP. In the previous sections, I have gone through the derivations for vP complements. In what follows, I will account for auxiliary selection in clauses with TP complements.

According to Wurmbrand (2003: 109), restructuring infinitives lack tense. They might include a projection that hosts the infinitival marker (*zu* in German, *di*, *a* in Italian), but this projection bears no semantic content and does not seem to have any syntactic function.[27] However, the fact that non-finiteness is not equivalent to the lack of semantic

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[27]Wurmbrand (2003: 113) proposes to account for the distribution of the infinitival marker by means of lexical or selectional restrictions imposed by the higher matrix verb (cf. also Burzio 1986; Rochette 1988). In general, for Romance it has been claimed that the infinitival markers are not located in T, but are

tense (cf. for instance, future oriented infinitives, where futurity is contributed by a modal element *woll*, rather than by tense, Wurmbrand 2014; Grano 2015) suggests that the correspondence between LF and syntax is not always one-to-one. This opens the way to the possibility of a "dummy" T head, something like a semantically vacuous Tense head. Note that this type of head is admitted also by Wurmbrand (2014, 2012) for some type of restructuring verbs (the lexical restructuring ones, cf. schema in (35)). As acknowledged by Wurmbrand (2014: 425), "although there is a close connection between the semantic temporal properties and the syntactic structure in that semantic tense is transparently reflected syntactically, syntax does also lead an independent life to some extent, since the lack of tense does not seem to preclude (semantically vacuous) syntactic projections".

There are some syntactic traces of an embedded T in restructuring, since it blocks some transparency effects, such as clitic climbing and auxiliary switch. I think that this syntactic behavior is enough to assume the presence of a further syntactic projection (confirmed by the tests in section §5.8). Let us now look at the characteristics of the T head involved in the complement of a restructuring verb.

Restructuring verbs may select a TP headed by a "dummy" T head, since it does not contribute to the semantic interpretation: the embedded tense is interpreted as referring to a time simultaneous with the time referred to by the matrix tense, and non-finite vP and TP complement are both interpreted in the same way at LF. I mark this T head as non-finite, since the verb in the complement is morphologically realized with a non-finite form. This head cannot contain whatever tense specification, but it is always specified as non-finite by [T:non-finite]. However, it could also be marked differently (cf. for instance T[∅], which obtains when tense is deleted under sequence of tense, Grano 2015).

This T head is also deficient with respect to some morpho-syntactic properties. For instance, it cannot host impersonal clitics, probably because it cannot assign nominative case. Moreover, it must bear a ϕ-probe, which is a crucial point for the analysis. That non-finite T can contain a probe for ϕ-features can be seen from cases of agreeing infinitives in languages such Portuguese (Raposo 1987).

As far as nominative case assignment is concerned, it seems that this non-finite T should not assign nominative case. This is because otherwise the raising DP would bear nominative case twice (assigned once from the lower T, once from the higher T). Moreover, the EPP-feature on v_{restr} [•D$_{[\text{case:\_}]}$•] would fail to attract the external argument, if this were already marked with nominative case.[28] As a consequence, the subject would be trapped in Spec,T, since its features have already been valued, and there is no need for

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rather heads of prepositional phrases outside the infinitive, maybe inside the verb phrase (Manzini 1982; Rizzi 1982; Burzio 1986; Rosen 1991). The main evidence for this claim is the position of the infinitival marker with respect to negation.

[28]Since I have relativized the EPP-feature on v_{restr} for a DP with unvalued case feature, this implies either that nominative case is not assigned by T, or that the EPP-feature can raise whatever DP, if it does not find any suitable DP that respects the specific condition of unvalued case. Note also, that [•D$_{[\text{case:\_}]}$•] on v_{restr} matches the [•D$_{[\text{case:\_}]}$•] on transitive v*, whereas in the case of T complement the matching feature is exactly [•D•] instead of [•D$_{[\text{case:\_}]}$•].

inserting an EF and moving it out of Comp,v_{restr}. One might solve this problem by resorting to a generic EPP-feature of the form [•D•] on v_{restr}. However, this leads to some problems as well. For instance, if there is a further argument in an outer Spec,T, this intervening DP would be raised by the EPP-feature instead of the subject. Again, the external argument would be trapped in the complement of v_{restr} and could not be raised to matrix Spec,T, where it surfaces.[29] Hence, we may assume that no nominative assignment takes place within the complement.

Note that this type of T is similar to the T head that is associated with reduced participial clauses (cf. section §4.6 in chapter 4). Reduced clauses exhibit some restrictions that we find also in restructuring (for example, the impossibility of hosting an impersonal pronoun). In the similar case of reduced clauses, the external argument bears nominative case. This could be assigned by T, maybe because it is the complement of a CP (Belletti 1990), but it could also be default case (Schütze 2001; McFadden and Sundaresan 2011). However, the present case is different: TP is not the complement of a C head and there are two nominative assigners (higher T and lower T) in the structure. It seems, therefore, that the T head that appears in restructuring should not be a case assigner.

The featural specification of this T head is as in (87-a), whereas in (87-b) are the features of a canonical T (where α refers to one of the possible values of the set of values of the feature [Tense]).

(87)   a.   [T:non-fin], [uϕ:_] ([•D•]?)
        b.   [T:α], [ucase:nom], [uϕ:_], [•D•]

Let us now move to auxiliary selection with TP complements. The main idea for the purpose of auxiliary selection is that the possibilities for successful Agree increase by enlarging the structure (i.e., the search domain of the probe). We saw that in the case of a vP complement the result of person-Agree on Perf matches the one on the lower v. If this contains a valued π-feature, Agree on v_{restr}, and on Perf, succeeds, otherwise it fails. As we will see, in the case of a TP complement, Perf always finds a matching, valued goal. This is because v_{restr} finds a valued π-feature on T, even when the lower v does not contain any valued π-feature. Consequently, Perf finds a valued π-feature on v_{restr}, leading to HAVE insertion.

There is a question here: why does the probe on v_{restr} target T instead of the lower v? There might be two reasons for this: head movement, and the presence of an [Infl] feature on T. In this dissertation, I would like to argue that head movement is the reason why v_{restr} can probe T. When v_{restr} probes the lower v for [Infl], this has already moved to T, thereby forming the complex head T + v + V in (88) (which exemplifies the case of an

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[29]On a side note, in this specific case the more general [•D•] would work as well as [•D$_{\text{[case:_]}}$•] since there is no problem of defective intervention. If there are any clitics that compete with the subject for raising, they will be all already incorporated into T when v_{restr} probes. There might, however, be the problem of other arguments, such as indirect object. Hence, I prefer to stick to the relativized version of the EPP and to assume that this T does not assign nominative case.

unaccusative v).[30]

(88)

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              T
          /        \
        v            T
       / \        [T:non-fin]
      V   v         [φ:α]
    [Infl:__]
```
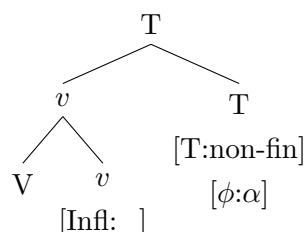
In the complex head in (88), the person feature on T is available for a probe that targets v for person, if the features of the adjoined part of the complex head are part of the complex head as a whole (cf. Fanselow 2001 for a similar proposal). The features of the complex head are all visible at the same time for a probe that targets part of the complex head, in a sort of *bag-of-features* model. In the present case, probing the complex head in (88) works as follows. First of all, the higher v_{restr} probes v for [Infl]. After that, it starts its search for the person feature from this position, as Nested Agree prescribes. Even though the person feature is not located on v itself, but rather on T, it is visible for the person probe because it is contained in the same complex head. Hence, person-Agree on v_{restr} succeeds thanks to the matching, valued feature on T. I refer the reader to section §5.7.5, and in particular to section §5.7.6, for further discussion of probing within a complex head.

The alternative possibility consists of considering the [T] feature on T as a type of [Infl] feature. Under this scenario, independently of head movement, v_{restr} probes directly T for [Infl] and then the same head for person. The idea of having the same kind of feature is present in Wurmbrand (2003); Adger (2003); Bjorkman (2011).

Let me briefly compare the head movement approach and the T[Infl] strategy in the case of a transitive complement. In the former, the feature on v_{restr} is copied from the lower v, which ultimately contains the features of the object. In the latter, the person feature on v_{restr} is copied from T, which contains the features of the subject. Since the person feature on Perf is not morphologically realized as inflection, the two analyses cannot be distinguished in their result, which is HAVE insertion in both cases. However, there could be languages where this distinction is evident in the morphological component. Moreover, the case of reflexive transitive clauses is an interesting case, since the complex head in that case contains an unvalued person feature on v, and a valued one on T. Data show that the auxiliary in this case is mostly exclusively realized as HAVE, proving that the feature on T is preferred to the feature on v. This can be achieved under the T[Infl] approach, but there might be other reasons why this is the case. For instances, if both features are visible for the probe at the same time, the valued one could be preferred, or both could be copied and then the more specific one would be realized at Spell-out.

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[30]This is valid if head movement happens in the syntax (before or as soon as the next phase head is merged in the structure). Cf. Matushansky (2006: 99-101) for the claim that head movement applies (at least partially) in narrow syntax, and Hartman (2011) for evidence in favor of syntactic head movement.

Whatever analysis is pursued, the main idea is that in the case of a TP complement containing an unaccusative predicate v_{restr} copies the person features from T, resulting in successful Agree even when v itself does not contain any person feature.

5.7.5 TP + transitive

Let us now look at the derivation for a sentence containing a transitive verb. In the clause in (89-a), the complement of the modal verb could be either a vP or a TP. In the former case, the derivation is as in section §5.7.1. In the latter case, and for (89-b), where the placement of the clitic pronoun on the non-finite verb indicates that the complement is a TP, the derivation is presented in this section.

(89) a. Teresa ha   voluto   mangiare la   torta.
          Teresa have.PRS.3SG want.PRTC eat.INF   the cake
          'Teresa wanted to eat the cake.'
      b. Teresa ha   voluto   mangiar=la.
          Teresa have.PRS.3SG want.PRTC eat.INF=ACC.3SG.F
          'Teresa wanted to eat it.'

First of all, the vP is built as in the previous derivation in (66). The vP is then merged with a T head. This is shown in tree (90), which represents the syntactic structure of the clause (89-a). I have chosen to propose the derivation for a clause without a clitic for the sake of simplicity. If a clitic is present, as in (89-b), this is moved to an outer Spec,v by an edge feature inserted on v. Note that the gender and number values copied by the edge feature will not be spelled out as participle agreement, since the lower v will not end up being marked by the feature [Infl:perf].

(90)
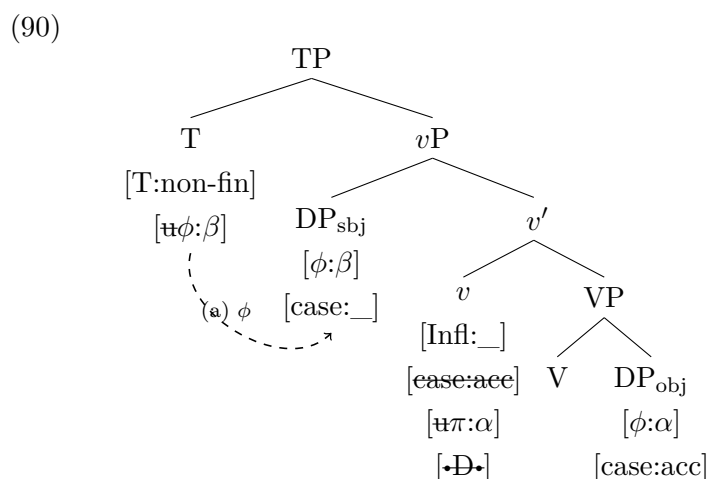
This defective version of the T head is specified for a T value and it contains a probe for ϕ-features, as finite T does. As I said in section §5.7.4, I assume that this head neither bears an EPP-feature, nor it assigns nominative case. However, the analysis does not change if the head contains additional features. If there is a clitic in the structure, it

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immediately head-moves to T. Then, the ϕ-probe searches downwards, and it is satisfied by the features on the external argument. Finally, head movement takes place, forming the complex head V + v + T.

As a next step, v_{restr} in its full version (namely, with a $[\cdot D_{[\text{case:\_}]}\cdot]$ feature) takes the TP as its complement. The head v_{restr} probes v for [Infl], and then for person. Agree succeeds for both features. The DP is also raised to Spec,v_{restr} by the EPP-feature $[\cdot D_{[\text{case:\_}]}\cdot]$. In addition, there is no need for edge feature insertion: if the structure contains a clitic, this should have already incorporated into the embedded T, thereby having satisfied its $[\cdot T\cdot]$ feature. The operations are represented in tree (91).

(91)
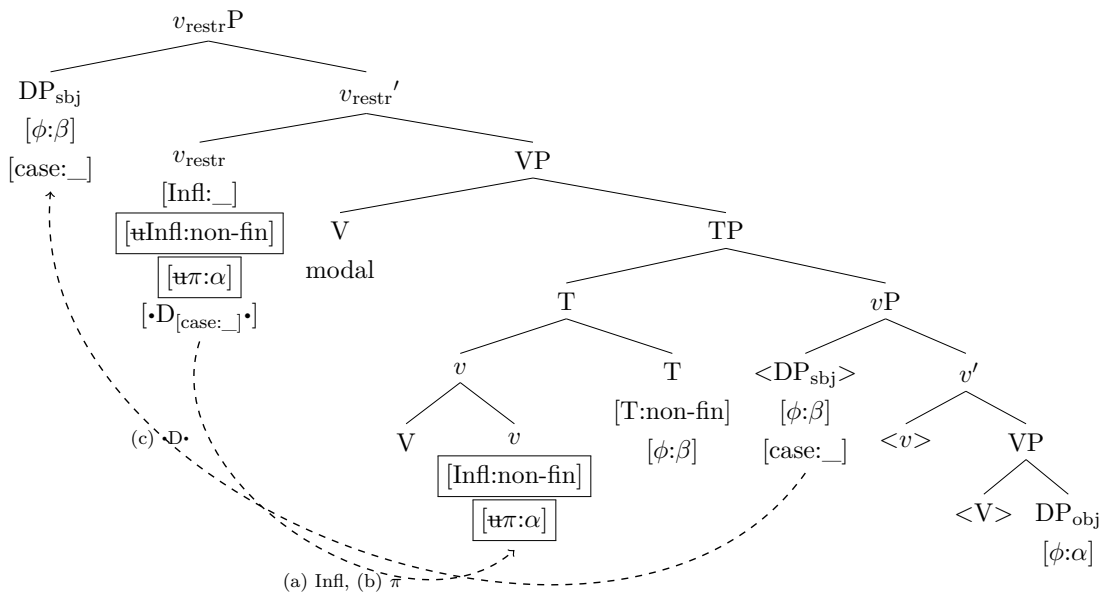
As the reader may have noticed, the result of π-Agree on v_{restr} is the same, whether it takes a transitive v as its complement, as in tree (67), or it selects a TP, as in (91). In both cases, v_{restr} successfully probes the embedded v for person. Consequently, the result on Perf will be the same as well: it will probe v_{restr} both for the Infl-feature and for person, resulting in successful valuation, both with a vP complement and with a TP complement.

To sum up, in case of transitive verbs the perfect auxiliary of the modal verb is always HAVE. This is because Perf acquires a valued person feature from v_{restr}, which has copied it from the embedded transitive v, independently of the size of the complement.

The reader may wonder whether there is a redundancy of structures that should be avoided when possible. In the analysis, two syntactic structures correspond to (92-a): either a TP or a vP. These can be disambiguated through clitic climbing (92-b,c). However, in the absence of clitics the structure is ambiguous.

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(92)   a.   Teresa ha   voluto   mangiare la   torta.
            Teresa have.PRS.3SG want.PRTC eat.INF   the cake
            'Teresa wanted to eat the cake.'   TP / *v*P

       b.   Teresa ha   voluto   mangiar=la.
            Teresa have.PRS.3SG want.PRTC eat.INF=ACC.3SG.F
            'Teresa wanted to eat it.'   TP

       c.   Teresa l=ha   volut-a   mangiare.
            Teresa ACC.3SG.F=have.PRS.3SG want.PRTC-SG.F eat.INF
            'Teresa wanted to eat it.'   *v*P

In this dissertation, I show that there is evidence for assuming this optionality of structures, since the two clauses in (92-b,c) either can or cannot undergo some further syntactic operations that are sensitive to the size of the clause (cf. section §5.8). The size can be detected via clitic placement and auxiliary switch for unaccusative verbs. Hence, there is enough reason to think that this optionality is underlyingly always possible, even when it is not visible on the surface, as in transitive clauses without clitic arguments (92-a).

A way to avoid the structural ambiguity in (92-a) would be to assume a constraint that requires to choose the simpler complement when it is possible. Such a principle has been proposed by Cardinaletti and Starke (1999) in their analysis of the distribution of weak and strong pronouns.

(93)   *Economy of Representations* (Cardinaletti and Starke 1999: 47):
       Minimise Structure.

I think that a principle such as (93) makes some wrong predictions if applied to restructuring (at least under the present assumptions). For example, if (93) is adopted, it remains unexplained why it is possible to ever have a TP complement in the absence of clitics, with the consequence that auxiliary switch is always expected. Let us assume that the presence of a clitic, bearing a [•T•] feature, constitutes a reason to choose a TP over a *v*P. If the structure does not contain any clitic, the *v*P is chosen, according to (93). Under my analysis, the prediction is that without any clitic in the structure only "transparent" auxiliaries are invariably expected: HAVE when a transitive verb is embedded, and BE when the verb is unaccusative (cf. sections §5.7.1, §5.7.3). The economy principle should avoid the construction of a bigger TP structure when there is no clitic. Consequently, the auxiliary HAVE should not be possible with an unaccusative verb without a clitic, which is of course not the case, as shown in example (54-b), repeated here again.

(94)   Teresa ha   voluto   andare al   mare.
       Teresa have.PRS.3SG want.PRTC go.INF to.the beach
       'Teresa wanted to go to the beach.'

In addition, if the T head is needed because of the presence of a clitic, a further problem is why it should ever be possible to have just a *v*P projection instead of a TP when there

is a clitic, which requires a T head. If (93) imposes the presence of a T head when there is a clitic, clitic climbing should never take place because the complement of the modal verb would already contain a host for the clitic.'

In contrast, if one instead assumes that (93) invariably imposes a vP complement, lack of clitic climbing should never be expected. With a vP complement, the [·T·] feature on the clitic is satisfied later in the derivation by a higher projection. If this option is possible, then the principle of Economy of Representations should always impose that the structure must be a vP and the clitic must wait until matrix T is merged, invariably resulting in clitic climbing.

Hence, if a principle such as Economy of Representations exists, then it should be violable, giving rise to optionality. If the principle is not optional, then it should be related to processing more than to language production. The derivation is free to choose between different options and the complement is built according to the principles of syntax (for example, following the order of syntactic heads as it derives from the c-selectional features on those heads). Depending on the choice, other operations may apply as a consequence, such as clitic climbing. Two different syntactic structures end up corresponding to the same surface string, when no operation that is sensitive to the size has applied (such as clitic placement). In that case, the surface string is analyzed by the recipient of the speech act with the simplest structure that is compatible with it, given an economical processing principle as (93).

5.7.6 TP + reflexive

Let us now look at clauses with a reflexive clitic inside a TP complement.[31]

(95)   a.   Teresa ha   voluto   lavar=si.
            Teresa have.PRS.3SG want.PRTC wash.INF=REFL.ACC.3SG.F

       b.   *Teresa è   volut-a   lavar=si.
            Teresa be.PRS.3SG want.PRTC-SG.F wash.INF=REFL.ACC.3SG.F
            'Teresa wanted to wash herself.'

       c.   Teresa ha   voluto   mangiar=si   un panino.
            Teresa have.PRS.3SG want.PRTC eat.INF=REFL.DAT.3SG.F a   sandwich

       d.   *Teresa è   volut-a   mangiar=si   un panino.
            Teresa be.PRS.3SG want.PRTC-SG.F eat.INF=REFL.DAT.3SG.F a   sandwich
            'Teresa wanted to eat a sandwich by/for herself.'

In the sentences in (95), the clitic position indicates that the complement is a TP. In this case, the perfect auxiliary is always realized as HAVE.

The structure is built up to the T head as in tree (96).

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[31]For the purpose of this discussion, I consider sentences (95-b) and (95-d) as ungrammatical, which is also my personal judgment. However, I provide a discussion of these clauses in section §5.7.9, since for some speakers they might be grammatical.

(96)

TP
├─ T
│ ├─ DP_obj-refl [φ:β] [case:acc] [•T•]
│ └─ T [T:non-fin] [φ:β]
└─ vP
   ├─ <DP_obj-refl> [φ:β] [case:acc] [•T•]
   └─ v'
      ├─ DP_sbj [φ:β] [case:__]
      └─ v'
         ├─ v [Infl:__] [case:acc] [uπ:__] [•D•]
         └─ VP
            ├─ V
            └─ <DP_obj-refl> [φ:__] [case:acc] [•T•]

(b) •T• (c) φ (a) π
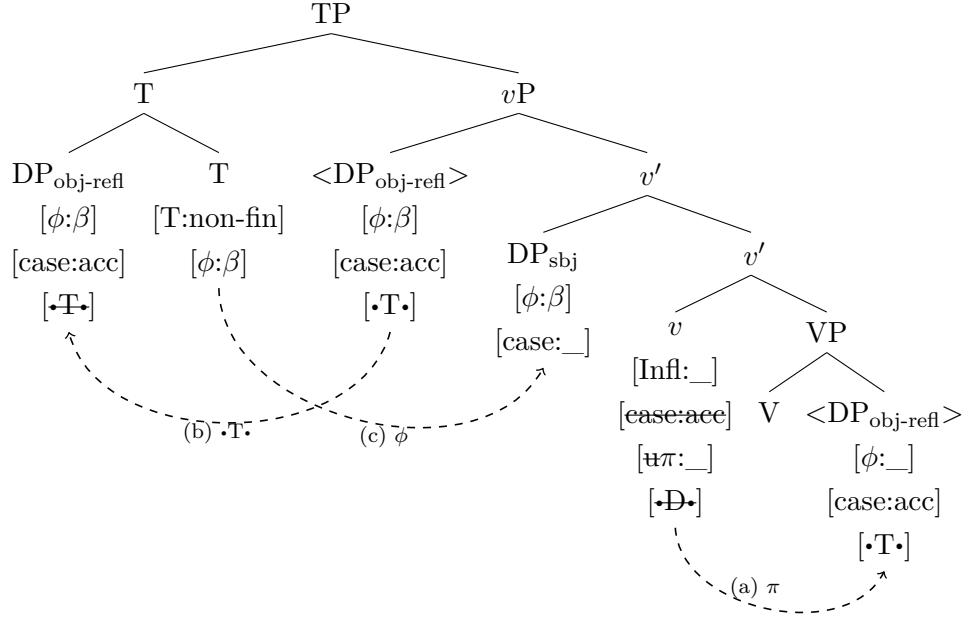
As we saw in section §5.7.2 of this chapter and in section §3.3.2 in chapter 3, if the internal argument is a reflexive pronoun, person-Agree on transitive v fails because the reflexive pronoun does not bear valued ϕ-features yet, when v probes for person. Hence, after Agree v bears an unvalued person feature. When the T head enters the derivation, the reflexive clitic incorporates into it, thereby satisfying its [•T•] feature. In addition, the T head probes the external argument for ϕ-features, which is the highest matching goal.

When v_{restr} (in its full version, equipped with the [•D_{[case:__]}•] feature, since it takes as a complement a TP) is merged in the structure, its complement contains the complex head T + v + V (plus the clitic) created via head movement. The tree is shown in (97).

(97)

v_{restr}P
├─ v_{restr} [Infl:__] [uInfl:non-fin] [uπ:β] [•D_{[case:__]}•]
└─ VP
   ├─ V modal
   └─ TP
      ├─ T
      │ ├─ v
      │ │ ├─ V
      │ │ └─ v [Infl:non-fin] [uπ:__]
      │ └─ T
      │   ├─ DP_obj-refl [φ:β] [case:acc] [•T•]
      │   └─ T [T:non-fin] [φ:β]
      └─ vP
         ├─ <DP_obj-refl> [φ:β] [case:acc] [•T•]
         └─ v'
            ├─ DP_sbj [φ:β] [case:__]
            └─ v'
               ├─ <v>
               └─ VP
                  ├─ <V>
                  └─ <DP_obj-refl> [φ:__] [case:acc] [•T•]

(a) Infl (b) π (c) π
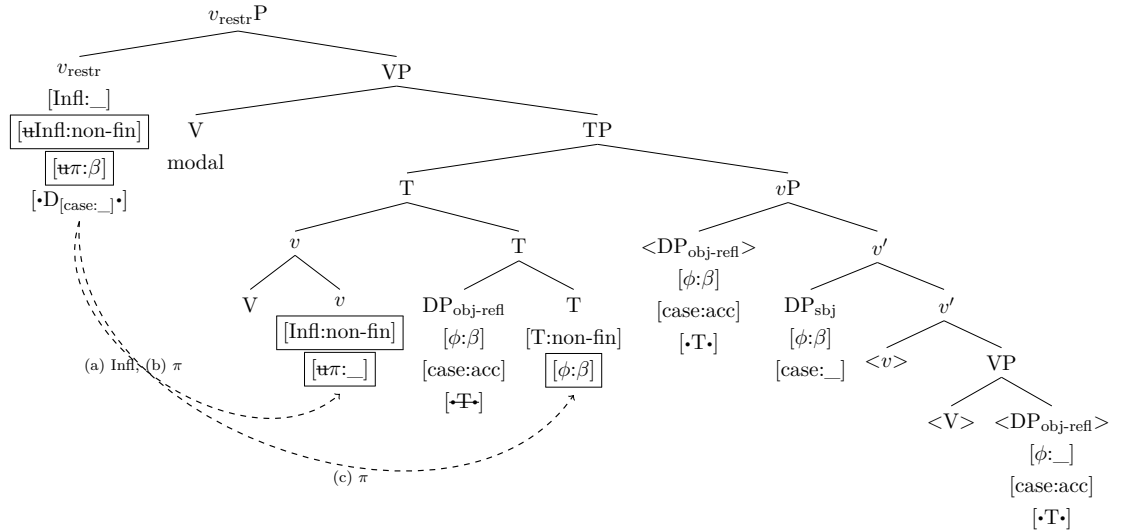
The head v_{restr} probes the embedded v for [Infl]. After this operation, it probes for person. Due to Nested Agree, it must probe again v. This head bears a matching feature, although unvalued. Crucially, v_{restr} does not stop at the unvalued person feature on v, but it copies the valued person feature from T, which is part of the same complex head V + v + T. In fact, the perfect auxiliary HAVE on the matrix modal in (95) shows that person-Agree must succeed in finding a value. This behavior is somehow unexpected, since in this dissertation I have always said that an unvalued matching feature is a suitable goal for Agree. How, then, is it possible that v_{restr} probes T for person, instead of v?

I argue that the reason for this output is because all the features on the subparts of a complex head are simultaneously represented as on a single, simple head. In tree (97), when v_{restr} searches v, it also simultaneously searches T. This can be thought as if v_{restr} probes the topmost instance of T, and on this T are located all the features of the complex head. Hence, two different subparts of the complex head satisfy v_{restr} for [Infl] and for $[\pi]$, exactly as two different features on a single head would satisfy two separate probes.

A possible drawback of this solution is that Agree should simultaneously see all instances of the person feature and decide to copy only the valued one. One could assume a general principle that favors valued goals over unvalued goals, but in general it might also be the case that the probe copies both goals. Even if both features are copied, the Subset Principle will insert the allomorph corresponding to the more specific, valued feature. One may also wonder about what happens with non reflexive transitive clauses, where the complex head V + v + T contains different values for the person feature: the subpart T contains the π-feature copied from the subject, whereas the subpart v contains the π-feature of the object (cf. tree (91)). This configuration does not result in a problem, since in Standard Italian the allomorph realizing Perf is sensitive to the presence of a person feature, but not to its specific value.[32]

Another potential problem concerns Vocabulary Insertion. If all features are simultaneously present on the complex head, how can we ensure that the right features are spelled out by a lexical entry? For example, when the ϕ-inflection on T is spelled out, the chosen ϕ features should be the one located on T (copied by its ϕ-probe), which generally correspond to the features of the external argument, and not the ones on the subpart v, which are copied from the internal argument. If all features are visible at the same time, how can inflection on T morphologically realize the right features? I think that the solution to this problem lies in the fact that Vocabulary Insertion and Agree are two different operations. It is standardly assumed in Distributed Morphology that Vocabulary Insertion really substitutes subparts of complex heads. Hence, Vocabulary Insertion considers only the features on the relevant terminal node (in the present example, the head T). Agree, in contrast, operates on the whole c-command domain and once all features are accessible it does not matter where they come from. In other words, Vocabulary Insertion is tied to

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[32]For languages where the perfect auxiliary depends on the person feature of the subject, such as Ariellese, there is no issue because the Perf head probes directly the raised subject. I briefly discuss this case in section §5.11, but I refer the reader to chapter 6 for more details.

the terminal nodes, whereas Agree operates over a search domain.

Let me note, however, that there are other possible explanations to ensure that the features of T are targeted by v_{restr} via Agree. One alternative possibility, which I have sketched in section §5.7.4, is to provide T with an [Infl] feature, which could be the [T:non-fin] feature itself ([Infl:non-fin]). Under this approach, the T head in the complement always provides the relevant features both for [Infl] and [π], independently of v. The T head is also closer to v_{restr} than v is.

Another option is to consider an unvalued feature as an invisible one. This is in contrast with what I have proposed so far for all other cases discussed in this dissertation. For example, I have argued that in reflexive clauses Perf probes v, which contains an unvalued matching feature, and it is satisfied by it, with the result that the probe stops its search (section §3.3.2 in chapter 3). Note, however, that if one instead assumes that lack of value is equivalent to lack of feature, the result would not change for the purpose of the present analysis. In fact, in all the cases discussed in chapter 3 and in this chapter (with the partial exception of transitive verbs with an indirect reflexive object, cf. here below), Agree would stop anyway after having probed v because of the Phase Impenetrability Condition or because the search domain is exhausted, independently of the fact whether the person feature on v is a valued or an unvalued one. Hence, the analysis would work even if an unvalued feature is not considered as a matching feature. This would explain why the person probe on v_{restr} can skip the unvalued feature on v and copy the person feature from T.

However, the analysis where an unvalued feature is a matching feature seems to me theoretically more correct and analytically simpler than the other one. First of all, if one assumes that an unvalued feature does not cause defective intervention, there is a case where one runs into a wrong prediction for auxiliary selection: transitive verbs with an indirect reflexive object (section §3.3.7 in chapter 3). In this case, the perfect auxiliary is realized as BE, because Perf π-probes v, which has agreed with the reflexive clitic pronoun in Spec,Appl before binding has taken place, resulting in agreement with a π-defective element. If one assumes that the π-probe can skip an unvalued π-feature, in order to derive these data by means of the PIC, one has also to assume that the applicative head Appl is a phase in Italian. If it is not a phase, the probe on v would skip the unvalued person feature on the reflexive indirect object and target the valued person feature on the direct object, thereby leading to HAVE insertion, contrary to the data.

Secondly, in sections §5.7.9.2 and §5.7.9.3 I discuss the emergence of the unexpected auxiliary BE in the presence of a TP complement. One of the possible explanations for this fact relies on defective intervention by an unvalued feature (on v, after agreement with the reflexive DP, or on featurally defective clitics, cf. section 4.4.6.1 in chapter 4 for the latter case). Hence, it seems that considering an unvalued feature as a matching goal can handle these cases. Therefore, I would like to stick to the first scenario, where the features within the complex head are all visible at once.

Note that head movement influences Agree in restructuring, but not in root clauses, because only in restructuring the lower v can move to the lower T at the relevant point in the derivation. In root clauses, this is not possible because v does not move to T, but Perf does instead (or, if it does, thereby forming the complex head T-Perf-v-V, it does so after Perf has been merged in the derivation and has probed for person).

As far as participle agreement is concerned, note that in the sentences (95-a) and (95-c) there is no inflection on the modal verb, even though there is a clitic in the structure. This is because there is no edge feature on v_{restr}. In fact, the reflexive clitic has been moved out of its base position by an edge feature on the lower v, but the gender and number features are not morphologically realized on this head, since it does not bear the relevant feature [Infl:perf]. In contrast, no edge feature has been inserted on v_{restr}, since the clitic pronoun has already incorporated into the lower T, thereby discharging its [·T·] feature.

5.7.7 TP + unaccusative

The difference between a vP and a TP complement can be clearly seen in the case of an embedded unaccusative verb. We saw in section §5.7.3 that if v_{restr} takes a defective vP complement, the perfect auxiliary on the matrix corresponds to the one that the embedded verb would select, namely BE. If the complement is a vP, there is no possible goal for the π-probe on v_{restr}. If instead the complement is a TP, the T head provides a goal for that probe. Let us now see the derivation for the sentence in (98). Once again, the position of the clitic constitutes evidence for the TP size of the complement (but see also section §5.7.9).

(98)   Teresa ha   voluto   andar=ci   ieri.
        Teresa have.PRS.3SG want.PRTC go.INF=there yesterday
        'Teresa wanted to go there yesterday.'

Unaccusative verbs are selected by a defective v, which is not a probe for person, nor a case assigner (consequently, the internal argument must move to Spec,v). Once the vP is built, it is merged with a T projection, as tree (99) shows.

(99)
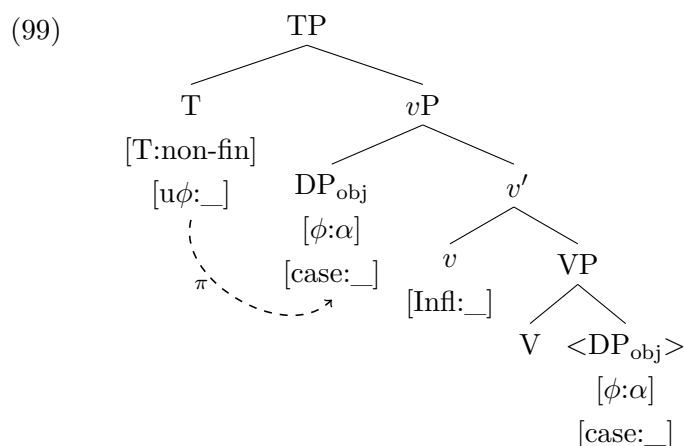
The T head probes downwards for person. It finds the relevant feature on the internal argument located at the edge of the phase v. Now the TP is completed and is selected by v_{restr}, as shown in (100). This head comes in its full version (equipped with the EPP-feature), since it takes as a complement a TP.

(100)
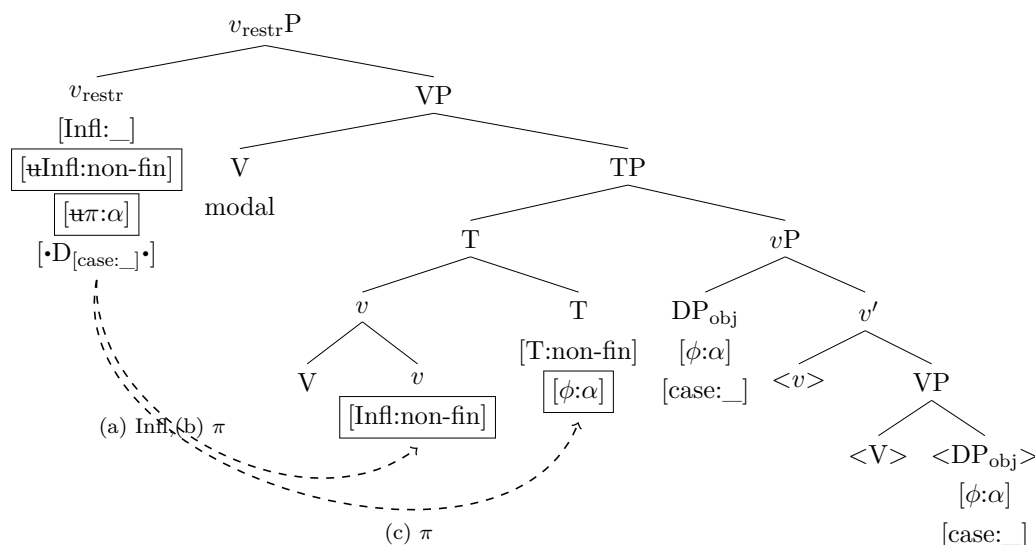
In tree (100), v_{restr} probes v for [Infl]. Then, it discharges its person probe, searching again v because of Nested Agree. The unaccusative v does not contain any person specification. However, there is a relevant feature on the complex head that contains v, located on the subpart T. The person probe on v_{restr} copies this feature from T.

When Perf enters the derivation, it probes v_{restr} for [Infl], and, subsequently, for person. Perf can copy a valued person feature, since v_{restr} has copied it from the embedded T, which itself had probed the internal argument.

To sum up, when the lower v is defective, if the complement is a vP the auxiliary on the modal is realized as BE (because defective v is not a π-probe). If the structure is further enlarged and built up to a TP, then the auxiliary is HAVE (given that there is a further goal on T for π-Agree). By building more structure, new possibilities for Agree arise for v_{restr}, and, consequently, for Perf. In general, whenever the complement contains a T head, Agree on Perf always succeeds. T behaves as a "repair" to the defectiveness of the embedded v, by providing the valued matching feature that the probe on Perf is looking for.

5.7.8 Impersonal clauses

Let me now address the case where a modal verb select for a complement with an impersonal argument. Recall that in impersonal root clauses the perfect auxiliary is always BE (cf. section §3.3.9 in chapter 3). I have argued that this is due to the presence of an impersonal

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Voice_{impers}, which restricts the external argument position to the impersonal argument *si* (characterized by an unvalued person feature). This head Voice_{impers} bears an [Infl] feature and an unvalued person feature. The head Perf agrees with Voice_{impers} for the Infl-feature, and also for the person feature, due to Nested Agree. The unvalued person feature on Voice_{impers} causes Agree to stop, with the consequence that the person probe on Perf remain unvalued and BE is inserted.[33] For the detailed derivation of impersonals, I refer the reader to section §3.3.9 of chapter 3.

In section §5.3, we saw that when a restructuring verb selects an impersonal complement there is no optionality for auxiliary selection. The auxiliary is invariably BE and clitic climbing is obligatory, as shown in (101). The relevant data are given in examples (19), (20), (21), (22) in section §5.3.

(101)   Si=sono   volut-e   mangiare tutte le   torte.
         IMPERS=be.PRS.3PL want.PRTC-PL.F eat.INF   all   the cakes
         'One wanted to eat all the cakes.'

Under the assumption that impersonal clauses require the presence of a Voice head, the complement of the modal verb must be at least a Voice_{impers}P. A *v*P complement would be too small to contain an impersonal argument. The question is now how big the complement of v_{restr} should be. In the present analysis, clitic climbing happens as a consequence of a small embedded complement that does not contain any T head (otherwise the clitic incorporates into the lower T). As I have just said, here clitic climbing is obligatory (cf. examples (19)–(22)). The incompatibility of restructuring with the placement of the clitic *si* in the lower position can be due to different reasons, which need to be investigated in detail. In particular, it must be due to the features of at least one of these items: *si*, Voice_{impers}, or T. For instance, the problem could be related to the impossibility of *si* to cliticize to a non-finite T, to the inability of impersonal Voice to be the complement of a non-finite T or to the impossibility of constructing a Voice_{impers}P up to a TP to the exclusion of CP.

For the purpose of this dissertation, I assume that impersonal *si* needs to incorporate into a T head that assigns nominative case. In the syntax, this could be represented by a relativized [·T_{[ucase:nom]}·] Merge feature on the clitic. This requirement might be due to the fact that this clitic does not receive case, as I have proposed in section §3.3.9.2 of chapter 3 (cf. also (101), where the argument marked with nominative case is the direct object). In section §5.7.4 of this chapter, I have suggested that the T head involved in restructuring does not assign nominative case. This is compatible with the impossibility of cliticization of an impersonal argument. Note also that the impersonal *si* is ruled out in

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[33]In the light of the discussion on unvalued features in the previous section, the reader may wonder if the analysis would work even if an unvalued feature is not a matching feature. Again, the problem is solved with the Phrase Impenetrability Condition, under the assumption that Voice_{impers} is a phase. Note, however, that participle agreement seems to show that Voice_{impers} should not be a phase, as discussed below in this section.

participial clauses, where it has been argued that the T head does not assign nominative, but rather C does (Belletti 1990). It should be said that the data with impersonal are quite complex (cf. Cinque 1988 on the special readings and on the distributional restriction of impersonal *si* in non-finite clauses presented here below in (109)). Hence, I leave this issue to further research.

I propose that in the case of impersonal complements, v_{restr} can select either a vP or a TP, as always. The vP option actually consists of a VoiceP (recall that I consider Voice heads as vs). In the case of TP complements, the T head cannot host the impersonal clitic.

Let us first of all look at the VoiceP complement. The portion of the clause selected by a restructuring verb for a transitive impersonal as in (101) is represented in the tree (102).

(102)
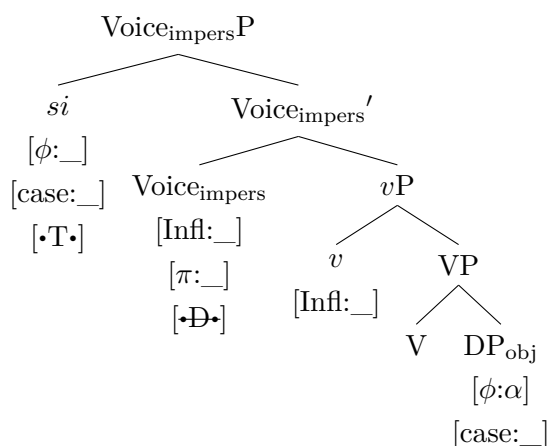
In (102), the transitive verb is selected by a defective v, whereas the impersonal clitic *si* is introduced by Voice$_{\text{impers}}$ (cf. section §3.3.9.1 in chapter 3 for the relevant proposal). The presence of Voice$_{\text{impers}}$ in the complement ensures that the impersonal interpretation is realized already in the complement clause that contains the lexical verb. As shown in the tree, the impersonal clitic and the impersonal Voice contain an unvalued person feature.

This Voice$_{\text{impers}}$P is selected by v_{restr}. This is not a problem for the selectional requirement of v_{restr}, since Voice and v are of the same category. The derivation is represented in tree (103). In (103), v_{restr} agrees for [Infl] with Voice$_{\text{impers}}$, which is the highest matching goal. Successively, it probes for person. Due to Nested Agree, the goal is again Voice$_{\text{impers}}$, which bears a person feature, although unvalued. Hence, Agree stops and the result on v_{restr} is [ʉπ:__].

(103)

v_{restr}

v_{restr}
[Infl:__]
[ᵾInfl:non-fin]
[ᵾπ:__]

VP

V
modal

$\text{Voice}_{\text{impers}}\text{P}$

$<si>$
[φ:__]
[case:__]
[·T·]

$\text{Voice}_{\text{impers}}{}'$

$\text{Voice}_{\text{impers}}$
[Infl:non-fin]
[π:__]
[·D·]

$v\text{P}$

v
[Infl:__]

VP

V DP_{obj}
[φ:α]
[case:__]

(a) Infl, (b) π
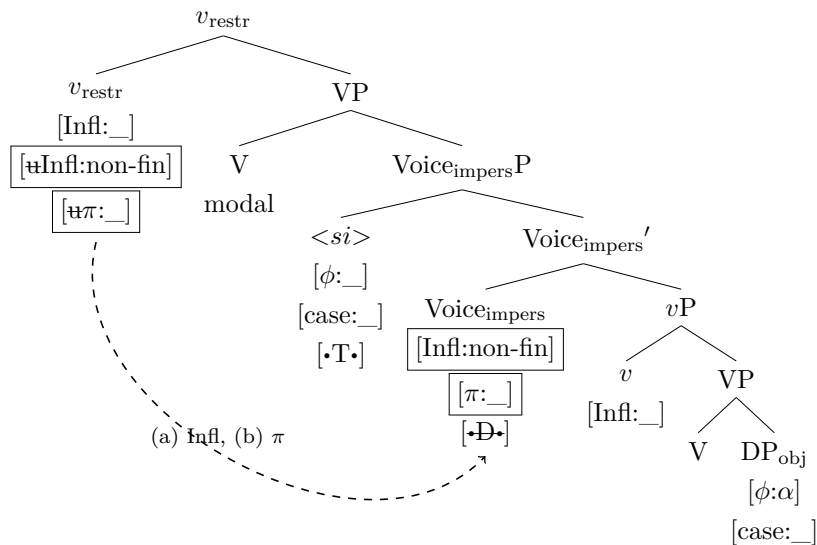
Now Perf is merged in the structure. It probes v_{restr} both for [Infl] and for person (because of Nested Agree). As the unvalued person feature on $\text{Voice}_{\text{impers}}$ has caused defective intervention for π-Agree on v_{restr}, now the same scenario is repeated again on Perf: [ᵾπ:__] on v_{restr} leads to defective intervention, resulting in Perf[ᵾπ:__]. Consequently, at Spell-out the elsewhere form BE is inserted for the terminal node Perf.

(104)

PerfP

Perf
[ᵾInfl:perf]
[ᵾπ:__]

$v_{\text{restr}}\text{P}$

si
[φ:__]
[case:__]
[·T·]

$v_{\text{restr}}{}'$

v_{restr}
[Infl:perf]
[ᵾInfl:non-fin]
[ᵾπ:__]
[·D[case:__]·]

VP

V
modal

$\text{Voice}_{\text{impers}}\text{P}$

$<si>$
[φ:__]
[case:__]
[·T·]

$\text{Voice}_{\text{impers}}{}'$

$\text{Voice}_{\text{impers}}$
[Infl:non-fin]
[π:__]
[·D·]

$v\text{P}$

v
[Infl:__]

VP

V DP_{obj}
[φ:α]
[case:__]

(a) Infl, (b) π
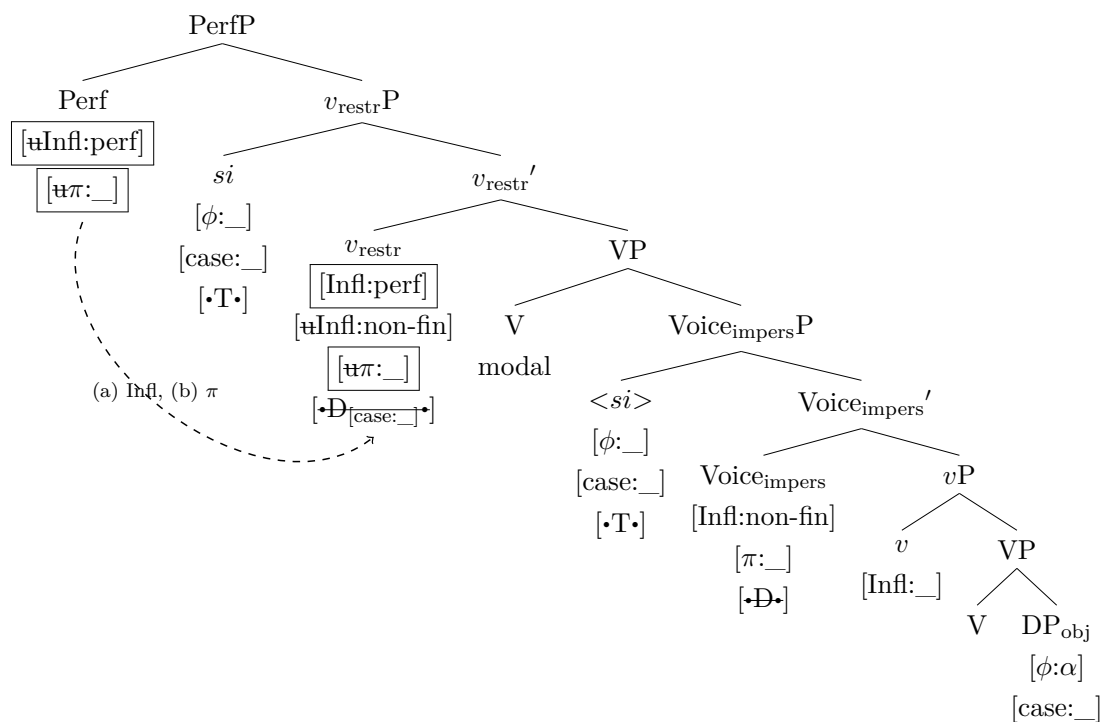
It should be acknowledged that the trees above are a bit simplified. For example, I have

omitted the process of edge feature insertion for the impersonal clitic and the internal argument (which must move out of the phase domain because of its unchecked case feature, since defective v is not a case assigner). As far as participle agreement is concerned, in this clause we find agreement with the internal argument. Participle agreement is a consequence of the type of v selected by Voice$_{\text{impers}}$: if the lower v is defective, the internal object does not receive case from v, so that it must escape the phase (overtly or covertly, cf. section §4.5 in chapter 4), thereby triggering participle agreement.[34] Note that there is an EPP on v_{restr}. In fact, when v_{restr} selects for a VoiceP equipped with a [·D·] feature, it must come in its non-defective version, equipped with an EPP-feature. However, this EPP-feature raises the impersonal clitic, instead of the internal argument. Movement of the internal argument is realized via EF-insertion.

To sum up, in the derivation with a VoiceP complement, Perf agrees with an item that bears an unvalued person feature (Voice$_{\text{impers}}$), leading to BE insertion. Moreover, the clitic must reach matrix T, since there is no other T head available for incorporation.

Let us now look at the case of a TP complement. First of all, we build the TP complement, as shown in (105).

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[34]Participle agreement on v_{restr} is controlled by the object because it must move out of the phase to get its case feature valued by the matrix T. However, also the impersonal clitic must move out of the domain of v_{restr} (because of [·T·] and [case:__]). Why does the participle agree with the direct object, and not with the impersonal argument? The derivational steps are as follows. Firstly, the DP$_{\text{obj}}$ moves out of Comp,v, landing in Spec,v. Then, Voice$_{\text{impers}}$ introduces the impersonal argument. If Voice$_{\text{impers}}$ is not a phase (cf. footnote 39 in section §3.3.9.1, chapter 3), the impersonal si is located in a higher position than the DP$_{\text{obj}}$, because the DP$_{\text{obj}}$ does not have to move to the edge of Voice$_{\text{impers}}$. Hence, the EPP on v_{restr} raises the impersonal si, whereas an edge feature is needed for moving the DP$_{\text{obj}}$, resulting in participle agreement controlled by the object.

Note that, if the matching condition for the EPP-feature in (55) takes into consideration the embedded head v instead of Voice$_{\text{impers}}$, then v_{restr} does not bear an EPP-feature. However, if the impersonal clitic is in an higher position than the object, also in this case participle agreement is controlled by the object, since the edge feature only copies the ϕ-features of the lower element (cf. section §4.4.5 in chapter 4). Hence, participle agreement seems to provide evidence against the phasal status of Voice$_{\text{impers}}$.

If Voice$_{\text{impers}}$ is instead a phase, the direct object is in a higher position than the impersonal clitic when v_{restr} enters the derivation. In order to derive the right distribution of participle agreement, one should assume that (i) v_{restr} does not bear an EPP-feature when it selects a Voice$_{\text{impers}}$ that selects a defective v, (ii) two EFs are inserted, rather than a single one, (iii) in the case of conflicting sets of ϕ-features on the two EFs, the ϕ-features realized by participle agreement are the one of the DP and not of the impersonal argument, for reasons yet to be understood.

(105)

TP

T
[T:non-fin]
[φ:__]

Voice_impers P

si
[φ:__]
[case:__]
[•T•]

Voice_impers'

Voice_impers
[Infl:__]
[π:__]
[•D•]

*v*P

v
[Infl:__]

VP

V   DP_obj
[φ:α]
[case:__]

π
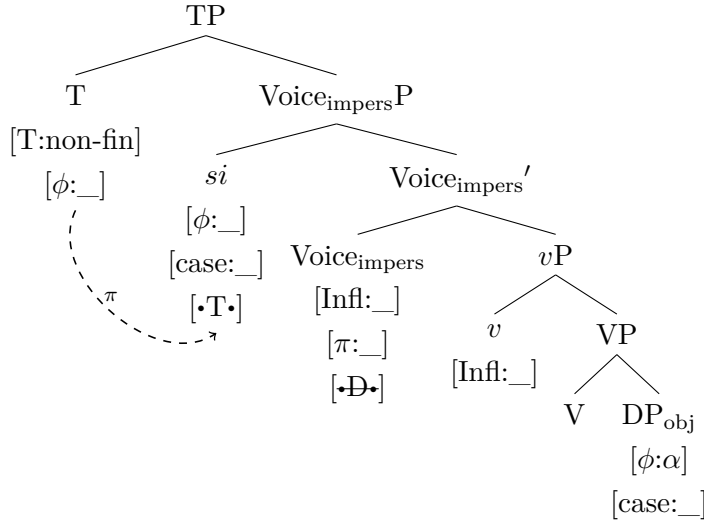
I said that the impersonal clitic *si* cannot cliticize to a non-finite T that does not assign nominative case. The T head agrees for φ-features with the impersonal clitic in Spec,Voice_impers. The result is an unvalued π-feature on T. In addition, V and *v* head-move to T. Successively, v_{restr} enters the derivation, as shown in (106).

(106)

v_{restr}P

v_{restr}
[Infl:__]
[uInfl:non-fin]
[uπ:__]
[•D_{[case:__]}•]

VP

V
modal

TP

T

Voice_impers

v

V   *v*
[Infl:__]

Voice_impers
[Infl:non-fin]
[π:__]
[•D•]

T
[T:non-fin]
[φ:__]

Voice_impers P

si
[φ:__]
[case:__]
[•T•]

Voice_impers'

Voice_impers
[Infl:__]
[π:__]
[•D•]

*v*P

v
[Infl:__]

VP

V   DP_obj
[φ:α]
[case:__]

(a) Infl, (b) π
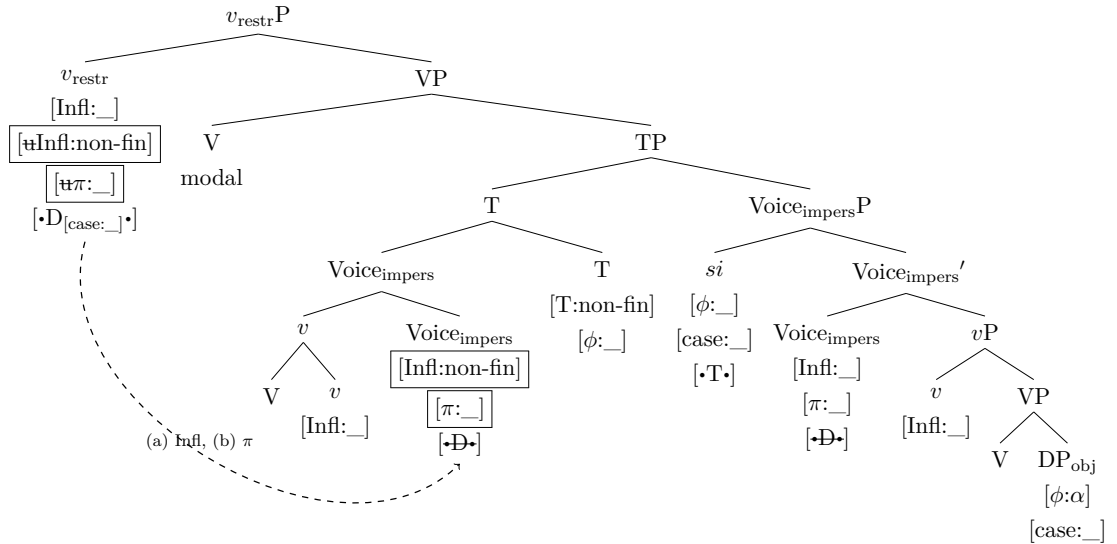
The head v_{restr} probes the complex head T-Voice_impers-*v*-V. The complex head does not contain any valued person feature there, with the consequence that Agree on v_{restr} fails. When Perf enters the derivation, it probes v_{restr} for [Infl] and for [π]. Since v_{restr} bears an unvalued person feature, the person probe on Perf remains unvalued as well, with the consequence that BE will be inserted at Spell-out.

I have just described how the perfect auxiliary is BE both with a *v*P and a TP

complement. However, I think that the TP-derivation poses some problems. In fact, with a TP complement there is a case where Agree on v_{restr} could succeed, leading to HAVE insertion. In the derivation for impersonal root clauses (section §3.3.9.1 in chapter 3), I said that Voice$_{\text{impers}}$ can take as its complement either a defective v or a transitive v. This alternation gives rise to impersonal sentences with and without participle agreement (*Si=sono mangiat-i gli spaghetti* versus *Si=è mangiato gli spaghetti*). In the present discussion, I have offered the derivation with a defective v. However, if the embedded v is transitive, then we would have successful Agree on v_{restr}. In fact, in tree (106), if v contains a valued person feature, this should be found by the probe on Perf.

Moreover, the TP-derivation is possible only under the assumption, adopted here, that the impersonal *si* cannot cliticize to a non-finite T that does not assign nominative case. However, this fact needs to be proved by further evidence. If one rejects this assumption, it is not clear why the clitic should not incorporate into T as soon as it enters the derivation. In fact, I exclude the possibility of excorporation, which should take place in order to move the clitic to a higher T-head under the present assumption that incorporation is triggered by a [•T•]-feature (which becomes deleted after incorporation).

Hence, it might be the case that the TP derivation should be excluded. The TP complement is excluded if the T[T:non-fin] head needed for restructuring cannot take a Voice$_{\text{impers}}$ as its complement. Of course this does not solve the problem, and further research is needed here.

Let me add some comments on the problem of clitic placement. I have proposed that the non-finite T of restructuring cannot host the impersonal clitic. However, I have pointed out that this might be problematic. The obvious explanation for obligatory clitic climbing (i.e., no T in the complement of the modal verb) requires itself an explanation. In contrast, if one assumes that the complement can contain a T head, this must be highly defective. There is evidence for some kind of non-finite T that cannot keep clitics in general and, in particular, the impersonal *si*. First of all, if the restructuring verb is inflected as non-finite, then clitic climbing is obligatory with every clitic, as example (107) shows.[35]

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[35]Standard Italian (and the Northern dialects) exhibits a ban against sequences of non-finite verbs (Italian *Double-Infinitive Filter*) (Longobardi 1978, 1980).

(i)   a.   ?*Giorgio comincia   ad amare   studiare.
                   Giorgio begin.PRS.3SG to love.INF study.INF
                   'Giorgio begins to love to study.'
    b.   Giorgio ama   studiare.
              Giorgio love.PRS.3SG study.INF
              'Giorgio loves to study.'   (Longobardi 1978: 173)

However, restructuring infinitives may violate this condition, but then clitic climbing must apply, as shown in (107). In the analyses by Longobardi (1978) and by Richards (2010), the reasons for obligatory clitic climbing is related to obligatory restructuring as a way to allow the sequence of two non-finite verbs.

Note that auxiliary switch is not an adequate tool to investigate the issue of multiple non-finite verbal forms, differently from clitic climbing. In fact, the presence of the perfect auxiliary determines the realization of the restructuring verb as a past participle, which is located between the two non-finite verbal forms. In (ii), the sentence does not contain an adjacent sequence of non-finite forms. Auxiliary switch is not required in this context.

(107)   a.   Voler=lo   leggere sarebbe   una buona idea.
                want.INF=ACC.3SG.M read.INF be.COND.PRS.3SG a   good idea

          b.   *Voler(e) legger=lo   sarebbe   una buona idea.
                want.INF read.INF=ACC.3SG.M be.COND.PRS.3SG a   good idea
                'Wanting to read it would be a good idea.'

<div align="right">(Cardinaletti and Shlonsky 2004: 521)</div>

This could mean that, if there is a higher non-finite T, either the complement must be a vP, or the lower T head must be weak, in the sense that it cannot host clitics. Since we cannot predict the type of complement of v_{restr} based on the features of the higher T, we have to admit that the numeration cannot contain two heads T[T:non-fin]. This type of weak T would result from a kind of impoverishment rule that acts when the numeration contains a v_{restr} and two T[T:non-fin] heads (in order to explain (107)) or a Voice$_{impers}$ (in order to explain impersonals). One should also make sure that the first T to be merged in the structure is the weak one.

    The other context where a T projection cannot host an impersonal clitic is within a reduced participial clause (Belletti 1990).

(108)   *Mangiat-i=si   gli spaghetti,...
          eat.PRTC-PL.M=IMPERS the spaghetti
          'One having eaten the spaghetti,...'

It has been argued that in the case of reduced clause there is a defective clausal system, in particular regarding the T and C head (Belletti 1990; D'Alessandro and Roberts 2008). Both restructuring and reduced participle clauses may involve the same type of weak T, which cannot host impersonal clitics (but it can host other clitics).

    A last consideration about impersonal clauses concerns some asymmetries in some non-finite contexts between transitive and unergative verbs on the one side, unaccusative and passivized verbs on the other side, as firstly noted by Cinque (1988). In Aux-to-C movement (109-a,b) and in raising (109-c,d), the lower lexical verb cannot be an unaccusative or a passivized verb, when constructed impersonally.

(109)   a.   Ritengo   non esser=si   ancora scoperto   il   vero
                believe.PRS.1SG not be.INF=IMPERS yet   discover.PRTC the true
                colpevole.
                culprit
                'I believe the true culprit has not yet been discovered.'

(ii)   a.   Aver   voluto   andare al   mare ieri   è   stato   un errore.
             have.INF want.PRTC go.INF to.the see   yesterday be.PRS.3SG be.PRTC a   mistake
        b.   Esser volut-i   andare al   mare ieri   è   stato   un errore.
             be.INF want.PRTC-PL.M go.INF to.the see   yesterday be.PRS.3SG be.PRTC a   mistake
             'Having wanted to go to the beach yesterday has been a mistake.'

In addition, the sentence in the perfect tense without a restructuring verb is also fine: *Aver desiderato andare al mare ieri è stato un errore* 'Having desired to go to the beach yesterday has been a mistake.'

    b. *Ritengo   non esser=si   arrivat-i   in sufficiente
       believe.PRS.1SG not be.INF=IMPERS arrive.PRTC-PL.M in sufficient
       anticipo.
       advance
       'I believe that one has not arrived sufficiently ahead of time.'

    c.   Sembra   non esser=si   lavorato   a   sufficienza.
       seem.PRS.3SG not be.INF=IMPERS work.PRTC sufficiently
       'It seems that not enough work was done.'

    d. *Sembra   non esser=si   stat-i   invitat-i   da
       seem.PRS.3SG not be.INF=IMPERS be.PRTC-PL.M invite.PRTC-PL.M by
       nessuno.
       nobody
       'It seems that nobody has invited us.'   (Cinque 1988: 524)

Note that all the chunks of impersonal clauses in (109) are grammatical outside the non-finite contexts (110-a,b). Note also that unaccusative and passivized verbs are fine in the non-finite contexts when the clause is not impersonal (110-c,d).

(110)   a.   Ritengo   che non si=sia   arrivat-i   in
           believe.PRS.1SG that not IMPERS=be.CONJ.PRS.3SG arrive.PRTC-PL.M in
           sufficiente anticipo.
           sufficient advance
           'I believe that one has not arrived sufficiently ahead of time.'

      b.   Sembra   che non si=sia   stat-i
           seem.PRS.3SG that not IMPERS=be.CONJ.PRS.3SG be.PRTC-PL.M
           invitat-i   da nessuno.
           invite.PRTC-PL.M by nobody
           'It seems that nobody has invited us.'

      c.   Ritengo   non essere Maria arrivat-a   in sufficiente anticipo.
           believe.PRS.1SG not be.INF Maria arrive.PRTC-SG.F in sufficient advance
           'I believe that Maria has not arrived sufficiently ahead of time.'

      d.   Maria sembra   non essere stat-a   invitat-a   da
           Maria seem.PRS.3SG not be.INF be.PRTC-SG.F invite.PRTC-SG.F by
           nessuno.
           nobody
           'It seems that nobody has invited Maria.'

According to Cinque (1988), the explanation of the contrasts in (109) has to do with the ability of the T head present in Aux-to-C and raising constructions to assign nominative case. Cinque distinguishes between two separate instances of *si*: the [+arg] *si* of transitive/unergative predicates, and the [−arg]-*si* of unaccusative/passive predicates. The former can be combined with this T and can receive nominative case given its argumental nature, while the latter cannot be combined with this T because it cannot receive nominative case from it.

In my analysis of impersonals (cf. section §3.3.9 in chapter 3) I do not assume two

different instances of *si*. I also do not provide any explanation for the facts in (109), since I do not deal specifically with impersonals in this dissertation. However, I have mentioned these data for two reasons. Firstly, they show that there can be different types of T heads that are either compatible or incompatible with the impersonal *si*. Secondly, the nominative-based explanation for obligatory clitic climbing that I have proposed for impersonals is compatible with this analysis by Cinque (1988). However, note that Cinque's (1988) analysis cannot explain obligatory clitic climbing in restructuring with all types of verbs. I leave here the question open.

Since the TP complement might be problematic also for auxiliary selection (when the lower v is non-defective), we might just adopt the view that the T head that is found in the complement of a restructuring verb cannot select a Voice$_{impers}$, maybe because it could not host the impersonal argument for case reason. Therefore, a structure as in (106) is never generated. If the T head that is the complement of a restructuring verb cannot select Voice$_{impers}$, then one would expect impersonals under restructuring verbs to be completely impossible. This is not the case because the restructuring verb can also select something else, namely a VoiceP (cf. discussion around tree (103)).

5.7.9 Some problematic cases

Since auxiliary selection depends on the size of the complement, it correlates with the position of the clitic, as (111) summarizes.

(111)   a.   TP: HAVE + no clitic climbing
           b. vP: BE + clitic climbing

The correlation between the two transparency effects, however, is not completely coherent among speakers. Indeed, it is possible to find the crossed distribution of the two phenomena: HAVE in the presence of clitic climbing, and BE with the clitic in the lower position.

(112)   a. vP(?): HAVE + clitic climbing
           b.   TP(?): BE + no clitic climbing

I now discuss how these possibilities in (112) arise. At the end of the section, I also provide the results of a small corpus search to show that these cases are very marginal.

5.7.9.1 HAVE + clitic climbing

Starting from the former case in (112-a), we have already seen an example of this clause in (81-b), repeated here again in (113). In section §5.7.3 I said that this clause is ungrammatical. Here, the sign # means that the sentence is accepted by some speakers.

(113)   #Maria ci=ha   voluto   andare ieri.
           Maria there=have.PRS.3SG want.PRTC go.INF yesterday
           'Maria wanted to go there yesterday.'

According to the present analysis, (113) should be ungrammatical because it is a blend of two structures in contradiction: the auxiliary HAVE with an unaccusative verb is compatible only with a TP projection, the clitic in the matrix position only with a vP. Under the assumption that clitic climbing is possible only out of a vP complement, it cannot be the case that Perf successfully probes for person with an unaccusative vP complement, as we saw in section §5.7.3. Perf can successfully copy a person feature in the case of a TP complement, where T is the source for person. However, the position of the clitic shows that there is no T projection embedded. How is it possible to generate a sentence such as (113)?

First of all, let me highlight that the clause in (113) is ungrammatical according to my judgment, and the same is true for Cinque (2004: 153) (where the judgment is: *?) and for Cardinaletti and Shlonsky (2004: 522) (where it is ungrammatical). The sentence has also not been found in the small corpus search that I have performed (section §5.7.9.4). However, this possibility was mentioned by a reviewer during the writing of this dissertation.

My suggestion is that a sentence like (113) is possible for people who do not perform auxiliary switch at all. However, since I have not met any speaker who produces (113), I cannot test this hypothesis. If this is true, for speakers who allow (113) (embedded unaccusative with clitic climbing and HAVE), the pattern can be derived in one of the following ways. It could be the case that in (113) the modal verb is not combined with a v_{restr}, as is standardly the case, but rather with the v of aspectual verbs, with which no auxiliary switch takes place (cf. section §5.9.2). Another explanation is that the order of the probes on v_{restr} is switched or not determined, so that Nested Agree does not force the person probe to reduce its search domain. In this case, the person probe on v_{restr} targets the raising DP in the lower Spec,v.

Note that the explanation for (113) cannot lie in the clitic ci. One might think that the clitic ci could bear a valued person feature for the speakers who produce (113), and hence be a possible goal for Agree. However, as I have illustrated in the previous derivations, the clitic is skipped because of Nested Agree. Moreover, in the sentence corresponding to (113) with BE, i.e. (81-a) *Maria ci=è volut-a andare ieri*, the source of BE is not the lack of the person feature on the clitic ci, but rather the defectiveness of v, as we saw in section §5.7.3.

It should also be noted that there is no alternation or optionality for auxiliary selection with clitics that are not possible controllers of Agree, such as dative clitic pronouns. Differently from (113), the auxiliary HAVE is impossible when the lexical verb is unaccusative and a dative clitic moves out of the vP complement, as shown in (114).

(114) a. *Il bambino gli=ha   voluto   scappare   dalla
           the child   DAT.3SG.M=have.PRS.3SG want.PRTC run.away.INF from.the
           vista.
           sight

       b. Il bambino gli=è   voluto   scappare   dalla
           the child   DAT.3SG.M=be.PRS.3SG want.PRTC run.away.INF from.the
           vista.
           sight
           'The child wanted to run away from his sight.'   (A. Cardinaletti, p.c.)

The same can be said with the partitive clitic *ne*.

(115) a. *Di ragazze, ne=hanno   voluto/-e   venire   molte.
           of girls   of=have.PRS.3PL want.PRTC/-PL.F come.INF many

       b. Di ragazze, ne=sono   volut-e   venire   molte.
           of girls   of=be.PRS.3PL want.PRTC-PL.F come.INF many
           'Of girls, many of them wanted to come.'

This might be evidence for a special status of the locative clitic *ci* in (113). Given the
ungrammaticality of HAVE in presence of clitic climbing with other clitics than *ci* in (114)
and (115), I conclude that the combination HAVE + climbing with unaccusative verbs is
indeed not possible. A sentence such (113) might be generated if the complement is a TP
and the clitic *ci* is base-generated in a higher position, namely outside the complement
TP.[36]

5.7.9.2 BE + no clitic climbing

Moving on to the second exception in (112-b), the auxiliary BE can also appear with the
clitic in the lower position. This is shown in sentence (116), which is accepted by some
speakers.

(116) #Maria è   volut-a   andar=ci   ieri.
        Maria be.PRS.3SG want.PRTC-SG.F go.INF=there yesterday
        'Maria wanted to go there yesterday.'

Such sentences are marginally found in the corpus search (5.6%) and are also discussed in
the literature. Cardinaletti and Shlonsky (2004) consider the sentence (117), which is the
equivalent of (116), degraded when the auxiliary is BE.

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[36]The base-generation hypothesis might be favored by the different functions that the clitic *ci* can
perform. According to Cruschina (2012), it is a pro-argument in the existential construction, a pro-predicate
in the inverse locative and deictic locative construction, a lexicalized item in the presentational construction
(for this last point, cf. also Russi 2008; Bentley 2011).

(117) Avrei/?Sarei   voluto   andar=ci   con Maria.
       have/be.COND.PRS.1SG want.PRTC go.INF=there with Maria
       'I would have liked to go there with Maria.'

Let me briefly address the analysis by Cardinaletti and Shlonsky (2004) since it is relevant for the discussion of the present case and of the previous one in section §5.7.9.1. Their main proposal is that there are two clitic positions available: the "lexical" position and the "clausal" position, corresponding respectively to the lower position within the VP and to the higher position at the CP level. A sentence such as (113) (HAVE and clitic climbing) is excluded because it is considered not to involve restructuring, as the lack of auxiliary switch shows. If the modal verb is not used as a restructuring verb, it selects for a CP. Hence, the clitic must stay in the lower position (which is either the lexical position, or the clausal position, found in correspondence of the first CP boundary). In this case, the lexical position and the clausal position are not distinguishable on the surface: the former is located in correspondence of the lexical verb, the latter is on the first CP boundary, which is immediately after the modal verb. In (118-a), equivalent to (113), the clitic is placed in a non-licit position, since the clausal position is located in correspondence of the lower CP boundary.

(118) a. *[CP Maria ci=ha voluto [CP andare ieri]]
       b.   [CP Maria ha voluto [CP [VP andar=ci ieri]]]
       c. ?[CP Maria è volut-a [VP andar=ci ieri]]
       d.   [CP Maria ha voluto [CP andar=ci ieri]]
       e.   [CP Maria ci=è volut-a [VP andare ieri]]

In (118-b,c), the clitic is located in the lexical position (the question mark in (118-c) is due to the lack of co-occurrence between clitic climbing and auxiliary switch). In (118-d,e), the clitic is located in the clausal position, which is the lower CP in the former case and the matrix CP in the latter case (note the corresponding change in auxiliary selection). The structures in (118-b,d) correspond to the same surface string.

According to this analysis, if both the lexical and the clausal position are available, both sentences (118-c) and (118-e) can be generated. In (118-c), equivalent to (116), the clitic is located in the lexical position, whereas in (118-e) the clitic is in the clausal position. However, I think that this account does not explain why (118-c) is more marginal than (118-e) (respectively, sentences (116) and (81-a)), unless one assumes that the clausal position is in general preferred to the lexical position for clitics. In Cardinaletti and Shlonsky (2004), the marginality of BE without clitic climbing is justified by the descriptive generalization that there is a preference for clitic climbing when BE is selected. Even though auxiliary switch and clitic climbing are independent syntactic processes and can take place one without the other one, they should correlate. I do not consider this conclusion satisfactory for the following reason. Either these phenomena are considered

independent and optional signs of obligatory restructuring configurations, as Cinque (2004) claims; or if clitic climbing is used as a test for restructuring as in Cardinaletti and Shlonsky (2004), then it remains unclear why the two phenomena could be independent.

Considering now the analysis developed in this dissertation, I predict that sentences such as (116) and (118-c) should not be possible, because they correspond to two conflicting structural requirements, as is the case for the similar sentence in (113) and (118-a). In (116), the auxiliary BE can arise only with a vP complement, but the position of the clitic indicates a TP complement. How, then, is it possible to generate (116), repeated again in (119)?

(119)   #Maria è   volut-a   andar=ci   ieri.
        Maria be.PRS.3SG want.PRTC-SG.F go.INF=there yesterday
        'Maria wanted to go there yesterday.'

I aim at describing the emergence of BE in (119) in a derivational way. In particular, it can be due either to a defective v or to defective intervention of the clitic. I present here both solutions, although I argue that the auxiliary BE in (119) is due to the presence of a defective v.

The first solution is as follows. People who produce (119) use a defective v_{restr} (i.e., one without [uπ:_]) for selecting a TP when the embedded v is defective, instead of the non-defective v_{restr}.[37]

(120)   <u>defective</u> v_{restr} - T - defective v

Crucial evidence for having a defective v_{restr} in (119) is participle agreement, which is present independently of the position of the clitic. This means that the DP$_{sbj}$ is not raised by the EPP-feature, as it happens with a fully-fledged v_{restr}, but rather by an edge feature, which is possible with a defective v_{restr}. It follows that v_{restr} can be defective even when it selects a TP, if the lower v is defective.

Here a further assumption is necessary, which does not make any difference in the analysis so far. Defective v_{restr} lacks the person probe, like the unaccusative v (cf. Table 5.3 and relevant discussion in section §5.6.2). If this is true, the information-chain between the person feature on the embedded T and matrix Perf (described in section §5.7.7) is interrupted by the lack of a person probe on v_{restr}. After Perf has agreed with defective v_{restr} for [Infl], it probes it for person but it does not find any value. Since the PIC prevents Perf to look inside v_{restr}P, Agree on Perf fails. Consequently, BE must be inserted even with a TP in complement, as shown in (119). In addition, note that such a type of defective v_{restr} is needed for motion restructuring verbs, whose perfect auxiliary is invariably BE, as

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[37]I am not sure if this happens categorically, meaning that some speakers always perform auxiliary switch, or if the change is optional. I have noticed that some speakers tend to produce auxiliary switch without optionality when the embedded predicate is a BE-verb. Hence, it could be that some people always enable selection of restructuring verbs with a defective v_{restr} or with a raising v when the complement is defective.

shown in section §5.9.2.

Hence, people who allow for (119) have a different selectional requirement of v_{restr} (a defective one, equipped only with [uInfl:non-fin] and [Infl:_]), which always leads to BE insertion, independently of the size of the complement (and of the clitic placement). It is noteworthy that the sentence in (119), although grammatical, is not the standard one (it being the one with HAVE: *Maria ha voluto andar=ci ieri*). This is due to the fact that it involves a violation of the matching requirement proposed in section §5.6.2 and repeated here.

(121) $v_{\text{restr}}[\cdot D_{[\text{case:\_}]}\cdot] \leftrightarrow v_{\text{restr}}[\cdot T\cdot] \vee v_{\text{restr}}[\cdot v^{*}\cdot]$

With the term *violation*, I do not refer to a constraint-based theory of grammar. I simply mean that the grammar of some speakers does not contain the matching requirement in (121), but rather the version in (122).

(122) $v_{\text{restr}}[\cdot D_{[\text{case:\_}]}\cdot] \leftrightarrow v_{\text{restr}}[\cdot v^{*}\cdot]$

Given the featural correlation in (121) v_{restr} should contain $[\cdot D_{[\text{case:\_}]}\cdot]$ because it also contains the selectional feature $[\cdot T\cdot]$. If this condition holds, the generated sentence is the standard *Maria ha voluto andar=ci ieri* with HAVE. Some people ignore the condition in (121) and have instead the matching requirement in (122). They use the defective v, producing to the less frequent sentence in (119) with BE, *Maria è volut-a andar=ci ieri.*

This proposal constitutes a "lexical" account for auxiliary switch without clitic climbing, and for participle agreement. The selectional rule in (120), expressed via the matching requirement in (122), plus the lack of a person probe on defective v_{restr} can account for the data in (116).

Let me now present the alternative solution, which makes use of defective intervention (Chomsky 2000). With this term, I mean the scenario where a goal with an unvalued matching feature cannot value a probe, but it prevents it from undergoing agreement with a lower goal with a valued matching feature (c-commanded both by the probe and by the intervener). Note that this definition refers to a narrow sense of defective intervention, and does not cover all cases of defective intervention, because in general the intervener can also bear valued features. The auxiliary BE in (119) could emerge if the clitic *ci* bears an unvalued π-feature and leads to defective intervention (cf. section §4.4.6.1 in chapter 4 for the idea of featurally defective clitics).

The tree in (123) shows the complex head T after (i) cliticization and (ii) head movement.

(123)
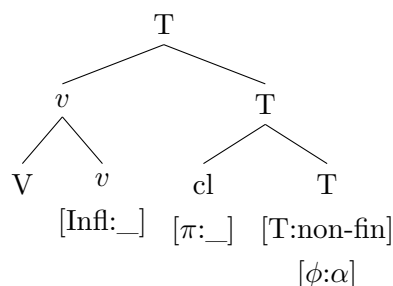
The head in (123) projects a TP that is selected by the head v_{restr} in sentence (116). After v_{restr} has probed v for [Infl], it probes it again for person. v is not a relevant goal for the person probe. Hence, v_{restr} goes on with the search, starting from v. It encounters first of all the clitic, with its unvalued person feature, which satisfies the probe, although it cannot value it. The feature on T is not reached at all, since the clitic has intervened as a possible goal (assuming that the clitic c-commands T, and vice versa, and that intervention is defined in terms of c-command, and not in terms of asymmetrical c-command). Hence, the clitic ci on T leads to defective intervention, and, consequently, to BE insertion.[38]

The relevant issue for this approach is why the clitic ci does not always intervene, but only for some speakers and in some occurrences. There could be different reasons here. First of all, the clitic could be unmarked for the person feature for some speakers, so that it is "invisible" for Agree. Secondly, I said that in complex heads the features are available all at the same time on the maximal projection. The head v_{restr} can probe the whole T-complex (i.e., the uppermost segment of it), so that the clitic cannot be an intervener. This could happen for most speakers, but for someone the features on the complex head could be organized with c-command structure, as proposed here.

However, even with this solution we need a defective v_{restr} in order to get participle agreement (as far as the [•D•] feature is concerned). Consequently, this solution is less optimal than the first one.

5.7.9.3 Reflexive clauses

In the previous subsections, I have sketched a solution for the clauses (113) and (116), corresponding to the problematic cases in (124).

(124) a. vP(?): HAVE + clitic climbing
       b. TP(?): BE + no clitic climbing

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[38]This analysis is not compatible with an account of clitic movement à la Matushansky (2006), where the clitic is located in the specifier of T in the syntax and it head-moves to T only in the morphology. In that case, the clitic would be skipped due to Nested Agree. Note also that under Matushansky's (2006) analysis, head movement in general takes place in the morphology: this is not compatible with the analysis used here for restructuring where the complex head has already been created when v_{restr} probes. This idea also excludes an analysis where T bears itself an instance of the Infl-feature, which makes T the only goal for v_{restr} with the exclusion of v: T should not be probed first.

The possibility of having variability in auxiliary selection with respect to clitic climbing, however, changes when the clitic is the reflexive pronoun.

Let us start with the scenario in (124-a). In presence of clitic climbing, if the clitic is the reflexive pronoun, there is no alternation for any speaker of Standard Italian and only BE is possible.

(125)   a. *Maria si=ha   voluto   lavare   ieri.
                Maria REFL.ACC.3SG=have.PRS.3SG want.PRTC wash.INF yesterday

            b. Maria si=è   volut-a   lavare   ieri.
                 Maria REFL.ACC.3SG=be.PRS.3SG want.PRTC-SG.F wash.INF yesterday
                 'Maria wanted to wash herself yesterday.'

As far as (125-a) is concerned, I have derived the comparable sentence (113) (HAVE + clitic climbing of ci + unaccusative verb) by resorting to base-generation of the clitic ci in a higher position. This possibility is excluded for the reflexive clitic pronoun, since it needs to be merged in an argumental position in order to receive a Theta-role and case. For this reason, the sentence in (125-a) is impossible also for people who produce (113). The only possible realization of Perf, when the complement is a vP, is BE, as shown in (125-b).

Turning now to the case in (124-b), if the reflexive clitic stays in the lower position, we find again some optionality for the auxiliary for some speakers.

(126)   a. Maria ha   voluto   lavar=si   ieri.
                Maria have.PRS.3SG want.PRTC wash.INF=REFL.ACC.3SG.F yesterday

           b. #Maria è   volut-a   lavar=si   ieri.
                Maria be.PRS.3SG want.PRTC-SG.F wash.INF=REFL.ACC.3SG.F yesterday
                'Maria wanted to wash herself yesterday.'

First of all, it should be noticed that the version with BE (126-b) is considered ungrammatical for most speakers (including myself), differently from unaccusative predicates, where BE without clitic climbing (116) is accepted more easily. The corpus search in section §5.7.9.4 also returned very few tokens for this type of clause (0.73%, or less). Therefore, it might be the case that the clause in (126-b) is not possible at all, and the grammar should not be able to generate it.

However, if (126-b) is considered grammatical, it should be explained by means of a defective v_{restr}, as I have proposed for unaccusative verbs in the example (116). The defectiveness of v_{restr} for (126-b) is crucial, since there is participle agreement in presence of a TP complement. That the complement is a TP is shown by the position of the clitic. As I have already discussed in relation to example (116), for some speakers it should be possible to have a defective v_{restr} that selects a TP, via the matching condition in (122). The defective v_{restr} should also be characterized by the lack of the person probe. For unaccusative verbs (116), this defective v_{restr} leads to BE insertion even in presence of a TP. Similarly, for reflexives verbs (126-b), this defective v_{restr} causes BE insertion as well.

Note, however, that the scenario with reflexive verbs is a bit more complex than with

unaccusative verbs, and exactly from this complication could stem the less acceptable status of (126-b) with respect to (116). In fact, the rule proposed in (120), repeated here again in (127-a), cannot be straightforwardly applied to the case of reflexives.

(127)   a.   <u>defective v_{restr}</u> - T - defective v (unaccusative)

           b.   <u>defective v_{restr}</u> - T - non-defective v (reflexive)

In the present case, the lower v is non-defective, since it is a transitive v. This means that we cannot consider the rule in (127) as the result of the spread of defectiveness. The configuration in (127-b) is generated if speakers violate the matching condition on v_{restr}, repeated here again, twice.

(128) $v_{\text{restr}}[\bullet D_{[\text{case:\_}]}\bullet] \leftrightarrow v_{\text{restr}}[\bullet T \bullet] \lor v_{\text{restr}}[\bullet v^* \bullet]$

This means that the grammar of some speakers lacks the rule in (128), for both featural co-occurrences ($[\bullet D_{[\text{case:\_}]}\bullet] \leftrightarrow [\bullet T\bullet]$, and $[\bullet D_{[\text{case:\_}]}\bullet] \leftrightarrow [\bullet v^*\bullet]$). If speakers ignore the condition in (128), a TP complement containing a non-defective v can be selected by a defective v_{restr} instead of by a non-defective v_{restr}. This implies two violations of the condition (128), since v_{restr} c-commands both a T head and a v^* head. Hence, the clause generated by this derivation is less well-formed than the clause generated with only one violation of the condition, namely the one with the unaccusative verb. I repeat here in (129) the relevant sentences: both are marked, but (129-a) is better than (129-b).

(129)   a. #Maria è   volut-a   andar=ci.

            Maria be.PRS.3SG want.PRTC-SG.F go.INF=there

            'Maria wanted to go there.'

                                      *$(v_{\text{restr}}[\bullet D_{[\text{case:\_}]}\bullet] \leftrightarrow v_{\text{restr}}[\bullet T\bullet])$

          b. #Maria è   volut-a   lavar=si.

            Maria be.PRS.3SG want.PRTC-SG.F wash.INF=REFL.ACC.3SG.F

            'Maria wanted to wash herself.'

              *$(v_{\text{restr}}[\bullet D_{[\text{case:\_}]}\bullet] \leftrightarrow v_{\text{restr}}[\bullet v^*\bullet]) \land$ *$(v_{\text{restr}}[\bullet D_{[\text{case:\_}]}\bullet] \leftrightarrow v_{\text{restr}}[\bullet T\bullet])$

This solution seems to derive the data in (126-b), and also the difference in grammaticality between (116) and (126-b) (equivalent to (129-a,b)). Nonetheless, there is still a remaining problem. The question here is why the defective v_{restr} can optionally be combined with a transitive verb only when the object is a reflexive clitic, but not with other transitive predicates. A grammar that lacks both $[\bullet D_{[\text{case:\_}]}\bullet] \leftrightarrow [\bullet T\bullet]$, and $[\bullet D_{[\text{case:\_}]}\bullet] \leftrightarrow [\bullet v^*\bullet]$, should be able to generate (130-a), while a grammar that lacks only $[\bullet D_{[\text{case:\_}]}\bullet] \leftrightarrow [\bullet v^*\bullet]$ could generate (130-b). However, the clauses in (130) are ungrammatical.

(130)   a. *Maria è   voluto/-a   mangiar=la.

            Maria be.PRS.3SG want.PRTC/-SG.F eat.INF=ACC.3SG.F

b. *Maria l=è voluto/-a mangiare.
   Maria acc.3sg.f=be.prs.3sg want.prtc/-sg.f eat.inf
   'Maria wanted to eat it.'

I do not have any answer to this question. As far as (130-b) is concerned, I suppose that this fact could be modeled if the matching requirement in (128) is not flat, but rather hierarchically organized. The impossibility of violating only the v*-part of the matching requirement in (128), allowing the selection of defective v_{restr} also with transitive vP complement could suggest that T plays a role in determining the possibility of violation of the matching condition. There could be a cline of defectiveness also for the T head. However, I leave this issue for further research.

For the ungrammaticality of (130-a), I do not have any specific proposal. However, there is an alternative solution to what I have sketched so far, under which (130-a) is not generated.

The alternative solution for deriving the clause in (126-b) makes use of a standard v_{restr} and exploits the different features on the complex head. The tree in (131) shows the complex head T (corresponding to the complement of the modal verb in the sentences in (126)) after (i) cliticization and (ii) head movement.

(131)

```
                    T
                 ___|___
                /       \
               v         T
             __|__     __|__
            /     \   /     \
           V      v  cl      T
        [Infl:__] [π:β] [T:non-fin]
         [π:__]          [φ:β]
```
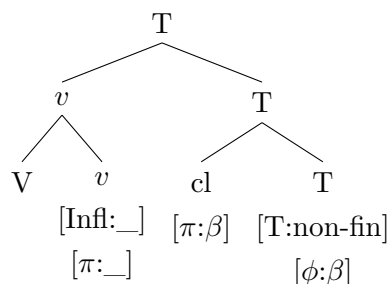
The head in (131) projects a TP that is selected by a non-defective v_{restr}. This heads probes the lower v for [Infl], and then for person. In general, the person probe sees all features on the complex heads in (131) and picks the valued one (or all person features), as I have proposed in section §5.7.4 and illustrated in section §5.7.6. Hence, the person probe on v_{restr} copies the valued person feature on T, which will be copied by Perf later in the derivation, leading to HAVE insertion. The resulting sentence is (126-a). The variation between (126-a) and (126-b) is derived as follows. For some speakers, the person probe on v_{restr} targets the unvalued π-feature on v, instead. Valuation on v_{restr} fails, and it also fails on Perf, causing BE insertion. This leads to the marginal sentence (126-b). This possibility can be due to the fact that for some speakers not all features of the complex heads are visible at the same time, but rather the probe sees first of all the π-feature on v, which leads to defective intervention.

This solution clarifies why the possibility of BE without clitic climbing is possible for reflexive clauses, but not for canonical transitive verbs (cf. (130-a)). In the latter, both

the person feature on the lower v and on T are valued, and valuation on v_{restr} cannot fail. The problem of this solution is that the issue of participle agreement remains unexplained, which is instead accounted for with the use of a defective v_{restr}. In fact, a normal v_{restr} would raise the DP via [•D•] and not via EF. Again, I do not have a clear answer to this puzzle and I leave it for further research.

As a final remark, let me highlight that the difficulty with deriving the sentence (126-b), with BE and low placement of the reflexive clitic pronoun, does not necessarily imply that the present theory does not work properly. In fact, it is expected that a correct theory cannot generate ungrammatical examples, as I think these are, or that it may need some further refinements in order to the derive the more peripheral and marginal cases, as these of course are.

5.7.9.4 Corpus search

Given the dubious grammaticality of examples (113), (116), (125-a) and (126-b), I report here the results of a corpus search performed on 20/02/2020 on the online corpus of *Repubblica*, freely available at *https://corpora.dipintra.it*. The corpus contains texts from Italian newspapers, for a total of approximately 380 millions tokens.

The search is not intended to be a comprehensive computational study in any way. It was only performed in order to get a preliminary overview about the relevance of the problematic data discussed in section §5.7.9. Further research should confirm these findings.

The corpus search has been conducted as follows. For the clitic *ci*, I have looked for occurrences of the verb HAVE and BE in the present tense of the indicative mood and of the conditional mood, followed by a participle with or without agreement of the verb *volere*, *potere* and *dovere*, followed by one of the unaccusative verbs of a small sample (*andare* 'go', *passare* 'come by', *venire* 'come', *tornare* 'come back', *essere* 'be'). I located the clitic *ci* once on the lexical verb (lack of clitic climbing), once on the auxiliary (clitic climbing). Here in (132) are some examples of the strings that I searched for.

(132)   a.   "ci" ("sono" | "sei" | "è" | "siamo" | "siete" | "sono") "volut.|potut.|dovut." "andare"

         b.   "ci" ("ho" | "hai" | "ha" | "abbiamo" | "avete" | "hanno") "volut.|potut.|dovut." "andare"

         c.   ("sono" | "sei" | "è" | "siamo" | "siete" | "sono") "volut.|potut.|dovut." "andarci"

         d.   ("ho" | "hai" | "ha" | "abbiamo" | "avete" | "hanno") "volut.|potut.|dovut." "andarci"

After the search, I have manually checked the tokens, since the form *ci* also corresponds to the dative/accusative pronoun for first person plural. I have removed the occurrences where the clitic *ci* is the dative/accusative clitic pronoun and not the locative, and the tokens

where the lexical verb is not constructed as an unaccusative (for instance, cases where *andare* is a restructuring motion verb). Table 5.4 summarizes the results of the corpus search for the locative clitic *ci* in dependence on an unaccusative verb in a restructuring configuration. I put into brackets the total number of tokens returned by the search, whereas the number of tokens after the manual annotation is outside the brackets. The percentages are calculated on the numbers outside the brackets.

	aux	tense	cl position	token	percentage
(a)	BE	prs	V=CI	4	1.72%
(b)	BE	cond	V=CI	9	3.88%
(c)	HAVE	prs	V=CI	33 (352)	14.23%
(d)	HAVE	cond	V=CI	186 (352)	80.17%
(e)	BE	prs	CI=aux	15 (168)	51.72%
(f)	BE	cond	CI=aux	14 (65)	48.28%
(g)	HAVE	prs	CI=aux	0 (106)	0%
(h)	HAVE	cond	CI=aux	0 (25)	0%

Table 5.4: Corpus search on the clitic *ci*.

The results for the locative clitic *ci* are as follows. When the lexical verb is unaccusative and clitic climbing does not take place, I have found 13 occurrences of BE (rows (a), (b)), against 219 cases of HAVE (rows (c), (d)). Hence, the modal auxiliary is BE in 5.6% of the total cases (1.72% + 3.88%). The sentence (116) belongs to this set of data. In contrast, I have not found any single sentence with HAVE and clitic climbing, as in sentence (113), (rows (g), (h)). In presence of clitic climbing and unaccusative lexical verb, auxiliary switch is obligatory and the auxiliary is BE in 100% of the cases.

Even though the lack of occurrences of a sentence such as (113) (row (g), (h)) does not constitute decisive evidence for excluding it, it shows that this is not the canonical realization for such a sentence. The same can be said for a sentence such as (116) (row (a), (b)), which is quite uncommon, but still possible. Hence, I think that the analysis of auxiliary selection in restructuring should mainly account for the emergence of the data in rows (c), (d), (e), (f), as this dissertation does. The analysis can be then extended to account for (a), (b), corresponding to (116), and to (g), (h), corresponding to (113), but these are peripheral cases.

I have also performed a corpus search for the reflexive clitic pronoun. The reflexive clitic pronoun exhibits the inflectional form *mi*, *ti*, *si*, *ci*, *vi*. The third person reflexive clitic is homophonous with the impersonal clitic *si*. In the first inquiry, I have restricted the query to first and second person pronouns, in order to exclude impersonal *si*. The form of the query was "("mi" "sono" | "ti" "sei" | "ci" "siamo" | "vi" "siete") "volut.|potut.|dovut." ".*re"". I have manually excluded the occurrences containing the locative clitics *ci* and *vi* (homophonous with the reflexive pronouns for first and second person plural), and those without a lexical verb (i.e., cases where the modal verb is followed by a word that is not a verb). The results are summarized in Table 5.5. Again, the numbers in brackets refer to

the total of tokens before manual annotation, whereas the number of relevant occurrences is outside the brackets.

	aux	tense	cl position	tokens	percentage
(a)	BE	prs	V=SI	0	0%
(b)	BE	cond	V=SI	0	0%
(c)	HAVE	prs	V=SI	362	59.25%
(d)	HAVE	cond	V=SI	249	40.75%
(e)	BE	prs	SI=aux	172	69.35%
(f)	BE	cond	SI=aux	76	30.65%
(g)	HAVE	prs	SI=aux	0 (4)	0%
(h)	HAVE	cond	SI=aux	0 (1)	0%

Table 5.5: Corpus search on the reflexive clitic pronoun (1st and 2nd person).

This query shows a very neat result. If the lexical verb is reflexive, the modal auxiliary must be HAVE when the clitic does not climb (rows (c) and (d), 100% of the cases), and BE in presence of clitic climbing (rows (e) and (f), 100% of the cases). Other cases have not been found in the corpus search. Again, this does not constitute evidence against sentences such as (125-a) and (126-b), but it is a clear sign of their markedness.

I have also performed a second query, extended to third person reflexive pronouns. I report the result of the query that includes third person reflexive *si* in Table 5.6. I have manually checked the tokens corresponding to sentences (126-b) (rows (a) and (b)) and (125-a) (rows (g) and (h)), by excluding the impersonal *si*, and the locative *ci* and *vi*. However, I have only controlled the tokens corresponding to rows (a), (b), (g) and (h), since these are the relevant cases for this dissertation. This means that the tokens in rows (c), (d), (e) and (f) may also include occurrences of impersonal *si* or of locative clitics. In brackets is the total of tokens, whereas the number outside the brackets indicates the relevant occurrences. I also calculated the percentage of cases (a), (b), (g) and (h), by referring to the total occurrences before manual annotation. This means that the percentages do not correspond to the real incidence of these sentences on the total. However, if one assumes that the sentences to be excluded are uniformly distributed across all the types in the table, then the percentages should be reliable.

As Table 5.6 shows, I have not found any token with HAVE and the reflexive clitic in the climbing position (rows (g), (h)). This is expected, if example (125-a) is indeed ungrammatical. Instead, the search returned only few occurrences of BE with the clitic in the lower position (12 in total), as shown in rows (a), (b). There is very little evidence of BE without clitic climbing: about 0.73% of the cases (but this percentage is calculated also on cases to be excluded, as I said). It seems that, for transitive verbs with reflexive pronouns, HAVE with a vP (clitic climbing) should be excluded, whereas BE with a TP (no clitic climbing) is possible but marked.

This small query does not provide conclusive evidence for the claim that the problematic sentences are "mistakes" that should not be generated. It just aims at showing that these

	aux	tense	cl position	tokens	percentage
(a)	BE	prs	V=SI	4 (20)	0.38%
(b)	BE	cond	V=SI	8 (18)	0.35%
(c)	HAVE	prs	V=SI	2854	
(d)	HAVE	cond	V=SI	2332	
(e)	BE	prs	SI=aux	3885 (4218)	
(f)	BE	cond	SI=aux	2211 (2330)	
(g)	HAVE	prs	SI=aux	0 (223)	0%
(h)	HAVE	cond	SI=aux	0 (2)	0%

Table 5.6: Corpus search on the reflexive clitic (including the impersonal clitic).

hybrid sentences are marginal cases that must be due to other factors, which need to be further investigated. The clear conclusion here is that these clauses are not as natural and frequent as the sentences that are normally generated by the process of auxiliary selection via person-Agree are.

5.8 Evidence for different sizes of the clause

In this section, I provide evidence for the claim that restructuring verbs can take complements of different sizes. Sentences with transparency effects behave differently from sentences without them, as far as other syntactic operations are concerned. For clitic climbing, the data can be found in Cinque (2004); de Andrade and Bok-Bennema (2017). A sentence without clitic climbing can be affected by more operations as compared to a sentence where clitic climbing takes place. An example is cleft sentence formation, which is impossible in the presence of clitic climbing.

(133) a. È   proprio [a parlar=ti   dei   suoi problemi]ᵢ che
           be.PRS.3SG really   to talk.INF=DAT.2SG of.the his   problems that
           verrà   tᵢ.
           come.FUT.3SG

       b. *È   proprio [a parlare di   questi problemi]ᵢ che
           be.PRS.3SG really   to talk.INF of.the his   problems that
           ti=verrà   tᵢ.
           DAT.2SG=come.FUT.3SG
           'It's really to talk about his problems that he'll come to you.'

                                                                    (Cinque 2004: 134)

Cinque (2004) relates the difference in grammaticality between cleft sentences with clitic climbing and without clitic climbing to other independent factors. The reason for the contrast in (133) is supposed to lie in the so-called *Null Complement Anaphora* (Zubizarreta 1982; Depiante 1998). The stranded predicate in (133-a) supports the Null Complement Anaphora, but the one in (133-b) cannot do so.

In contrast, I would like to propose that the contrast in (133) (and other similar cases) is due to a difference in the syntactic structure. In particular, the sentence without clitic climbing contains a TP complement, which can undergo operations such as cleft movement. The sentence with clitic climbing contains, instead, a vP complement, which is not a licit undergoer for some types of dislocation.

I now illustrate this idea in more details. We saw that in Standard Italian clitics do not occupy the surface position of canonical arguments, but they must move to T.

(134)   a.   Mangio   la   mela.
             eat.PRS.1SG the apple

        b.   *Mangio   la.
             eat.PRS.1SG ACC.3SG.F

        c.   La=mangio.
             ACC.3SG.F=eat.PRS.1SG
             'I eat it.'

As shown in (134-c), in root clauses the clitic is located on the finite verb. This means that it incorporates into T (for analyses along this line, cf. Kayne 1989b, 1994; Sportiche 1996; Belletti 1999). Similarly, in restructuring, the clitic must be located on a T head. In this chapter, I have argued that clitic climbing applies when the complement of the restructuring verb does not contain any T head into which the clitic can incorporate. If there was one, this would mean that excorporation is possible, which should not be the case (Baker 1988; Roberts 1991). In contrast, when the clitic remains on the lower lexical verb, it is because the complement contains a T position. Hence, I take clitic climbing as a clear sign for the absence of a T head in the embedded domain. The two structures are as follows.

(135)   a.   With clitic climbing: vP complement
             [$_{TP}$ cl$_i$ + T [$_{v_{restr}P}$ v_{restr} [$_{VP}$ modal V [$\boxed{_{vP}}$ v [$_{VP}$ V t$_i$]]]]]
        b.   Without clitic climbing: TP complement
             [$_{TP}$ T [$_{v_{restr}P}$ v_{restr} [$_{VP}$ modal V [$\boxed{_{TP}}$ cl$_i$ + T [$_{vP}$ v [$_{VP}$ V t$_i$]]]]]]

The idea is that when a restructuring clause with clitic climbing cannot undergo a particular syntactic process, while the corresponding sentence without clitic climbing does, it is because this syntactic process cannot affect a vP constituent.

Bearing this in mind, I will now propose that the same contrast between TP and vP is coherently indicated by the lack or the presence of auxiliary switch. In order to see this, we have to consider those restructuring clauses where the embedded lexical verb is a BE-verb (unaccusative, reflexive, and impersonal verbs). In these cases, when the modal auxiliary is HAVE, auxiliary switch has not applied; when it is BE, auxiliary switch has taken place. Given the analysis that I have proposed in this chapter, auxiliary switch is found with vP complements (cf. sections §5.7.2, §5.7.3, §5.7.8), whereas with a TP

complement the perfect auxiliary is realized as HAVE (cf. sections §5.7.6, §5.7.7). This is illustrated in (136).

(136)   a.   With auxiliary switch (=BE): vP complement

       [$_{\text{PerfP}}$ Perf[uπ:__] [$_{v_{\text{restr}}\text{P}}$ v_{restr}[uπ:__] [$_{\text{VP}}$ modal V [$\boxed{v\text{P}}$ v [$_{\text{VP}}$ VP]]]]]]

   b.   Without auxiliary switch (=HAVE): TP complement

       [$_{\text{PerfP}}$ Perf[uπ:α] [$_{v_{\text{restr}}\text{P}}$ v_{restr}[uπ:α] [$_{\text{VP}}$ modal V [$\boxed{\text{TP}}$ T[uπ:α] [$_{v\text{P}}$ v [$_{v\text{P}}$ VP]]]]]]]

There are many cases where a restructuring sentence with HAVE is grammatical when undergoing further syntactic operations (which I will discuss in this section), while the corresponding sentence with BE is not. I argue that this difference in grammaticality is due to the different sizes of the clause. In particular, when the auxiliary is HAVE, the complement is big enough to undergo certain operations ("big enough" meaning, for example, that it contains the relevant heads, such as T). In contrast, when the auxiliary is BE, the application of the same operations generally leads to ungrammaticality. This dissimilarity arises because the complement is not big enough (as the auxiliary BE suggests) for being a licit undergoer of those syntactic operations.

In what follows, I discuss passive complements, perfect tense complements, ellipsis, cleft sentences, relativization, topicalization and clausal negation. Some data on auxiliary selection are taken from the previous literature; others (here without reference) are mine. My conclusion is that all these data and the similar data about clitic climbing in Cinque (2004) can simply be explained by assuming the difference in size.

First of all, let us look at passive complements. If the restructuring verb takes a passivized predicate as its complement, then it is impossible to have auxiliary switch. I repeat here again the data presented in (23). Similar data can be found in Rizzi (1982: 45), Burzio (1986: 364-365).

(137)   a.   Dopo la   festa, Teresa ha   voluto   essere portat-a
       after   the party Teresa have.PRS.3SG want.PRTC be.INF bring.PRTC-SG.F
       a   casa   dal suo ragazzo.
       at home   by   her boyfriend

   b.   *Dopo la   festa, Teresa è   volut-a   essere
       after   the party Teresa be.PRS.3SG want.PRTC-SG.F be.INF
       portat-a   a   casa   dal suo ragazzo.
       bring.PRTC-SG.F at home   by   her boyfriend
       'After the party, Teresa wanted to be taken home by her boyfriend.'

As (137-b) shows, auxiliary switch is impossible. One might think that this is expected because the lexical verb is a transitive one, and with transitive verbs there is no auxiliary switch (unless they are reflexive or impersonal). However, the lexical verb is not transitive anymore because of passivization. In fact, the perfect auxiliary of the corresponding

sentence outside restructuring is BE.

(138) Dopo la festa, Teresa è   stat-a   portat-a   a casa dal
       after the party Teresa be.PRS.3SG be.PRTC-SG.F bring.PRTC-SG.F at home by
       suo ragazzo.
       her boyfriend
       'After the party, Teresa was taken home by her boyfriend.'

Hence, the expectation is that (137-b) should be grammatical. Given the analysis that I have proposed for passives (cf. section §3.3.6 in chapter 3), a passive Voice should impose BE as the perfect auxiliary. In fact, this Voice bears an Infl-feature that makes it a goal for [uInfl:non-fin] on v_{restr}. Since Voice$_{pass}$ does not bear a person feature and is a phase, Agree for person on v_{restr} fails. When Perf selects the v_{restr}P, it probes v_{restr} for [Infl] feature (successfully, given the presence of unvalued [Infl:__] on v_{restr}). Then, it probes v_{restr} also for person. The head v_{restr} bears an unvalued instance of the matching feature, because person-Agree with Voice$_{pass}$ has failed. Hence, person-Agree on Perf stops without any valuation. As we can see, Voice$_{pass}$ behaves as an unaccusative v for the purpose of auxiliary selection. Hence, auxiliary switch should be possible, and the ungrammaticality of (137-b) is unexpected.

One may think that the contrast in (137) could be explained by means of an OCP principle that prohibits the sequence of two BE auxiliaries, such as *(BE part BE). However, if the restructuring verb embeds the "lexical" BE with predicative function, both auxiliaries are possible (139-a,b,c). In case of clitic climbing, the auxiliary must obligatorily switch (139-d). This is exactly the same behavior as unaccusative verbs.[39]

(139) a. Ho   dovuto   essere presente alla   riunione.
          have.PRS.1SG must.PRTC be.INF present   at.the meeting

       b. Sono   dovut-a   essere presente alla   riunione.
          be.PRS.1SG must.PRTC-SG.F be.INF present   at.the meeting
          'I had to be present at the meeting.'

       c. Giovanni ?sarebbe/avrebbe   dovuto   esser=le
          Giovanni be.COND.1SG/have.COND.1SG must.PRTC be.INF=DAT.3SG.F
          fedele.
          faithful

---

[39]For Burzio (1986: 365) the following sentence is marginally acceptable, independently of the auxiliary.

(i) Giovanni le=?sarebbe/?avrebbe   dovuto   essere fedele.
     Giovanni DAT.3SG.F=be.COND.1SG/have.COND.1SG must.PRTC be.INF faithful
     'Giovanni would have had to be faithful to her.'

My (and other speakers') judgments are different, as shown in example (139-d).

    d.   Giovanni le=sarebbe/*avrebbe   dovuto   essere
        Giovanni DAT.3SG.F=be.COND.1SG/have.COND.1SG must.PRTC be.INF
        fedele.
        faithful
        'Giovanni would have had to be faithful to her.'

My proposal here is that, in the case of predicative BE, different complements are possible as is the case for lexical verbs (in particular, unaccusative verbs). The fact that clitic climbing forces the emergence of the auxiliary BE in (139-d) is explained by assuming a small complement. The condition for HAVE insertion (i.e., successful Agree on Perf) cannot be met if the complement is smaller than a TP. More precisely, Agree on Perf finds a goal if there is a TP embedded, but fails to do so if the complement is smaller (cf. sections §5.7.7 and §5.7.3, respectively).

    Coming back to the passive clauses, given the present analysis, the obligatory realization of Perf as HAVE shows that the complement must be bigger than a vP. This is actually always the case, under the present assumptions, since a passive clause contains a Voice$_{pass}$. However, how big should it be in order to allow for HAVE insertion? If we look at clitic climbing, we see that it can apply in the case of a passive complement.[40] I repeat here again the data presented in (24).

(140)   a.   Teresa ha   voluto   esser=gli   presentat-a
                Teresa have.PRS.3SG want.PRTC be.INF=DAT.3SG.M introduce.PRTC-SG.F
                il   prima possibile.
                the soon   possible

        b.   Teresa gli=ha   voluto   essere presentat-a
                Teresa DAT.3SG.M=have.PRS.3SG want.PRTC be.INF introduce.PRTC-SG.F
                il   prima possibile.
                the soon   possible
                'Teresa wanted to be introduced to him as soon as possible.'

I think the conclusion is that if a restructuring verb embeds a passive verb, the complement must bigger than vP (but crucially, it can be smaller than a TP, in order to allow for clitic climbing). If the complement is a TP, then Agree on v_{restr} (and, consequently, on Perf) always succeeds, since T contains ϕ-features even when v is defective. If the complement is smaller, there must be a further head or a Voice$_{pass}$ that is featurally different from the passive head that is found outside restructuring. Unfortunately, I do not have any satisfactory answer to the lack of auxiliary switch in the presence of a passive complement. In tree (141) I show the syntactic derivation for a restructuring clause that contains a passivized TP complement (cf. section §3.3.6 in chapter 3 for details).

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[40]Note that for some speakers clitic climbing in the presence of a passive complement, as in (140-b), is very marginal. This could show that for these speakers the modal verb invariably select for a TP when the complement contains a Voice$_{pass}$ head.

(141)

PerfP
- Perf [uInfl:perf] [uπ:α]
- v_{restr}P
  - v_{restr} [Infl:perf] [uInfl:non-fin] [uπ:α]
  - VP
    - V modal
    - TP
      - T
        - Voice$_{pass}$
          - v
            - V
            - v [Infl:pass] [uπ:α]
          - Voice$_{pass}$ [Infl:non-fin] [uInfl:pass]
        - T [T:non-fin] [φ:α]
      - Voice$_{pass}$
        - <Voice$_{pass}$> [Infl:_] [uInfl:pass]
        - vP
          - <v> [Infl:pass] [uπ:α]
          - VP
            - V
            - <DP$_{obj}$> [φ:α] [case:_]

(c) Infl, (d) π

(a) Infl, (b) π
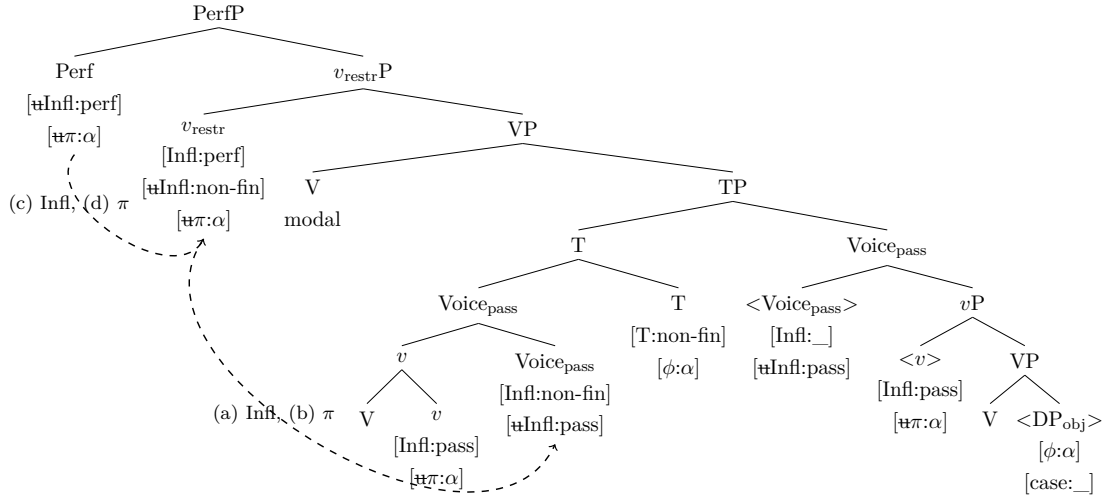
When v_{restr} probes, Voice$_{pass}$ has head-moved to T. Hence, the person feature on T is available to v_{restr} once it probes Voice$_{pass}$ for Infl. Valuation for the person feature succeeds both on v_{restr} and on Perf, leading to HAVE insertion. As we saw for other derivations with TP complements, head movement feeds Agree on higher heads in restructuring. This does not happen in root clauses, where the perfect auxiliary of passive clauses is invariably BE (138), because there is no embedded T head that Perf could probe for person.

To sum up, a passive complement has a bigger structure than an active one, with the consequence that auxiliary switch cannot take place.

The next context where auxiliary switch is impossible is when the embedded complement contains a past participle. In the following examples, I use the conditional mood in the matrix, instead of the indicative. I do so in order to obtain a better sentence than the one that contains a sequence of two indicative perfect tenses, which would sound odd for reasons of sequence of tense. The term *sequence of tense* indicates a situation where a past tense occurs embedded under another past tense, but the lower past tense is interpreted as referring to a time simultaneous with the time referred to by the higher past tense (Ogihara 1995: 668). In fact, in restructuring clauses the lower event and the higher event takes place simultaneously. Instead, the embedded perfect tense locates the lower event in a previous point of time with respect to the higher event. The use of the conditional mood does not change the discussion, since a perfect projection may freely combine with indicative or conditional mood.[41]

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[41]I do not enter the discussion about the realization of mood on the perfect auxiliary, since it is not relevant for the purposes of auxiliary selection in Standard Italian. The conditional mood (irrealis meaning) is due to the presence of a further aspectual head that either checks the [Infl] feature on Perf or to which Perf head-moves.

(142)   a.   Teresa avrebbe   voluto   essere già   andata   a casa
            Teresa have.COND.3SG want.PRTC be.INF already go.PRTC-SG.F at home
            prima di cena.
            before of dinner
            'Teresa would have wanted to have gone home before dinner.'

        b.   *Teresa sarebbe   volut-a   essere già   andata   a
            Teresa be.COND.3SG want.PRTC-SG.F be.INF already go.PRTC-SG.F at
            casa   prima di cena.
            home before of dinner
            'Teresa would have wanted to have gone home before dinner.'

As example (142-b) shows, BE is not a licit auxiliary. This is again expected. In fact, in order to have a perfect tense/mood in the complement, the complement must be a TP. Tense information requires the presence of a T-head, which is responsible for the syntactic and semantic expression of the category 'tense'. The structure contains a past participle, which brings in a certain tense/mood information. In order to obtain the sequence of tense interpretation needed for restructuring, there must be a T head that imposes that tense interpretation, despite the perfect projection. Consequently, a T head must be present as well (T[∅], the Tense head that obtains under sequence of tense, maybe involving deletion or binding, cf. Enç 1987; Ogihara 1995; Grano 2015). Next to this semantic argument, there is a formal argument. The head Perf is connected to the presence of a TP, since it is selected by a T head (and not by a C head, for instance) and it head-moves to T. Moreover, the complement of v_{restr} should be a TP, instead of just a PerfP, for uniformity of selection in relation to other cases.

Hence, I propose that the complement must be a TP, when there is an embedded PerfP. The T head bears ϕ-features and is the target for Agree on v_{restr}, and consequently on Perf (cf. section §5.7.4). This is the reason why the node Perf is invariabily realized by the allomorph HAVE.

Moreover, clitic climbing in this case is not possible, confirming the fact that there is a TP embedded. This is shown in (143).

(143)   a.   Teresa avrebbe   voluto   aver=gli   presentato
            Teresa have.COND.3SG want.PRTC have.INF=DAT.3SG.M introduce.PRTC
            Paolo.
            Paolo

        b.   *Teresa gli=avrebbe   voluto   aver   presentato
            Teresa DAT.3SG.M=have.COND.3SG want.PRTC have.INF introduce.PRTC
            Paolo.
             Paolo
            'Teresa would have wanted to have introduced to him Paolo.'

There are other cases where BE in not a possible perfect auxiliary: ellipsis, cleft and other structures that involve deletion. In (144) is an example of ellipsis. I indicate the ellipsis site with the sign Δ.

(144)   a.   Gianni poteva   andare a casa, ma non ha   voluto   Δ.
               Gianni can.PST.3SG go.INF to home but not have.PRS.3SG want.PRTC

         b. *Gianni poteva   andare a casa, ma non è   voluto   Δ.
               Gianni can.PST.3SG go.INF to home but not be.PRS.3SG want.PRTC
               'Gianni could go home, but didn't want to.'   (Cinque 2004: 136)

As noted by Radford (1977); Cinque (2004), the stranding auxiliary corresponding to the ellipsis site cannot be BE. The elided material is the constituent *andare a casa* 'go home', which normally causes optional auxiliary switch. Auxiliary switch is blocked even when the first term of the elliptic correlation has undergone auxiliary switch itself, as in (145).

(145)   a.   Gianni sarebbe   potuto   andare a casa, ma non ha
               Gianni be.COND.3SG can.PRTC go.INF to home but not have.PRS.3SG
               voluto   Δ.
               want.PRTC

         b. *Gianni sarebbe   potuto   andare a casa, ma non è
               Gianni be.COND.3SG can.PRTC go.INF to home but not be.PRS.3SG
               voluto   Δ.
               want.PRTC
               'Gianni could have gone home, but didn't want to.'

A good explanation for this behavior lies in the constraints on ellipsis. It has been proposed that in Romance languages it is possible to delete only TP constituents, but not smaller ones (Dagnac 2010). Hence, I argue that the ungrammaticality of (144-b) and (145-b) is due to the impossibility of deleting a *v*P under ellipsis. That the elliptic site hosts a *v*P (the complement of the modal verb) can be seen from the stranding auxiliary BE. As we saw, Perf is realized as BE if the complement of the restructuring verb is a *v*P (cf. section §5.7.3).[42]

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[42]I said that in Italian a sentence can undergo ellipsis if the elided constituent is a TP, as shown by the stranding auxiliary HAVE in (144-a) and (145-a). Note that it is widely assumed that ellipsis obeys an identity requirement: the deleted material and its antecedent must be identical (Lasnik 1995; Merchant 2001, 2005; Goldberg 2005; Chung 2013), although it is debated whether identity must be semantic (Merchant 2001) or syntactic (Merchant 2013). The sentence in (145-a) constitutes a problem for this matching condition. In fact, it corresponds to the following syntactic structure.

(i)   DP BE v_{restr} [$_{v\mathbf{P}}$ ...], ... HAVE v_{restr} [$_{\mathbf{TP}}$ Δ]

In the antecedent, the auxiliary BE shows that the complement is a *v*P. Given the identity requirement on ellipsis, the complement of the stranded auxiliary should also be a *v*P. In contrast, the auxiliary HAVE associated with the elided constituent signals the presence of a TP. The grammaticality of sentence (145-a) despite the mismatch in the complement sizes of the two modal verbs shows that, if the analysis proposed in this dissertation is on the right track, identity between the members of ellipsis should be semantic, rather than syntactic, thereby allowing a difference in the syntactic size. Instead, if ellipsis obeys syntactic identity, then (145-a) should be impossible and the stranded auxiliary should always be HAVE, as in (ii) (which is of course grammatical).

(ii)   Gianni avrebbe   potuto   andare a casa, ma non ha   voluto   Δ.
          Gianni have.COND.3SG can.PRTC go.INF to home but not have.PRS.3SG want.PRTC
          'Gianni could have gone home, but didn't want to.'

Similarly, clitic climbing out of the ellipsis site is impossible (Radford 1977; Cinque 2004).

(146) *Gianni voleva   parlare di questo, ma Pietro non ne=voleva   Δ.
        Gianni want.PST.3SG talk.INF of this   but Pietro not of=want.PRS.3SG
        'Gianni wanted to talk about this, but Pietro didn't want to.' (Cinque 2004: 136)

This finds a simple explanation in the fact that only TP ellipsis is possible (Dagnac 2010). If this is true, the elided constituent in (146) must be a TP, whose T head hosts the clitic pronoun. Consequently, clitic climbing should not be possible. If it takes place, it means that the complement is a *v*P, which cannot undergo ellipsis. Hence, these examples constitute evidence for constituents of different sizes, some of which allow for certain operations, while others do not.

The same point can be made with cleft structures. Whatever type of operation they involve (deletion, movement), this can apply to the constituent that causes HAVE insertion, but not to the one that leads to BE insertion. The base sentence of examples (147-a,b) is *Teresa sarebbe voluta/avrebbe voluto tornare a casa* 'Teresa would have wanted to come back home'.

(147)   a. È   [tornare   a casa]$_i$ che Teresa avrebbe
            be.PRS.3SG come.back.INF to home that Teresa have.COND.3SG
            voluto   t$_i$.
            want.PRTC
        b. *È   [tornare   a casa]$_i$ che Teresa sarebbe   voluta
            be.PRS.3SG come.back.INF to home that Teresa be.COND.3SG want.PRTC
            t$_i$.

        'It's to come back home that Teresa would have wanted.'

It is possible to move the complement of the restructuring verb to the left periphery in (147-a), but not in (147-b). The ungrammaticality of (147-b) can be explained if a TP can undergo clefting, but not a *v*P. In fact, the perfect auxiliary shows that the relevant constituent is a TP in (147-a), and a *v*P in (147-b).

Another type of movement that behaves in the same way is relativization. In the following examples, the complement of the restructuring verb contains a relative pronoun. This moves to Spec,C and, in doing so, it pied-pipes the infinitive along with it, stranding the auxiliary.

(148)   a. ?il Direttore, [andare dal   quale]$_i$ ieri   non ho   proprio
            the director, go.INF   to.the whom yesterday not have.PRS.1SG really
            voluto   t$_i$
            can.PRTC

    b. *il   Direttore, [andare dal   quale]$_i$ ieri   non sono   proprio
         the director, go.INF to.the whom yesterday not have.PRS.1SG really
         voluto   t$_i$
         be.PRTC
         'the Director, to go to whom yesterday I really couldn't'

A possible explanation for the ungrammaticality of (148-b) is that pied-piping under relativization affects TPs, but not vPs. It has been argued that pied-piping of infinitive is a sign for lack of restructuring, because it shows the presence of a CP layer (Riemsdijk 1984; Stechow 1984; Wurmbrand 2004). The ungrammaticality of a clause with auxiliary switch, as (148-b), is then expected, since the complement is definitely too small. The non-fully grammatical status of example (148-a) might be due to independent reasons. In particular, pied-piping of an infinitive with the wh-element on the right edge constitutes a marked structure. Even though it is possible in Italian, it belongs to a formal register of Italian, and it is cross-linguistically rather odd (cf. Cinque 1982; Heck 2008). In general, since the clause without auxiliary switch (148-a) is slightly better than the one with it (148-b), this might show that relative clause pied-piping is excluded only for vPs, and it is possible both for CPs and TPs. The contrast in grammaticality between (148-a) and (148-b) might suggest that relative pied-piping does not distinguish restructuring monoclausal sentence against non-restructured CPs, but rather TPs versus vPs.[43]

Note that there are other types of movement that are constituent-insensitive, in the sense that they can affect different constituents. These operations cannot be used to discriminate the structure of the two types of restructuring clauses, the one with HAVE, corresponding to a TP complement, and the one with BE, originating from a vP complement. An operation of this type is topicalization. Cinque (2004) has shown that it is possible to topicalize the complement of a restructuring verb both in the presence and in the absence of clitic climbing. The relevant examples with auxiliary switch are in (149).

(149)   a. Andare al mare, avrei   voluto.
            go.INF to beach have.COND.3SG want.PRTC

        b. ?Andare al mare, sarei   voluto.
            go.INF to beach be.COND.3SG want.PRTC
            'Go to the beach, I would wanted to.'

Topicalization can apply to constituent of different sizes, and it can also affect vP constituents.

A final piece of evidence for a difference in size comes from clausal negation. Clausal negation has been used by Cardinaletti and Shlonsky (2004) to investigate the size of the

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[43]If relative clause pied-piping can affect only CPs, then it is always ungrammatical in restructuring. If this is the case, (148-a) should be analyzed as a control structure. This would imply that restructuring verbs can also enter bicalusal configurations, differently from what I propose in this dissertation. In this case, the marginality of sentence (148-a) could be due to the fact that control with a restructuring verb is a marked configuration, or to the fact that PRO is moved out of the c-command domain of its binder on the surface (F. Heck, p.c.).

complement of the restructuring verb. The possibility of clausal negation should indicate a CP complement, and consequently lack of restructuring. If there cannot be clausal negation, but only constituent negation, the sentence involves restructuring. The brackets in examples (150) identify the CP boundary, according to Cardinaletti and Shlonsky (2004): (150-a) consists of a biclausal structure, whereas (150-b) is a restructured monoclausal sentence.

(150)   a.   Avrei   voluto   [non andare da nessuna parte].
              have.COND.1SG want.PRTC not go.INF to any   place

         b.   *[Sarei   volut-a   non andare da nessuna parte].
              be.COND.1SG   want.PRTC-SG.F not go.INF to any   place
              'I would have wanted not to go anywhere.'

                                                      (Cardinaletti and Shlonsky 2004: 527)

I would like to propose that the presence of clausal negation, which is possible when auxiliary switch does not take place, does not indicate a CP boundary, and hence, no restructuring, but rather it indicates a TP constituent, which can host clausal negation.[44] In fact, it has been argued that clausal negation involves a TP projection, but not necessarily a CP boundary (Zanuttini 2001). Clausal negation and auxiliary switch cannot be found within the same clause, because the former requires a TP, the latter a vP. When the auxiliary is realized as HAVE, the complement of the modal is a TP, which is big enough to host clausal negation.

To conclude, I think that all these diagnostics (impossibility of auxiliary switch when the embedded complement is a passive or a perfect verbal projection, impossibility of auxiliary switch in the context of ellipsis, cleft, relative pied-piping and clausal negation) show that there is a difference in size between the clause with auxiliary switch and the clause without it (i.e., with HAVE auxiliary). Despite the availability of other factors as possible explanations for the ungrammaticality of the clauses discussed above, the size of the complement allows to explain all these contrasts in a coherent and simple way. For this reason, I take these data as evidence for a syntactic difference between a TP and a vP complement in restructuring configurations.

The relevant difference consists of something containing a T projection and something that contains no T head. The remaining question is whether the former is a CP or a TP. In the next section, I present some tests that should signal either a CP boundary with a controlled PRO, or a TP out of which a DP raises to a higher position. As we will see, the diagnostics for control fail to return a sharp difference between the sentences with and without auxiliary switch, showing that a difference between TP and vP should be preferred to a difference between CP and vP.

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[44]In principle, once could also assume that clausal negation requires a CP. In fact, as long as a CP also contains a TP, auxiliary switch will be blocked. The reason for having only a TP structure instead of a CP is to keep the raising analysis coherent across all instances of restructuring.

5.8.1 Raising or control?

The analysis developed in this chapter has shown that when there are no overt restructuring signs (i.e., clitic climbing and auxiliary switch), then the complement of a restructuring verb must be big enough to contain at least a T head. In fact, clitic climbing and auxiliary switch are not only signs of monoclausality (lack of CP boundary), but rather of the more specific condition of lack of a T head in the complement. A clause with a modal verb may fail to exhibit the hallmarks of restructuring for one of the following reasons: either it involves raising out of TP, or it is an instance of control into CP. In the former scenario (TP complement), clitic climbing and auxiliary switch cannot take place because they are possible only with vPs. Under this analysis, restructuring verbs are consistently raising, functional verbs. They invariably give rise to monoclausal configurations, where overt signs of restructuring are obligatory. However, since these depend on the size of the embedded clause and not only on monoclausality, they do not take place when the complement is a TP, even though the structure is still monoclausal. In the latter case (CP complement), these syntactic processes are excluded because they are clause-bounded. In control, restructuring does not apply and the embedded subject position is realized by a controlled PRO. This means that restructuring verbs may be used either as functional verbs, with a vP complement and obligatory transparency effects, or as lexical verbs, with a CP complement in a control configuration, where no restructuring effects can take place at all because the structure is biclausal.

Wurmbrand (1999) has argued that at least modal restructuring verbs involve a raising configuration instead of a control structure. This conclusion is drawn from English, Icelandic and German data. Evidence for this claim are (a) the possibility of a matrix expletive subject with an associate that depends on the lower verb, (b) the maintenance of the case assigned to the subject by the lower verb (quirky case is retained), (c) the prohibition against passive of modals (because modal verbs do not project an external argument), and (d) the possibility of passive under modals (meaning that the lexical verb is the embedded one, whereas the modal is a functional head). In contrast, aspectual verbs do not behave in this way according to these diagnostics, meaning that they are lexical verbs with a reduced complement, rather than functional heads (Wurmbrand 2004).

In this section, I try to apply similar tests to Italian modal verbs. In particular, the question I want to answer is whether the difference in the choice of the auxiliary corresponds to a control versus raising distinction. In the following examples, I consider those restructuring clauses where the embedded verb can lead to auxiliary switch (unaccusative, reflexive, impersonal). I will presuppose that the sentence without auxiliary switch is a control clause (signaled with "alleged control" next to the relevant example), whereas the sentence with auxiliary switch is a raising clause. If the two versions are, respectively, grammatical and ungrammatical as far as the tests for control are concerned, then the distinction is well-motivated. In contrast, if the grammaticality judgments are the same for both clauses, then their underlying structure cannot be in the one case raising and in

the other case control.

The main difference between raising and control is the interpretation of the argument(s) by the matrix verb. If the restructuring verb initiates any relation with any argument, the clause should involve control, rather than raising. For this purpose, I propose the following tests: subject animacy, weather-verbs, volitional adverbs, wide/narrow scope readings, quantifier scope interactions, passivization, interpretation of passive complement, case retainment.[45]

The presence of animacy restrictions can be used as a test for control. In raising, there are no animacy restrictions for the subject, since the verb does not assign it any Theta-role. In contrast, only animate DPs can typically control. In example (151), the matrix subject is inanimate. As we can see, there is no difference in judgment depending on the type of auxiliary in the matrix.

(151) a. I   biscotti$_i$ hanno   dovuto   [PRO$_i$ andare a male], prima che
           the biscuits have.PRS.3PL must.PRCT   go.INF to bad   before that
           mi=decidessi   a buttar=li.
           REFL.ACC.1SG=decide.CONJ.PST.1SG to throw.INF=ACC.3PL
           'The biscuits had to go bad, before I decided myself to throw them away.'
           (alleged control)

       b. I   biscotti$_i$ sono   dovut-i   [t$_i$ andare a male], prima che
           the biscuits be.PRS.3PL must.PRCT-PL.M   go.INF to bad   before that
           mi=decidessi   a buttar=li.
           REFL.ACC.1SG=decide.CONJ.PST.1SG to throw.INF=ACC.3PL
           'The biscuits had to go bad, before I decided myself to throw them away.'
           (raising)

In both cases an inanimate subject is possible, meaning that (151-a,b) should not involve

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[45]I have also tried to test the availability of partial control. This should be excluded since restructuring verbs involve exhaustive control (Wurmbrand 2003; Landau 2013; Grano 2015). Surprisingly, the sentence with the auxiliary HAVE is grammatical, as shown in (i).

(i)   a. Il   presidente$_i$ ha   dovuto   [PRO$_{i+}$ riunir=si   all'improvviso la   notte
          the chair   have.PRS.3SG must.PRCT   gather.INF=REFL suddenly   the night
          scorsa.]
          last
          'The chair had to suddenly gather last night.'
      b. *Il   presidente si=è   dovuto   [riunire   all'improvviso la   notte scorsa.]
          the chair   REFL=be.PRS.3SG must.PRCT gather.INF suddenly   the night last
          'The chair had to suddenly gather last night.'

However, the result of this test cannot be taken into consideration, because the corresponding root clause with the partial control verb is ungrammatical.

(ii) *Il   presidente$_{i+}$ si=è   riunito/-i   all'improvviso la   notte scorsa.
       the chair   REFL=be.PRS.3SG gather.PRTC suddenly   the night last
       'The chair suddenly gathered last night.'

The inherently reflexive nature of the verb *riunir=si* 'gather' blocks partial control. There might be independent reasons why the clause in (i-a) is grammatical, but I leave this issue open.

control. This test hints at a raising TP analysis for modals without auxiliary switch. Modals seem to be athematic verbs both in the presence and in the absence of auxiliary switch. Note, however, that this test cannot exclude a control analysis. In fact, control verbs tend to impose selectional restriction to their arguments, but there are also some control verbs that allow for inanimate arguments (for instance *richiedere* 'demand': *questo attrezzo richiede di essere pulito ogni giorno* 'this tool demands to be cleaned every day'). Nonetheless, these data are compatible with the raising analysis and, crucially, show that both variants with the two auxiliaries behave identically.

Secondly, weather verbs are relevant because their subject, being non-argumental, cannot be controlled. An embedded weather verb does not provide any argument that can be interpreted by the matrix verb. This is a problem for control verbs, but not for raising verbs. Control predicates always take argumental thematic arguments, disallowing expletives. Hence, if a restructuring sentence with a weather verb is grammatical, it should involve raising, and control is excluded. As example (152) illustrates, it is possible to have an embedded weather verb with or without auxiliary switch, again showing that there is no difference in the status of the two variants as far as control is concerned.

(152) a. pro_i Ha   dovuto   [PRO_i piovere molto], prima di smettere.
           have.PRS.3SG must.PRCT   rain.INF a lot   before of stop.INF
           'It had to rain a lot, before it stopped.'   (alleged control)

       b. pro_i È   dovuto   [t_i piovere molto], prima di smettere.
           be.PRS.3SG must.PRCT   rain.INF a lot   before of stop.INF
           'It had to rain a lot, before it stopped.'   (raising)

In example (152), both clauses are raising sentences.

Another possible test is the use of volitional adverbials. In control structures, the verb should be more lexical than in raising, since it assigns a Theta-role and it selects its own arguments. Hence, we might expect that control structures allow for adverbs that have agentive meaning, whereas in raising they should be excluded. In (153), both clauses are compatible with the adverb *deliberatamente* "deliberately'.

(153) a. Teresa_i ha   deliberatamente dovuto   [PRO_i cadere a ogni
           Teresa have.PRS.3SG deliberately   must.PRTC   fall.INF at every
           allenamento per non partecipare   alla   gara].
           training   to not participate.INF to.the competition
           'Teresa had to deliberately fall down during every training in order not to
           take part in the competition.'   (alleged control)

       b. Teresa_i è   deliberatamente dovut-a   [t_i cadere a ogni
           Teresa be.PRS.3SG deliberately   must.PRTC-SG.F   fall.INF at every
           allenamento per non partecipare   alla   gara].
           training   to not participate.INF to.the competition
           'Teresa had to deliberately fall down during every training in order not to
           take part in the competition.'   (raising)

However, it should be noted that volitional adverbials are also compatible with raising verbs. In (154), I show an example with the canonical raising verb *sembrare* 'seem'.

(154)   Teresa$_i$ sembra   deliberatamente [t$_i$ cadere a ogni allenamento per
        Teresa seem.PRS.3SG deliberately   fall.INF at every training   to
        non partecipare   alla   gara].
        not participate.INF to.the competition
        'Teresa had to deliberately fall down during every training in order not to take
        part in the competition.'

This is probably due to the position of the adverb, which can modify the lexical verb instead of the raising verb. Moreover, adverbials can also modify functional heads. In addition, the lexical meaning of the "control-restructuring" verb is shared by the corresponding functional head in the "raising-restructuring" analysis (Cinque 2004; Wurmbrand 2004). Hence, this test cannot say anything about the syntactic structure. Nonetheless, I have presented it anyway because it shows that there is no contrast between the two variants, the one with auxiliary switch and the one without it. This test does not exclude a raising analysis, but once again it shows no difference between the two variants.

The next investigation concerns scope properties: raising constructions but not control constructions allow an interpretation in which the subject takes narrow scope with respect to the matrix verb (May 1977, 1985; Wurmbrand 1999). If only the higher scope is available, the structure involves control. Modal verbs allow for both scope readings as example (155) shows: the high scope reading (there is someone from New York and it is likely that s/he will win the lottery) and the low scope reading (it is likely that somebody from New York will win the lottery).

(155)   Qualcuno di New York potrebbe   vincere la lotteria.
        someone   of New York can.COND.PRS.3SG win.INF the lottery
        'Someone from New York could win the lottery.'
        ✓ There is someone from New York and it is likely that s/he will win the lottery.
        ✓ It is likely that somebody from New York will win the lottery.

Let us now see if this property is preserved with and without auxiliary switch.

(156)   a. Qualcuno$_i$ di Roma avrebbe   potuto   [PRO$_i$ andare al
            someone   of Rome have.COND.PRS.3SG can.PRTC   go.INF to.the
            mare (ma non l=ha   fatto)].
            beach but not ACC.3SG=have.PRS.3SG do.PRTC
            'Someone from Rome could have gone to the beach but s/he didn't.' (alleged
            control)
            ✓ In view of the evidence available it is the case that somebody from Rome
            could have gone to the beach, but s/he didn't.
            ✓ There is somebody from Rome and in view of the evidence available it is

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the case that s/he could have gone to the beach.

b. Qualcuno_i di Roma sarebbe   potuto   [t_i andare al   mare
someone   of Rome be.COND.PRS.3SG can.PRTC   go.INF to.the beach
(ma non l=ha   fatto)].
but not ACC.3SG=have.PRS.3SG do.PRTC
'Someone from Rome could have gone to the beach but s/he didn't.'(raising)

✓ In view of the evidence available, it is the case that somebody from Rome could have gone to the beach, but s/he didn't.

✓ There is somebody from Rome, and in view of the evidence available it is the case that s/he could have gone to the beach.

As we see, both scope readings are possible with both auxiliaries. Hence, both cases should be considered as raising structures.

Another test for raising consists of the scope interaction between the embedded object and the matrix subject. In raising (but not in control) the embedded object can take scope over the surface subject (Wurmbrand 1999). In order to test this, for unaccusative verbs we can use the unaccusative subject (internal argument) and a prepositional phrase (whose base position is higher than the internal argument), and verify if they can be interpreted both in the surface order (subject » PP) and in the base order available with raising (PP » subject). If the restructuring sentence is ambiguous between a wide scope reading and a narrow scope reading of the universal quantifier, then it should be a case of raising. In example (157), containing a restructuring verb with an unaccusative complement, both readings are available.

(157)   Secondo il   regolamento, almeno un professore deve   andare da
according to.the regulation   at least a   professor must.PRS.3SG go.INF to
ogni studente.
every student
'According to the regulations, at least one professor must go to every student.'

✓ a » every: university regulations require that there is at least one professor who must go to every student.

✓ every » a: university regulations require that every student must be visited by at least one professor.

The sentences in (158) correspond to the clause in (157), in the perfect tense. Again, there is no difference in the availability of these readings depending on the type of the matrix auxiliary. Both readings are kept with and without auxiliary switch.

(158)   a. Secondo il   regolamento, almeno un professore_i ha
according to.the regulation   at least a   professor have.PRS.3SG
dovuto   [PRO_i andare da ogni studente].
must.PRTC   go.INF to every student
'According to the regulations, at least one professor had to go to every student.'   (alleged control)

✓ a » every: university regulations require that there is at least one professor who had to go to every student.

✓ every » a: university regulations require that every student had to be visited by at least one professor.

b. Secondo il regolamento, almeno un professore_i è
according to.the regulation at least a professor be.PRS.3SG
dovuto [t_i andare da ogni studente].
must.PRTC go.INF to every student
'According to the regulations, at least one professor had to go to every student.' (raising)

✓ a » every: university regulations require that there is at least one professor who had to go to every student.

✓ every » a: university regulations require that every student had to be visited by at least one professor.

The next test is passivization of the restructuring verb. Wurmbrand (1999) has shown that modal verbs cannot be passivized because they are not lexical verbs. Instead, they behave as raising verbs: they do not establish any thematic relations with their arguments and do not introduce any further argument by themselves. Passivization of a raising verb is impossible because there is no external argument that can be demoted, or that is existentially bound. In example (159), I show that passivization of modal verbs is excluded, as is generally the case for raising predicates.

(159) *Mi=è stato voluto dare da Gianni.
DAT.3SG=be.PRS.3SG be.PRTC want.PRTC give.INF by Gianni
'It was wanted to give to me by Gianni.' (literally) (Rizzi 1976: 31)

In this context, it is not possible to see the alternation between HAVE and BE for the perfect auxiliary, since passivized predicates always require BE as the perfect auxiliary (cf. section §3.3.6 in chapter 3).

(160) Mi=è/*ha stato dato da Gianni.
DAT.3SG=be.PRS.3SG/be.PRS.3SG be.PRTC give.PRTC by Gianni
'It was given to me by Gianni.'

However, I have presented the test of passivization as further support for the raising analysis. Modal verbs cannot be passivized, similarly to raising verbs.

In contrast, modal verbs can embed a passive verb. This fact has been interpreted as a confirmation of their functional flavor, meaning that they are located in a functional position higher than Voice_pass (Cinque 2003, 2004; Wurmbrand 2004). However, since this test neither allows to exclude the control analysis (since control verbs can also embed a passive), nor to distinguish between the sentences with or without auxiliary switch (since only the perfect auxiliary HAVE is possible when the complement is passivized, cf. (23)

and discussion in section §5.8), I do not present the data here.

A relevant test here is the interpretation of the clause containing a passive complement. If the complement of a raising verb is passive, the meaning of the sentence is the same as if the complement is active, as shown in (161).

(161)   a.   Teresa sembra   aver   invitato   Giulia alla   festa.
             Teresa seem.PRS.3SG have.INF invite.PRTC Giulia to.the party
             'Teresa seems to have invited Giulia to the party.'

        b.   Giulia sembra   esser stat-a   invitat-a   da Teresa
             Giulia seem.PRS.3SG be.INF be.PRTC-SG.F invite.PRTC-SG.F by Teresa
             alla   festa.
             to.the party
             'Giulia seems to have been invited by Teresa to the party.'

             → 'Giulia seems to be invited.'

This is not the case for control verbs, where the clause with the passive complement and the one with the active complement have different meanings, as shown in (162).

(162)   a.   Teresa desidera   aver   invitato   Giulia alla   festa.
             Teresa desire.PRS.3SG have.INF invite.PRTC Giulia to.the party
             'Teresa desires to have invited Giulia to the party.'

        b.   Giulia desidera   esser stata   invitata   da Teresa
             Giulia seem.PRS.3SG be.INF be.PRTC-SG.F invite.PRTC-SG.F by Teresa
             alla   festa.
             to.the party
             'Giulia desires to have been invited by Teresa to the party.'

             → 'Teresa wishes to have invited Giulia.'

             → 'Giulia wishes to have been invited.'

Modal verbs behave as raising verbs with respect to this test, as shown in (163).

(163)   a.   Teresa ha   dovuto   invitare Giulia alla   festa.
             Teresa have.PRS.3SG must.PRTC invite.INF Giulia to.the party
             'Teresa had to invite Giulia to the party.'

        b.   Giulia ha   dovuto esser   invitat-a   da Teresa
             Giulia seem.PRS.3SG be.INF be.PRTC-SG.F invite.PRTC-SG.F by Teresa
             alla   festa.
             to.the party
             'Giulia seems to have been invited by Teresa to the party.'

             → 'Giulia is invited.'

Unfortunately, I cannot test this with the perfect auxiliary BE, because when the complement is a passive, the auxiliary is invariably HAVE (cf. (23) and discussion in section §5.8). However, the example in (163) shows that the variant with HAVE behaves as a raising clause.

A last test concerns preservation of case. In control configurations, the matrix subject bears the case assigned by the controller verb. In raising, the case assigned by the lexical verb is maintained. When a restructuring verb embeds a quirky predicate that assigns dative case, if the matrix subject surfaces as a dative, then the restructuring verb is a raising verb. In example (164), the subject of the modal verb maintains dative case that is assigned by the lexical verb in the complement. If the subject was the proper argument of the modal, then it would not be marked by the dative preposition *a*, but instead it would receive nominative case from the higher T.

(164)   a.   Per fare   il pizzaiolo,   a Paolo   ha   dovuto
             to do.INF the pizza maker to Paolo.DAT.3SG.M have.PRS.3SG must.PRTC
             piacere per forza la   pizza.
             like.INF by force the pizza

        b.   Per fare   il pizzaiolo,   a Paolo   è
             to do.INF the pizza maker to Paolo.DAT.3SG.M be.PRS.3SG
             dovut-a   piacere per forza la   pizza.
             must.PRTC-SG.F like.INF by force the pizza
             'In order to be a pizza maker, Paolo had really to like pizza.'

Importantly, quirky case is retained with both auxiliaries, meaning that the modal verb does not initiate a thematic relation with the argument in none of the two cases.[46]

To sum up, these diagnostics have shown that there is no difference in terms of control and raising depending on the perfect auxiliary chosen for the modal verb. Whatever the structure actually is, it must be the same in both cases. Table 5.7 summarizes the results and compares them with the profile of the prototypical raising verb *sembrare* 'seem'.

	BE	HAVE	raising (seem)
Animacy restrictions	NO	NO	NO
Weather verbs	YES	YES	YES
Volitional adverbs	YES	YES	YES
High/low scope	YES	YES	YES
Quantifier scope	YES	YES	YES
Passive matrix	NO	/	NO
Same meaning with active/passive	/	YES	YES
Case retained	YES	YES	YES

Table 5.7: Auxiliary switch and raising/control diagnostics.

The most important tests in favor of the raising analysis are the possibility of embedding weather verbs, the same interpretation of embedded passive and active verbs, and the impossibility of passivization. These diagnostics show that modal verbs behave as raising verbs.[47] Crucially, the sentences with auxiliary BE and with auxiliary HAVE pattern

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[46]It should be noted that some speakers prefer the version with BE (164-b) to the one with HAVE (164-a). However, both clauses are evaluated as grammatical.

[47]A control analysis may be eventually admitted for some specific uses of these verbs. It could be that

identically, as far as these diagnostics are concerned. My conclusion here is that modal verbs always involve raising, with or without auxiliary switch. In the former case, it is raising out of vP; in the latter, raising out of TP. Auxiliary selection is a consequence of these two options.

5.9 Cline of restructuring verbs

5.9.1 Two types of restructuring?

Wurmbrand (2003, 2004) proposes to distinguish between *functional restructuring* and *lexical restructuring*. In the former type, the restructuring verb is the main verb of the clause, it behaves as a functional head and it selects a vP as its complement. The external argument is an argument of the embedded lexical verb and it is raised to the matrix position by the restructuring verb. Functional restructuring verbs do not assign any Theta-role, are subject to rigid ordering and co-occurrence restrictions and only allow for a single type of complementation. Typically, functional restructuring verbs are modal and raising verbs. Aspectual, causative, perception and motion verbs can also behave as such (Wurmbrand 2012: 3,342).

Instead, a lexical restructuring verb takes a reduced verbal phrase as its complement, namely a VP. The external argument is an argument of the lexical restructuring verb, which is a Theta-role assigner. Lexical verbs are not subject to co-occurence restrictions and show optionality with respect to complementation, meaning that they can select either VPs, DPs or CPs. When selecting DPs, they are canonical lexical verbs. With CP complements, they enter a control configuration. Restructuring takes place only with a VP complement. In this case, the only v is the one of the aspectual verb, which introduces the subject. This is interpreted below as an argument of the embedded verb by means of semantic control (Chierchia 1984; Wurmbrand 2003).[48] Verbs that may belong to this class are strong implicative, aspectuals, irrealis predicates. Examples for German are the verbs *versuchen, wagen, vergessen* 'try, dare, forget' (Wurmbrand 2003: 145) (whose restructuring status for Italian is controversial (Wurmbrand 2012: 342)).

In Italian, restructuring verbs can be divided into three main categories: modal, aspectual and motion verbs (Cardinaletti and Shlonsky 2004). Not all restructuring verbs behave in the same way as far as different syntactic operations are concerned. The aim of this section is to investigate whether Italian aspectual and motion verbs can be considered functional restructuring verbs. In section §5.8, and in particular in §5.8.1, I have shown that modal verbs belong to the functional restructuring group. In this section, I go through some

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modal verbs, and especially the verb *volere* 'want', may also enter a control configuration. I do not explore this hypothesis any further, since the tests have shown that the raising analysis is possible both for the sentence with auxiliary BE and the sentence with auxiliary HAVE.

[48] According to Chierchia (1984), semantic control is different from syntactic control, because it does not require the presence of a PRO argument and it is specified in the lexicon. In this case, the embedded subjecthood is determined lexically. Semantic control is enabled by the fact that all obligatory control infinitives (as restructuring complements are) are properties/predicates rather than proposition.

tests to see whether aspectual and motion restructuring verbs have the same behavior as modal verbs, or whether they correspond to a different syntactic structure. Then, I provide a proposal in section §5.9.2 and an analysis in section §5.9.3 that can account for the differences found out in this section.

In what follows, I apply to aspectual and motion verbs the tests that I have used for modal verbs in section §5.8.1. The aim is to check whether there is a difference in thematic function and in control versus raising. The conclusion is that at least some aspectual and motion verbs do behave as modal predicates, in relation to the operations shown in this section. It is noteworthy that the classes of aspectual and motion verbs are not homogeneous as far as their members are concerned: some aspectual verbs pattern with modal verbs, others do not. Therefore, it is not possible to split the Italian restructuring verbs between functional and lexical restructuring, or between raising and control, but rather they are located along a cline of functionality. If modal, aspectual and motion verbs are functional restructuring verbs, their differences (for example, the lack or the possibility of auxiliary switch) must be due to some other factors that are not the lack of restructuring in the sense of raising. For instance, if the aspectual verb *cominciare* 'begin' behaves as a modal verb according to the tests presented in this section, it should enter the same syntactic structure as a modal verb does. Consequently, the fact that this verb only partially allows for auxiliary switch should not be dependent on a syntactic structure that is different from modal verbs.

The first test is the presence of animacy restrictions. Aspectual verbs allow for inanimate subjects, as modal verbs do. However, this is not true for all aspectual predicates. The verb *cominciare* 'start' can take an inanimate subject (165-a), whereas the verb *provare* 'try' cannot (165-b). Some aspectual verbs sound odd with an inanimate subject. This might mean that these verbs establish a thematic relation with the agentive external argument (Warner 1993; Wurmbrand 1999).[49]

(165)   a.   I   biscotti hanno   cominciato ad andare a male, prima che
               the biscuits have.PRS.3PL start.PRCT to go.INF to bad   before that
               mi=decidessi   a buttar=li.
               REFL.ACC.1SG=decide.CONJ.PST.1SG to throw.INF=ACC.3PL
               'The biscuits started to go bad, before I decided myself to throw them away.'

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[49]For this test, Wurmbrand (1999) uses an embedded passive predicate, since this should be semantically better than an active verbal form for an inanimate subject. Substituting the active form with the passive one does not improve the grammaticality judgment. The sentence corresponding to the one presented by Wurmbrand (1999: 6), which goes back to Warner (1993), is in (i).

(i)   *I   biscotti hanno   provato/deciso di essere finit-i   da Paolo.
        the biscuits have.PRS.3PL try/decide.PRCT to be.INF finish.PRCT-PL.M by Paul
        '*The biscuits tried/decided to be finished by Paul.'

    b. *I   biscotti hanno   provato di andare a male, prima che
        the biscuits have.PRS.3PL try.PRCT to go.INF to bad   before that
        mi=decidessi   a buttar=li.
        REFL.ACC.1SG=decide.CONJ.PST.1SG to throw.INF=ACC.3PL
        '*The biscuits tried to go bad, before I decided myself to throw them away.'

This test clearly hints at a cline between "functionality" and "lexicality" within the category of aspectuals. Inceptive aspectuals ("begin-verbs", as in (165-a)) cluster with modals, whereas conative aspectuals ("try-verbs", as in (165-b)) retain their lexical meaning more.

    Motion verbs may or may not obey animacy restrictions. The verb *tornare a* 'go back to' can be combined more easily with an inanimate subject than the verb *andare a* 'go to'.[50] This may show that the former verb is more functional than the latter.

(166)   a.   Le giornate tornano   ad allungarsi.
            the days   go.back.PRS.3PL to lengthen.INF
            'The days starts to lengthen again.'

        b. ?Le giornate vanno   ad allungarsi.
            the biscuits go.PRS.3PL to lengthen.INF
            'The days are going to lengthen again.'

Other restructuring verbs of other classes, such as *mandare a* 'send to', are clearly subject to animacy restrictions.

(167)   *La mia lettera manda   a dire   queste cose.
        the my letter send.PRS.3SG to say.INF these   things
        *'My letter sends to say these things.' (literally)

A similar result is obtained with weather verbs. These predicates are generally fine with aspectual verbs. As far as motion verbs are concerned, the predicates *andare a, tornare a* 'go to', 'go back to' behave as aspectual verbs. Note that a restructuring verb such as *mandare a* 'send to' cannot combine with weather-verbs.

(168)   a.   Ha   cominciato a piovere dopo pranzo.
            have.PRS.3SG start.PRCT to rain.INF after lunch
            'It has started to rain after lunch.'

        b.   Ha   provato a piovere un paio   di volte dopo pranzo.
            have.PRS.3SG try.PRCT to rain.INF a   couple of times after lunch
            'It has tried to rain a couple of times after lunch.'

        c.   Va   a piovere.
            go.PRS.3SG to rain.INF
            'It goes to rain.'

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[50]Note that the verb *andare a* 'go to' functions an imperfective auxiliary and, hence, it is not fully compatible with the perfect tense, which entails completive aspect in Italian. For this reasons, examples containing this verb are in the present tense.

d. Torna   a piovere.
    go.back.PRS.3SG to rain.INF
    'It rains again.'

The next test concerns scope interactions. If aspectual verbs involve raising, the subject should be able to take scope below the aspectual verb. As shown in (169), both the high and the low scope readings are possible. In particular, the sentence in (169) allows for both a specific interpretation of the subject of the aspectual (surface scope) and for a non-specific reading (inverse scope, triggered by the following context: in the last weeks, the lottery has been won only by people from Northern Italy. In the last days, the lottery has been won by some people of Rome, instead, and this has happened again and again).

(169) Qualcuno di Roma comincia   a vincere spesso la lotteria.
       someone of Rome begin.PRS.3SG to win.INF often   the lottery
       'Someone from Rome is beginning to win often the lottery.'
       ✓ There is somebody from Rome and s/he is beginning to win again and again the lottery (someone > begin).
       ✓ It begins that somebody from Rome is winning again and again the lottery. (begin > someone)

Although the low scope interpretation of the subject is not the most salient reading, it is possible (differently from non-restructuring verbs: *Qualcuno di Roma spera di vincere spesso la lotteria* 'There is somebody from Rome and s/he hopes to win again and again the lottery', '*It is hoped there is somebody from Rome and s/he is winning again and again the lottery'). This is not possible for the aspectual verb *provare* 'try', where only the surface reading is available.

(170) Qualcuno di Roma prova   a vincere la lotteria.
       someone of Rome try.PRS.3SG to win.INF the lottery
       'Someone from Rome tries to win the lottery.'
       ✓ There is somebody from Rome and s/he tries to win the lottery (someone > try).
       ✗ There is the attempt that somebody from Rome win the lottery. (try > someone)

The same scenario arises for motion verbs such as *andare a* and *tornare a*. The test does not work for the other verbs, such as *mandare a*.

(171) a. Qualcuno di Roma va   a vincere la lotteria.
           someone of Rome go.PRS.3SG to win.INF the lottery
           'Someone from Rome is going to win the lottery.'
           ✓ There is somebody from Rome and s/he is going to win the lottery (someone > go).
           ✓ It will be the case that somebody from Rome wins the lottery. (go >

someone)

b. Qualcuno di Roma torna   a vincere la   lotteria.
    someone   of Rome go.back.PRS.3SG to win.INF the lottery
    'Someone from Rome is winning again the lottery.'

    ✓ There is somebody from Rome and s/he is winning again the lottery
    (someone > go back).

    ✓ It is again the case that somebody from Rome is winning the lottery. (go
    back > someone)

As far as the scope diagnostics are concerned, the classes of aspectual and motion verbs are
split: aspectual-begin and motion-go verbs behave as raising verbs, but not aspectual-try
and motion-send verbs.

Another test is inverse scope readings with quantifiers. Aspectual verbs (both aspectual-
begin and aspectual-try verbs) behave as modal verbs in relation to this test: the sentences
are ambiguous between a wide scope reading and a narrow scope reading of the universal
quantifier

(172)   a. Secondo il   regolamento, almeno un professore comincia   a
            according to.the regulation   at least a   professor start.PRS.3SG to
            interrogare   ogni studente.
            examine.INF every student
            'According to the regulations, at least one professor begins to examine every
            student.'

            ✓ a » every: university regulations require that there is at least one professor
            who begins to examine every student.

            ✓ every » a: university regulations require that every student begins to be
            examined by at least one professor.

        b. Secondo il   regolamento, almeno un professore prova   a
            according to.the regulation   at least a   professor try.PRS.3SG to
            interrogare   ogni studente prima dell'esame.
            examine.INF every student   before of.the exam
            'According to the regulations, at least one professor begins to examine every
            student before the exam.'

            ✓ a » every: university regulations require that there is at least one professor
            who tries to examine every student.

            ✓ every » a: university regulations require that every student tries to be
            examined by at least one professor.

In the case of motion verbs, the inverse scope reading is possible. This hints at raising
structure also for this kind of predicates.[51]

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[51]Since all verbs seem to allow for the interactions between quantifier, one may wonder if the test is
reliable. Non-restructuring verbs do not allow for both readings.

(173)   a.   Secondo il   regolamento, almeno un professore va   a
according to.the regulation   at least a   professor go.PRS.3SG to
interrogare ogni studente.
examine.INF every student
'According to the regulations, at least one professor goes to examine every
student.'
✓ a » every: university regulations require that there is at least one professor
who goes to examine every student.
✓ every » a: university regulations require that every student is examined
by at least one professor.

The next test concerns the ability of assigning a Theta-role, which is excluded for raising
and modal verbs. Aspectual and motion verbs can be combined with volitional adverbials
while embedding an unaccusative verb (which assigns the patient role to its argument),
showing that their subject receive an agentive Theta-role.

(174)   a.   Ho   deliberatamente cominciato a cadere a ogni allenamento
have.PRS.1SG deliberately   start.PRTC to fall.INF at every training
per non partecipare   alla   gara.
to not participate.INF to.the competition
'I have deliberately started to fall down during every training in order not
to take part in the competition.'

        b.   Mio nonno   malato avrebbe   volentieri provato a morire da
my grandfather sick   have.COND.3SG willingly try.PRTC to die.INF by
solo   (non all'ospedale).
himself not at.the hospital
'My sick grandfather would have willingly tried to die by himself (not at the
hospital).'

The same can be said for motion verbs, when combined with raising or unaccusative
embedded verb.

(175)   a.   Con questa nuova tintura ai   capelli, torno   volentieri a
with this   new dye   to.the hair   go.back.PRS.1SG willingly to
sembrare più giovane.
seem.INF more young
'With this new hair dye, I willingly look younger again.'

(i)   a.   Secondo il   regolamento, almeno un professore decide   di interrogare ogni
according to.the regulation   at least a   professor decide.PRS.3SG to examine.INF every
studente.
student
'According to the regulations, at least one professor decides to examine every student.'
✓ a » every: university regulations require that there is at least one professor who decides to
examine every student.
✗ every » a: university regulations require that every student decides to be examined by at
least one professor.

    b.   Uscendo con questi capelli, vado   deliberatamente a
        go.GER   with these hair   go.back.PRS.1SG deliberately   to
        sembrare un pagliaccio!
        seem.INF a   clown
        'If I go out with this hair, I will deliberately look like a clown!'

The sentences in (174) and (175) could correspond to a structure where the subject is an argument of the aspectual verb, for instance to a control structure or to the lexical restructuring VP-complementation (Wurmbrand 2004, 2012). However, since volitional adverbials are possible even with raising verb (cf. (154)), I do not draw any conclusion from this test.

    As far as passivization is concerned, some motion and aspectual verbs can be passivized, showing a lexical behavior, whereas modal verbs cannot, as we saw in section §5.8.1. The verbs *iniziare, cominciare* 'begin', 'start' are fine under passivization, whereas *provare* 'try' cannot be passivized.[52]

(176)   a.   Quelle case   furono   iniziat-e/cominciat-e   a costruire
        those   houses be.PST.3PL begin.PRTC-PL.F/start.PRTC-PL.F to build.INF
        negli anni '20.
        in.the years 20
        'Those houses were started to build in the 20's.' (literally) (Cinque 2003: 34)

    b.   *Fu   provato ad aggiustare da Gianni.
        be.PST.3SG try.PRTC to mend.INF by Gianni
        'It was tried to mend by Gianni.' (literally)   (Cinque 2003: 33)

If passivization is possible, there must be an external argument to be demoted, or an argument that is existentially bound. In relation to this operation, aspectual-begin verbs pattern as Wurmbrand's (2004) lexical restructuring verbs. Instead, the aspectual-try verbs pattern with modal verbs. This shows once again that the category is not monolithic and that the verbs are located on different position along a cline depending on the specific operation considered.

    Also some motion verbs can be passivized, such as *andare a, passare a* 'go to', 'pass to', while others cannot (for instance, *tornare a* 'go back to').

(177)   a.   Sarete   passat-i   a prendere più   tardi.
        be.FUT.3PL pass.PRTC-PL.M to fetch.INF more late
        'You will be passed to fetch later.' (literally)   (Cinque 2003: 35)

    b.   I   malati furono   andat-i   a prendere a casa.
        the ill   be.PST.3PL go.PRTC-PL.M to fetch.INF at home
        'The ill were gone to fetch at home.' (literally)   (Cinque 2003: 35)

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[52]The judgments about examples (176) and (177) are mine. In Cinque (2003), the sentence (176-a) with the verb *cominciare* is judged as non-fully grammatical (marked with ?), and the same is valid for the clause (177-b). However, both clauses are totally fine for me and other speaker.

    c. *I   malati furono   tornat-i   a prendere dopo la
        the ill   be.PST.3PL go.back.PRTC-PL.M to fetch.INF after the
        visita.
        examination
        'The ill were gone back to fetch after the examination.'

Passivization of motion verbs is surprising, since motion verbs are unaccusative, and should not take any external argument. However, only some particular combination of motion verbs can be passivized, such as *andare a prendere* 'go and fetch', *passare a salutare* 'drop in to greet'. These restrictions may show that passivization could be explained in a different way, rather than with the idea that these verbs selects for an external argument (under which, by the way, passivization of motion verbs could not be explained). Further research is needed here.

    As a final remark, it is noteworthy that passivization of aspectual verbs is influenced by other factors, which need to be investigated. In fact, the clause (176-a) becomes clearly ungrammatical with a different tense specification, such as in the present tense (178-a), or the perfect tense (178-b).

(178)   a. *Queste case   sono   iniziat-e   a costruire questa mattina.
            these   houses be.PRS.3PL begin.PRTC-PL.F to build.INF this   morning
            'These houses are started to build this morning.'

        b. *Queste case   sono   stat-e   iniziat-e   a costruire
            these   houses be.PRS.3PL be.PRTC-PL.F begin.PRTC-PL.F to build.INF
            venerdì mattina.
            this   morning
            'These houses have been started to build on Friday morning.'

To conclude, passivization indicates a clear difference between modal verbs and other restructuring verbs (but not all of them), which might be due to the fact that aspectual verbs initiate a thematic relation with their arguments. However, the data are not very clear and there could be something different going on.

    The next test is the interpretation of the passive clause. We saw in section §5.8.1 that if the complement of a raising verb is passivized, the interpretation is the same as if the complement is active, whereas in control the meaning of the two clauses is different.

    Aspectual verbs like *cominciare* 'start' behave as a raising verb with respect to this test, since the meaning of the clauses in (179-a,b) is the same.

(179)   a. Teresa comincia   ad invitare   Giulia ad ogni   festa.
            Teresa start.PRS.3SG to invite.INF Giulia to every party
            'Teresa starts to invite Giulia to every party.'

        b. Giulia comincia   ad esser invitat-a   da Teresa ad ogni festa.
            Giulia start.PRS.3SG to be.INF invite.PRTC-SG.F by Teresa to every party
            'Giulia starts to be invited by Teresa to every party.'
            → 'Giulia is invited.'

Other verbs, such as *provare* 'try', behave as control verbs, as the different meaning of clauses (180-a,b) shows.

(180)   a.   Teresa prova   ad invitare   Giulia ad ogni   festa.
                Teresa try.PRS.3SG to invite.INF Giulia to every party
                'Teresa tries to invite Giulia to every party.'

         b.   Giulia prova   ad esser   invitat-a   da Teresa ad ogni   festa.
                Giulia try.PRS.3SG to be.INF invite.PRTC-SG.F by Teresa to every party
                'Giulia tries to be invited by Teresa to every party.'
                → 'Teresa tries to invite Giulia.'
                → 'Giulia tries to be invited.'

Similarly, some motion verbs as *tornare a* 'go back to' have a raising behavior, as shown in (181-a,b).

(181)   a.   Teresa torna   a rimproverare Giulia ad ogni   occasione.
                Teresa go.back.PRS.3SG to scold.INF   Giulia to every occasion
                'Teresa begins again to scold Giulia in every situation.'

         b.   Giulia torna   ad esser   rimproverat-a   da Teresa ad ogni
                Giulia go.PRS.3SG to be.INF fetch.PRTC-SG.F by Teresa to every
                occasione.
                occasion
                'Giulia begins again to be scolded by Teresa in every situation.'
                → 'Giulia is scolded.'

Other clauses with motion verbs are not completely well-formed with a passive complement: this is the case of *andare a* (cf. the question marks in (182-b), but note that the meaning of the clauses (182-a,b) is the same).

(182)   a.   Teresa va   a prendere Giulia ad ogni   festa.
                Teresa go.PRS.3SG to fetch.INF Giulia to every party
                'Teresa goes to fetch Giulia at every party.'

         b. ??Giulia va   ad esser   pres-a   da Teresa ad ogni   festa.
                Giulia go.PRS.3SG to be.INF fetch.PRTC-SG.F by Teresa to every party
                'Giulia goes to be fetched by Teresa at every party.' → 'Giulia is fetched.'

Looking now at quirky case, it is retained with the aspectual *cominciare* (183-a), but not with the aspectual *provare* (183-b). This means that the first behaves as a raising verb, the second as a control verb.

(183)   a.   Da   quando la=mangio   io,   anche a
                from when   ACC.3SG.F=eat.PRS.1SG NOM.1SG to   Paolo.DAT.3SG.M
                Paolo   ha   cominciato a   piacere la   pizza.
                have.PRS.3SG start.PRTC to   like.INF the   pizza
                'Since I eat it, Paolo has begun to like pizza as well.'

  b. *A Paolo   prova a piacere la pizza, ma lui
    to Paolo.DAT.3SG.M try.PRS.3SG to like.INF the pizza but NOM.3SG.M
    non la=mangia   volentieri.
    not ACC.3SG.F=eat.PRS.3SG willingly
    '*Paolo tries to like pizza, but he doesn't eat it willingly.'

The same situation arises for motion verbs: the verb *tornare a* keeps quirky case (184-a), whereas the sentence with the verb *andare a* is not fully grammatical (184-b).

(184) a. Dopo tanti anni, a Paolo   torna   a piacere la
    after many years to Paolo.DAT.3SG.M go.back.PRS.3SG to like.INF the
    pizza.
    pizza
    'After many years, Paolo likes pizza again.'

  b. ??A Paolo   va   a piacere la pizza sempre di più.
    to Paolo.DAT.3SG.M go.PRS.3SG to like.INF the pizza always of more
    'Paolo likes pizza always more and more.'

  Another test is the preservation of the idiomatic meaning. If we look at subject-idioms, the fixed meaning is preserved in raising constructions, but it is not kept in control constructions. An example of subject-idiom is the phrase *i pesci abboccano* 'the fishes bite' with the meaning of 'people are fooled'. If this idiom is combined with an aspectual verb such as *cominciare*, the idiomatic meaning is preserved. With other aspectual verbs such as *provare* the idiomatic meaning is lost and only the literal meaning is possible.[53]

(185) a. Il nostro piano ha   funzionato. I pesci cominciano ad
    the our plan have.PRS.3SG work.PRTC the fishes start.PRS.3PL to
    abboccare.
    bite.INF
    'Our plan has worked. People start to be fooled.'

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[53]The same test can be applied to modal verbs, which in fact preserve the idiomatic reading.

(i) Il nostro piano è   perfetto. I pesci devono abboccare per forza.
  the our plan be.PRS.3SG perfect the fishes must.PRS.3PL bite.INF by force
  'Our plan is perfect. People must be really fooled.'

I have not presented this test in section §5.8.1 only because it is not relevant for auxiliary selection. In fact, in order to verify if the modal sentences with HAVE and BE both maintain the idiomatic meaning, one would need a subject-idiom with an unaccusative verb, so that auxiliary switch becomes possible. I have in mind only *Pietro torna indietro* 'a thing that has been lent is given back' (literally: Pietro comes back). This idiom sounds a bit odd when combined with a restructuring verb, since it is not flexible enough to be combined with other grammatical category without triggering the lexical meaning (*Pietro è dovuto tornare indietro immediatamente* 'Pietro had to immediately come back', '*a thing that has been lent had to be immediately given back'.

Alternatively, instead of an unaccusative idiom one could look at passivized idioms, such as *il dado è tratto* 'the die is cast'. However, this cannot be used with modals because modal verb cannot be passivized.

        b. *Il   nostro piano può   essere migliorato.   I   pesci provano
            the our   plan can.PRS.3SG be.INF improve.PRTC the fishes try.PRS.3PL
            ad abboccare, ma non ci   credono   ancora.
            to bite.INF   but not there believe.PRS.3PL yet
            '*Our plan can be improved. People try to be fooled, but they don't believe
            it yet.'

With respect to this test, the motion verb *tornare a* 'go back to' behaves as the aspectual *cominciare a* 'start' in preserving the idiomatic meaning. Other verbs such as *andare a* 'go to' or *mandare a* 'send to' do not retain the idiomatic meaning.

(186)   a. Il   nuovo piano ha   funzionato. I   pesci tornano   ad
            the new   plan have.PRS.3SG work.PRTC the fishes go.back.PRS.3PL to
            abboccare.
            bite.INF
            'The new plan has worked. People start to be fooled again.'
    b. *Il   nostro piano funzionerà.   I   pesci vanno   ad abboccare
            the our   plan work.FUT.3SG the fishes go.PRS.3PL to bite.INF
            presto.
            soon
            '*Our plan will work. People are going to be fooled soon.'

So far, I have provided the tests that investigate the raising/control distinction. Clearly, there is a split within the aspectual and the motion class. Some of these verbs are raising verbs that do not assign any Theta-role (the aspectual-begin type), whereas other verbs are probably lexical restructuring verbs or control verbs (the aspectual-try verb). The question is whether the verbs of the latter group involve control into CP or raising out of TP/*v*P. In what follows, I propose the diagnostics for the size of the clause that I have already presented for modal verbs in section §5.8.

One operation that is sensitive to the size of the clause is relative clause pied-piping. In Italian, this is excluded only in the presence of restructuring transparency effects. In section §5.8, I have argued that pied-piping is possible on a TP/CP, but not on a *v*P. Wurmbrand (2004: 1005) shows that relative clause pied-piping is possible with lexical restructuring verbs, but it is blocked when there are overt signs of restructuring. In addition, in German relative clause pied-piping is not possible on modal restructuring verbs. Hence, Wurmbrand (2004: 1006) concludes that lexical restructuring verbs can combine with either a restructuring infinitive or a full clausal non-restructuring infinitive (the former blocking pied-piping, the latter allowing it), whereas functional restructuring verbs obligatorily create monoclausal configurations with no optionality with respect to complementation.

As we have already seen in section §5.8, Italian modal verbs may or may not allow for relative pied-piping. Aspectual verbs behave in the same way: they allow for relative clause pied-piping when clitic climbing does not take place. The same can be said for

motion verbs. The following sentences present the data about aspectual and motion verbs. The corresponding clauses with the modal verbs can be found in Cinque (2004).

(187) a. il   Direttore, [a presentar=ti   al   quale], per il momento,
           the director   to introduce.INF=ACC.2SG to.the whom for the moment
           proprio non provo
           really   not try.PRS.1SG

       b. *il   Direttore, [a presentare   al   quale], per il momento, proprio
           the director   to introduce.INF to.the whom for the moment   really
           non ti=provo
           not ACC.2SG=try.PRS.1SG
           'the Director, to introduce you to whom, for the time being I really do not
           try'

(188) a. il   Direttore, [a presentar=ti   al   quale], per il momento,
           the director   to introduce.INF=ACC.2SG to.the whom for the moment
           proprio non vado
           really   not go.PRS.1SG

       b. *il   Direttore, [a presentare   al   quale], per il momento, proprio
           the director   to introduce.INF to.the whom for the moment   really
           non ti=vado
           not ACC.2SG=go.PRS.1SG
           'the Director, to introduce you to whom, for the time being I really do not
           go'

Hence, this test cannot distinguish between the different classes of restructuring verbs, since neither functional nor lexical restructuring verbs allow for relative clause pied-piping in the presence of transparency effects. As discussed in section §5.8, this test favors the CP analysis, but it does not exclude the TP approach. In this dissertation, I adopt the TP-option: I argue that restructuring is always monoclausal, and the complement can be of different sizes. This analysis could also be extended to the verbs in examples (187-a) and (188), and could explain why different classes of restructuring verbs pattern together according to this test.

A similar type of operation is cleft, which is fine when clitic climbing has not taken place, exactly as we saw for modal verbs.

(189) a. È   proprio [a parlar=ti   dei   suoi problemi]ᵢ che
           be.PRS.3SG really   to talk.INF=DAT.2SG of.the his   problems that
           verrà   tᵢ.
           come.FUT.3SG

       b. *È   proprio [a parlare   di   questi problemi]ᵢ che
           be.PRS.3SG really   to talk.INF of.the his   problems that
           ti=verrà   tᵢ.
           DAT.2SG=come.FUT.3SG
           'It's really to talk about his problems that he'll come to you.'

(Cinque 2004: 134)

(190)   a.   È   proprio [a parlar=ti   dei   suoi problemi]ᵢ che
             be.PRS.3SG really   to talk.INF=DAT.2SG of.the his   problems that
             comincerà   tᵢ.
             start.FUT.3SG

        b.   *È   proprio [a parlare di   questi problemi]ᵢ che
             be.PRS.3SG really   to talk.INF of.the his   problems that
             ti=comincerà   tᵢ.
             DAT.2SG=start.FUT.3SG
             'It's really to talk about his problems to you that he'll start.'

Another operation that Wurmbrand (2004) evaluates is extraposition, which should be impossible for functional restructuring and possible for lexical restructuring. In general, the complement of the restructuring verb can surface in a non adjacent position to the restructuring verb only when there are no overt transparency effects. In (191-a,b) is an example with a modal verb from Cinque (2004), in (191-c,d) one with an aspectual verb.

(191)   a.   Piero voleva   - ma francamente adesso non so   se
             Piero want.PST.3SG but frankly   now   not know.PRS.1SG if
             vorrà   ancora - parlar=ne   con Gianni.
             want.FUT.3SG still   talk.INF=of with Gianni

        b.   *Piero ne=voleva   - ma francamente adesso non so   se
             Piero of=want.PST.3SG but frankly   now   not know.PRS.1SG if
             vorrà   ancora - parlare con Gianni.
             want.FUT.3SG still   talk.INF with Gianni
             'Piero wanted to - but frankly now I don't know if he still will - speak about
             it with Gianni.'   (Cinque 2004: 135)

        c.   Piero aveva   cominciato - ma francamente adesso non
             Piero have.PST.3SG start.PRTC but frankly   now   not
             so   se smetterà   - a parlar=ne   con Gianni.
             know.PRS.1SG if stop.FUT.3SG   to talk.INF=of with Gianni

        d.   *Piero ne=aveva   cominciato - ma francamente adesso non
             Piero of=have.PST.3SG start.PRTC but frankly   now   not
             so   se vorrà   - a   parlare con   Gianni.
             know.PRS.1SG if stop.FUT.3SG talk.INF with   Gianni
             'Piero wanted to - but frankly now I don't know if he still will - speak about
             it with Gianni.'

Note that other types of movement, such as topicalization and focus movement are always possible on restructuring complements. It does not matter if there are any transparency effect, as I have shown for modal verbs in section §5.8 (example (149)). The same applies to motion and aspectual verbs, as shown in (192) and (193).

(192) a. [A parlar=ti   dei   suoi problemi], verrà!   Vedrai.
           to speak.INF=DAT.2SG of.the his   problems come.FUT.2SG see.FUT.2SG

       b. [A parlare   dei   suoi problemi], ti=verrà!   Vedrai.
           to speak.INF of.the his   problems DAT.2SG=come.FUT.2SG see.FUT.2SG
           'To speak about his problems (focus), he'll come to you! You'll see.'

(193) a. [A parlar=ti   dei   suoi problemi], comincio   subito!
           to speak.INF=DAT.2SG ´of.the his   problems begin.PRS.1SG immediately

       b. [A parlare   dei   suoi problemi], ti=comincio   subito!
           to speak.INF of.the his   problems DAT.2SG=begin.PRS.1SG immediately
           'To speak to you about his problems (focus), I immediately begin.'

(194) a. [A far=lo   domani], proverò   senz'altro!
           to do.INF=ACC.3SG.M tomorrow try.FUT.1SG without other

       b. ?[A fare   domani], lo=proverò   senz'altro!
           to do.INF tomorrow ACC.3SG.M=try.FUT.1SG without other
           'To do it tomorrow (focus), I'll definitely try.'

As far as ellipsis is concerned, example (195-b) illustrates that it is blocked in the presence of clitic climbing, as is the case with modal verbs (cf. section §5.8). Note that the particle of the aspectual verb must be deleted in correspondence of the elliptic site, as shown in (195-c).

(195) a. Paolo doveva   raccontar=ti   una cosa, ma non ha
           Paolo must.PST.3SG tell.INF=DAT.2SG a   thing but not have.PRS.3SG
           neppure cominciato Δ.
           not even start.PRTC

       b. *Paolo ti=doveva   raccontare una cosa, ma non
           Paolo DAT.2SG=must.PST.3SG tell.INF   a   thing but not
           ti=ha   neppure cominciato Δ.
           have.PRS.3SG not even start.PRTC

       c. *Paolo doveva   raccontar=ti   una cosa, ma non ha
           Paolo must.PST.3SG tell.INF=DAT.2SG a   thing but not have.PRS.3SG
           neppure cominciato a Δ.
           not even start.PRTC to
           'Paolo wanted to tell you something, but he has not even started.'

However, a closer inspection reveals that sentences with aspectual verbs can undergo ellipsis even in the presence of clitic climbing, when the clitic is an accusative object.

(196) a. Paolo l=avrebbe   finit-a   di fare   prima di
           Paolo ACC.3SG.F=have.COND.3SG finish.PRTC-SG.F to do.INF before of
           sera,   ma non l=ha   neppure cominciat-a   Δ.
           evening but not ACC.3SG.F=have.PRS.3SG not even start.PRTC-SG.F
           'Paolo would have finished it before evening, but he has not even started.'

b. Questa storia, Paolo l=ha   cominciat-a   a
   this   story Paolo ACC.3SG.F=have.PRS.3SG start.PRTC-SG.F to
   raccontare, e   Teresa l=ha   finita   Δ.
   tell.INF   and Teresa ACC.3SG.F=have.PRS.3SG finish.PRTC-SG.F
   'This story, Paolo has started to tell it, and Teresa has finished it.'

The fact that the particle of the aspectual verb is not present when its complement undergoes deletion, together with the possibility of deletion in the presence of clitic climbing of a direct object, could show that these are indeed cases of nominal complementation. This means that the deleted constituent in (195-a) is not the verbal phrase *a raccontar=ti una cosa*, but it is rather a pronoun that refers to the whole antecedent clause. If this is true, ellipsis of the complement of a restructuring aspectual verb might be indeed impossible. If ellipsis is impossible, the complement of the aspectual verb is either a *v*P (in case of clitic climbing), or a CP (without clitic climbing), and none of these can undergo ellipsis.[54]

As far as clausal negation is concerned, this is possible when there are no overt transparency effects, as we saw for modal. This means that the complement of the aspectual verb is either TP or CP, when it contains negation. In section §5.8 I have proposed that it is a TP complement.

(197)   a. Avrei   cominciato a non incontrar=la   piú,   se
          have.COND.1SG start.PRTC to not meet.INF=ACC.3SG.F anymore if
          lei   non mi=avesse   telefonato.
          NOM.3SG.F not DAT.1SG=have.CONJ.PST.3SG call.PRTC

   b. *La=avrei   cominciat-a a non incontrare piú,   se
          ACC.3SG.F=have.COND.1SG start.PRTC to not meet.INF   anymore if
          lei   non mi=avesse   telefonato.
          NOM.3SG.F not DAT.1SG=have.CONJ.PST.3SG call.PRTC
          'I would have started not to meet her anymore, if she wouldn't have called me.'

---

[54]The CP-case would be similar to non-restructuring non-finite complementation of verbs such as *dire* 'say', presented in example (1) at the beginning of this chapter. In this case, ellipsis of the non-finite complement is bad even without a pronoun.

(i)   a. *Paolo ha   detto   di essere malato, e   anche Teresa ha   detto.
         Teresa have.PRS.3SG say.PRTC to be.INF sick   and also   Teresa have.PRS.3SG say.PRTC
         'Paolo has said that he is sick, and also Teresa has said it.'
         (grammatical only if Teresa is a topicalized direct object, with the meaning: 'Paolo has said that he is sick, and that also Teresa is sick).'
   b. Paolo ha   detto   di essere malato, e   anche Teresa
         Teresa have.PRS.3SG say.PRTC to be.INF sick   and also   Teresa
         lo=ha   detto.
         ACC.3SG.M=have.PRS.3SG say.PRTC

(198)   a.   Questo compito, torno   sempre a non voler=lo
              this   task   go.back.PRS.1SG always to not want.INF=ACC.3SG.M
              fare.
              do.INF

         b.   *Questo compito, lo=torno   sempre a non voler
              this   task   ACC.3SG.M=go.back.PRS.1SG always to not want.INF
              fare.
              do.INF
              'This task, I never want to do it.'

All these tests show that aspectual and motion verbs behave exactly as modal verbs as far as different syntactic operations are concerned. Hence, it is possible to extend the analysis of modal verbs also to these classes of restructuring verbs.

Other hallmarks of functional behavior are co-occurrence and ordering restrictions. Cinque (2001, 2004) has shown that modal, aspectual and motion verbs follow strict ordering restrictions.

(199)   a.   Gianni li=suole   provare a chiamare.
              Gianni ACC.3PL.M=use.PRS.3SG try.INF to call.INF
              'Gianni uses to try to call them.'

         b.   *Gianni li=prova   a soler   chiamare.
              Gianni ACC.3PL.M=try.PRS.3SG to use.INF call.INF
              'Gianni tries to use to call them.'   (Cinque 2001: 143)

(200)   a.   Gianni non la=riuscì   a finire   di imparare a
              Gianni not ACC.3SG.F=manage.PST.3SG to finish.INF to learn.INF at
              memoria.
              memory
              'Gianni didn't manage to finish to learn it by heart.'

         b.   *Gianni non la=finì   di riuscire   a imparare a
              Gianni not ACC.3SG.F=finish.PST.3SG to manage.INF to learn.INF at
              memoria.
              memory
              'Gianni didn't finish to manage to learn it by heart.'   (Cinque 2001: 145)

The co-occurrence restrictions above are present both with and without overt transparency effects. According to Cinque (2001, 2004), this should indicate that modal, aspectual and motion verbs always have a functional behavior, corresponding to the sequence of functional heads.

However, if some combinations of restructuring verbs are excluded, others are actually possible. In (201), I propose some examples of series of restructuring verbs. Cinque (2001) also presents some cases where the sentences with inverted order are not completely excluded, the judgment being (?). When both orders are possible, it is because a type of aspectual head precedes and follows a low type and a high type of another aspectual head (for instance, terminative aspect follows the higher repetitive aspect head and precedes

the lower one, Cinque 2001: 140).

(201) a. Ha   cominciato a provare a vincere alla   lotteria.
           have.PRS.3SG begin.PRTC to try.INF to win.INF at.the lottery
           'S/he has began to try to win the lottery.'

       b. Ha   provato a cominciare a vincere alla   lotteria.
           have.PRS.3SG try.PRTC to begin.INF   to win.INF at.the lottery
           'S/he has tried to begin to win the lottery.'

       c. Ha   cominciato a volere   vincere alla   lotteria.
           have.PRS.3SG begin.PRTC to want.INF win.INF at.the lottery
           'S/he has began to want to win the lottery.'

       d. Ha   voluto   cominciare a vincere alla   lotteria.
           have.PRS.3SG want.PRTC begin.INF   to win.INF at.the lottery
           'S/he has wanted to begin to win the lottery.'

It is noteworthy that modal verbs allow for different orderings as well. Series of modal verbs are for sure not excluded, even within the same category (Cardinaletti and Shlonsky 2004). Cinque (2001) does not propose examples with two modal verbs, but only of a modal verb and an aspectual one. Indeed, modal verbs can be found in different positions, with the relevant changes in meaning, as shown in (202).

(202) a. Teresa vuole   poter   andare a casa.
           Teresa want.PRS.3SG can.INF go.INF at home
           'Teresa wants to be able to go at home'

       b. Teresa può   voler   andare a casa.
           Teresa can.PRS.3SG want.INF go.INF at home
           'It is possible that Teresa wants to go at home.'

           'Teresa is able to want to go at home.'

The modal verbs here are epistemic or evidential depending on the position, exactly in the same way as there are different modalities for aspectuals, one high, one low (Cinque 2001; Wurmbrand 2004).

To conclude, in Italian different combinations of aspectual verbs may or may not be subject to co-occurrence restrictions, exactly as is the case for modal verbs. Ultimately, these data show that aspectual verbs have a functional behavior.

The next test used by Wurmbrand (2004) concerns optionality: lexical restructuring is optional, whereas functional restructuring always takes place. Under the present analysis, restructuring verbs always enter restructuring configurations. The presence or absence of restructuring transparency effects, and the availabilty of certain syntactic operations, are due to the different types of complements that restructuring verbs may select.

If we look at the selectional properties of aspectual and motion verbs, it is true that they also allow for DP complements. However, in this case the aspectual particle that characterizes these verbs when they take a restructuring complement must be omitted.

(203) a. Comincio   **a** [fare un disegno].
           start.PRS.1SG to do   a   drawing

  b. Comincio   [un disegno].
      start.PRS.1SG a   drawing

  c. *Comincio   [fare un disegno].
      start.PRS.1SG do   a   drawing

  d. *Comincio   **a** [un disegno].
      start.PRS.1SG to a   drawing

In (203), two types of verbs are present: a functional one in (203-a), a lexical one in (203-b). The verbs *cominciare, finire, provare* 'begin', 'finish', to try', among others, are lexical, transitive verbs that select for DPs, assign accusative case and introduce an external argument. The lexicon of Standard Italian also contains the corresponding functional verbs, which are characterized by the same lexical roots followed by an aspectual particle. The verbs *cominciare a, finire di, provare a* 'begin to', 'finish to', to try to', among others, always select for a verbal phrase and enter monoclausal configurations. Thus, in the same way in which modals allow only for verbal complements (with the exclusion of 'want', but cf. Wurmbrand (2003); Cinque (2004); Grano (2015) for discussion of this predicate) also aspectuals allow just for a verbal complement in their restructuring form. Restructuring in the sense of reduced complementation is always obligatory.

Table 5.8 summarizes the outcome of the diagnostics that I have applied to Italian restructuring verbs. The first six columns present the results of the tests for some different classes of Italian restructuring verbs: modals, inceptive aspectuals (begin), conative aspectuals (try), motions (go), repetitive motions (go back), causatives (send). The last two columns proposes as a comparison the results of Wurmbrand's (2003; 2004) work for functional restructuring and lexical restructuring verbs.

	modal	aspectual (begin)	aspectual (try)	motion (go)	motion (go back)	other (send)	functional restructuring	lexical restructuring
Animacy restrictions	NO	NO	YES	?	NO	YES	NO	YES
Weather verbs	YES	YES	YES	YES	YES	NO	YES	NO
Volitional adverbial	YES	YES	YES	YES	YES	YES		
Scope interactions	YES	YES	NO	YES	YES	NO	YES	NO
Quantifier interactions	YES	YES	YES	YES	YES	?	YES	NO
Matrix passive	NO	YES	NO	YES	NO	YES	NO	YES
Same interpretation of embedded passive	YES	YES	NO	?	YES	NO		
Passive embedded	YES	YES	YES	YES	YES	NO		
Case retained	YES	YES	NO	NO	YES	NO	YES	NO
Subject idioms	YES	YES	NO	NO	YES	NO		
Relative pied piping	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	NO	YES
Extraposition, cleft	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	NO	YES
Topicalization	YES	YES	YES	YES	YES	YES		
Ellipsis	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO		
Negation	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	NO	YES
Co-occurrence restrictions	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO	YES	NO
Restructuring is optional	NO	NO	NO	NO	NO	NO	NO	YES

Table 5.8: Properties of Italian restructuring verbs.

As Table 5.8 shows, some aspectual and motion verbs such as *cominciare a* 'begin to' and

tornare a 'go back to' behave similarly to modal verbs (expect for the test of passivization). Other verbs such *mandare a* 'send to' resemble the behavior of Wurmbrand's (2003; 2004) lexical restructuring verbs. Other predicates, such as the aspectual *provare a* 'try to' and the motion *andare a* 'go to' are located in between these two classes.

Some aspectual verbs behave as modal and raising predicates in being non-thematic. Crucial tests for this claim are embedding of weather verbs, same interpretation with passive and active complements, idiom preservation. Instead, other tests such as passivization shows that the verbs might also receive a control analysis. Hence, it could be that these verbs present both a control variant and a raising variant (as the verb *volere* 'want' has a control and ECM reading). In general, the availability of lexical and functional characteristics depends on the single verbs. In Italian, the classes of aspectual and motion verbs are not monolithic, but rather they contain verbs that behave similarly to lexical verbs to different extents. For example, within the aspectual predicates the verb *cominciare* clusters with modals, whereas *provare* tends to behave more lexically. It is indeed true that some aspectual verbs and motion verbs behave as lexical restructuring (Wurmbrand 2004). Hence, in Italian there is a cline between "functional" and "lexical" restructuring verbs, without a neat split corresponding to the distinction between modal, aspectual and motion verbs.

In Table 5.9 I represent the different classes in relation to some key phenomena related to restructuring. Restructuring verbs are located along a cline of functionality according to the presence or absence of some functional characteristics.

	modal	aspectual-begin	aspectual-try	motion-go	send
athematic properties	+	+	−?	−?	−
clitic climbing	+	+	+	+	+
auxiliary switch	+	− (+)	−	−	−
long object movement	−	+	+	−?	+

Table 5.9: Functional characteristics of restructuring verbs.

As Table 5.9 illustrates, Italian aspectual and motion verbs are not completely different from functional verbs, but they rather pattern with modal verbs at least for some properties. Prototypically restructuring verbs (modal verbs) are characterized by clitic climbing and auxiliary switch. Auxiliary switch is possible only with modal verbs and with some aspectual verbs. It is noteworthy that the only aspectual verbs that occasionally show auxiliary switch are the verbs of the type of *cominciare a* 'start to', which in fact behave more similarly to restructuring verbs than other aspectual verbs do, as shown in Table 5.8. In some ways, these verbs are more functional than other aspectual verbs.

Long object movement depends on the possibility of being passivized, and hence it is considered a hybrid property: the verb should be lexical enough to be passivized, but functional enough not to involve CP boundaries.

A relevant, remaining question concerns how to analyze these hybrid predicates. In

particular, whether they require a control analysis or a small reduced complement. However, since this dissertation deals with auxiliary switch, I leave the issue about the exact syntactic structure open. What I wanted to show in this section is that (at least some) aspectual and motion verbs pattern very similarly to modal verbs. Given their similar behavior, the absence of auxiliary switch for aspectual and motion verbs cannot be attributed to the fact that these are control verbs.

In the next sections, I show why these verbs do not allow (or only occasionally allow) for auxiliary switch.

5.9.2 The v of aspectual and motion verbs

In this chapter, I have described how monoclausal properties derive from syntactic features, such as the presence of a person probe on v_{restr} (auxiliary selection) and the c-selectional feature of the functional head v_{restr} (clitic climbing). Modal verbs are prototypical restructuring verbs because they are selected by a "special" v that bears a double [Infl] feature, a person probe, and can select complements of different sizes, crucially smaller than a CP. I now provide a tentative analysis for aspectual and motion verbs, which do not allow for auxiliary switch (to be revised). I repeat here again the data presented in section §5.3.1. As we see, aspectual verbs invariably take HAVE as the perfect auxiliary (204), and motion verbs BE (205).

(204)   a.   Teresa ha   cominciato a andar=ci   tre   mesi   fa.
             Teresa have.PRS.3SG start.PRTC to go.INF=there three months ago

        b.   *Teresa è   cominciat-a   a andar=ci   tre   mesi   fa.
             Teresa be.PRS.3SG start.PRTC-3SG.F to go.INF=there three months ago
             'Teresa started to go there three months ago.'

        c.   Teresa ha   provato a andar=ci   tre   mesi   fa.
             Teresa have.PRS.3SG try.PRTC to go.INF=there three months ago

        d.   *Teresa è   provat-a   a andar=ci   tre   mesi   fa.
             Teresa be.PRS.3SG try.PRTC-3SG.F to go.INF=there three months ago
             'Teresa tried to go there three months ago.'

(205)   a.   Teresa è   andat-a   a mangiare la   torta.
             Teresa be.PRS.3SG go.PRTC-SG.F   to eat.INF   the cake

        b.   *Teresa ha   andato/-a   a mangiare la   torta.
             Teresa have.PRS.3SG go.PRTC/PRTC-SG.F   to eat.INF   the cake
             'Teresa went to eat the cake.'

        c.   Teresa è   tornat-a   a cucinare come una volta.
             Teresa be.PRS.3SG go.back.PRTC-SG.F to cook.INF as   a   time

        d.   *Teresa ha   tornato/-a   a cucinare come una
             Teresa have.PRS.3SG go.back.PRTC/PRTC-SG.F to cook.INF as   a
             volta.
             time
             'Teresa is back to cooking like she used to.'

I propose that the differences between aspectual, motion, and modal verbs, such as the lack of auxiliary switch or the possibility to be passivized, can be derived with different v heads. Modal verbs are characterized by v_{restr}, whose distinctive trait is the presence of a double [Infl] feature (cf. section §5.6.1). Aspectual and motion verbs are characterized by a v that closely resembles the v that corresponds to their lexical use: aspectual verbs combine with a v similar to transitive v, motion verbs with a v similar to defective v. The inventory of restructuring vs is in (206).

(206)   a. v_{restr}: [Infl:__] $\succ$ [uInfl:non-fin] $\succ$ [uπ:__] $\succ$ [•D•]

   b.   defective v_{restr}: [Infl:__] $\succ$ [uInfl:non-fin]

   c. v_{asp}: [Infl:__] $\succ$ [uπ:__] $\succ$ [•D•]

   d. v_{mot}: [Infl:__] (= raising v = unaccusative v)

These vs are similar to the lexical transitive v and unaccusative v, but they have different c-selectional requirements (for other differences concerning case, Theta-role assignment and so on, cf. section §5.9.2.1). These restructuring verbs select for TPs or vPs, whereas lexical verbs select for DPs or CPs (cf. for instance the verb *dire* 'say' in section §5.2.1). Moreover, they are also distinguished by the presence of an aspectual particle (*a, di* 'to', 'of'). This particle disappears when these verbs are used as lexical verbs and select for DPs.

The possible different sizes of the complement selected by restructuring verbs are summarized in Table 5.10.

	modal verbs	aspectual verbs	motion verbs	lexical verbs
TP/vP/AspP	+	+	+	−
CP/DP	−	− (+ if without the particle)	− (+ if without the particle)	+

Table 5.10: C-selectional requirements: size of the complement.

Aspectual and motion vs share the TP/vP selectional requirement with v_{restr}. However, these vs are "more lexical" than v_{restr} because they do not bear a double [Infl] feature.[55] The main featural differences on the v heads involved in restructuring are represented in Table 5.11.

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[55]The reader may wonder how the embedded non-finite dependent tense is obtained without the valued Infl-feature [uInfl:non-fin] on the aspectual and motion v. Morphologically, the embedded verb is anyway realized as a non-finite form because in Italian the infinitive is the elsewhere form for verbal categories. On the semantic level, I suppose that the sequence of tense interpretation is the default as well, when the syntax does not hand in any marked tense features to LF. For the phenomenon of sequence of tense, cf. Enç 1987; Ogihara 1995; for the simultaneous tense interpretation in restructuring, cf. Wurmbrand 2003, 2014; Grano 2015.

Note that there could also be a double [Infl] feature on the aspectual and motion v, if one admits a different feature ordering. For the aspectual v, the person probe should be ordered before [uInfl:non-fin]. In this case, the restructuring and aspectual heads look as follows.

(i)   a. v_{restr}: [Infl:__] $\succ$ [uInfl:non-fin] $\succ$ [uπ:__] $\succ$ [•D•]

   b. v_{asp}: [uπ:__] $\succ$ [Infl:__] $\succ$ [uInfl:non-fin] $\succ$ [•D•]

	modal verbs	aspectual verbs	motion verbs	lexical verbs
v [Infl] [uInfl] [uπ]	+	−	−	−
v [Infl] [uπ]	−	+	−	+
v [Infl]	−	−	+	+

Table 5.11: Features of restructuring vs.

In this chapter, we saw that the so-called transparency effects derive either from the different sizes of the complement of the restructuring verb (clitic climbing), or from the type of v and the type of complement (auxiliary switch). The optionality of these effects is a consequence of the optionality for the size of the clause. As Table 5.10 shows, all restructuring verbs are characterized by the ability of taking different complements and not only DPs. Since all restructuring verbs can select for a vP complement, they all allow for clitic climbing. In fact, clitic climbing takes place when the complement of an aspectual or motion verb is a vP complement, as for modal verbs.

Auxiliary switch is instead only possible with a v that bears a π-probe and a double [Infl] feature, i.e. only with modal verbs. For other verbs, the auxiliary crucially depends on the presence or absence of a person probe on v. As shown in Table 5.11, the v of aspectual verbs bears a person probe, with the consequence that the auxiliary will be realized as HAVE, as is the case for transitive verbs. For motion verbs, v does not contain any person probe, with the consequence that the auxiliary will be always realized as BE, as is the case for unaccusative verbs.

Therefore, I consider aspectual and motion verbs as *semilexical verbs*, adopting a formulation proposed by Cardinaletti and Shlonsky (2004). According to Cardinaletti and Shlonsky (2004), there are three types of verbs: lexical verbs, functional verbs, and quasi-functional verbs. The quasi-functional verbs, unlike the functional ones, are associated with their own auxiliary. When they form a restructuring configuration, they impose their own auxiliary and are opaque for the transmission of the auxiliary by a lower predicate. My proposal is similar to Cardinaletti and Shlonsky's (2004). I implement their intuition by arguing that the lack of auxiliary switch is caused by the lack of the sequence of person probing Perf-v_{restr}-v, enabled by v_{restr}. These verbs impose "their own" auxiliary in the sense that it is their v, instead of v_{restr}, that determines the clausal auxiliary. An aspectual verb always imposes HAVE, no matter what is embedded, since its v bears a person probe, whose domain is not restricted by any previous operation (because the head does not contain any [uInfl] probe). Hence, the person probe on this v is always able to find a person feature on a DP in the specifier of the low T or v (depending on the type of complement). This is different from root clauses, where Agree on transitive v fails if the direct object is a ϕ-defective item. The derivation for an aspectual verb with a vP complement containing an unaccusative verb is shown in tree (207) (where v_{asp} probes the internal argument in Spec,v).

(207)

PerfP
  Perf
    [ʉInfl:perf]
    [ʉπ:α]
    (b) Infl (c) π
  v_{asp}P
    DP
      [φ:α]
      [case:__]
    v_{asp}′
      v_{asp}
        [Infl:perf]
        [ʉπ:α]
        [•D•]
      VP
        V
        aspectual
        vP
          <DP>
            [φ:α]
            [case:__]
          (a) π
          v′
            v
              [Infl:__]
            VP
              V
              <DP>
                [φ:α]
                [case:__]
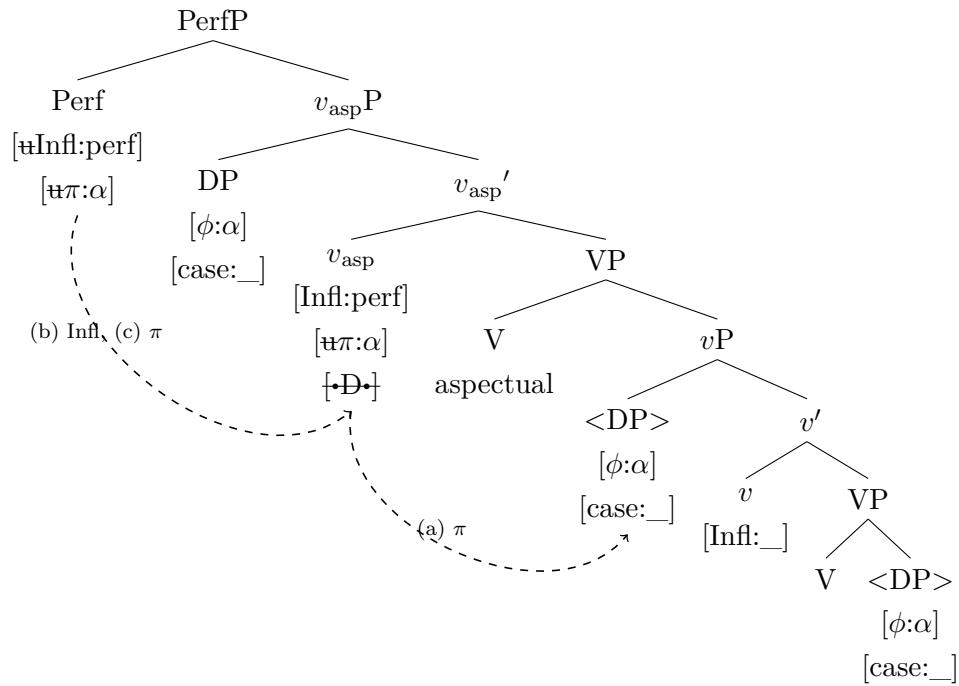
A motion verb always causes BE insertion because of the lack of a person probe on its v, as shown in tree (208) for a vP complement with a transitive verb.

(208)

PerfP
  Perf
    [ʉInfl:perf]
    [ʉπ:__]
    (a) Infl ✗ (b)π
  v_{mot}P
    v_{mot}
      [Infl:perf]
    VP
      V
      motion
      vP
        DP
          [φ:β]
          [case:__]
        v′
          v
            [Infl:__]
            [case:acc]
            [ʉπ:α]
            [•D•]
          VP
            V
            DP
              [φ:α]
              [case:acc]
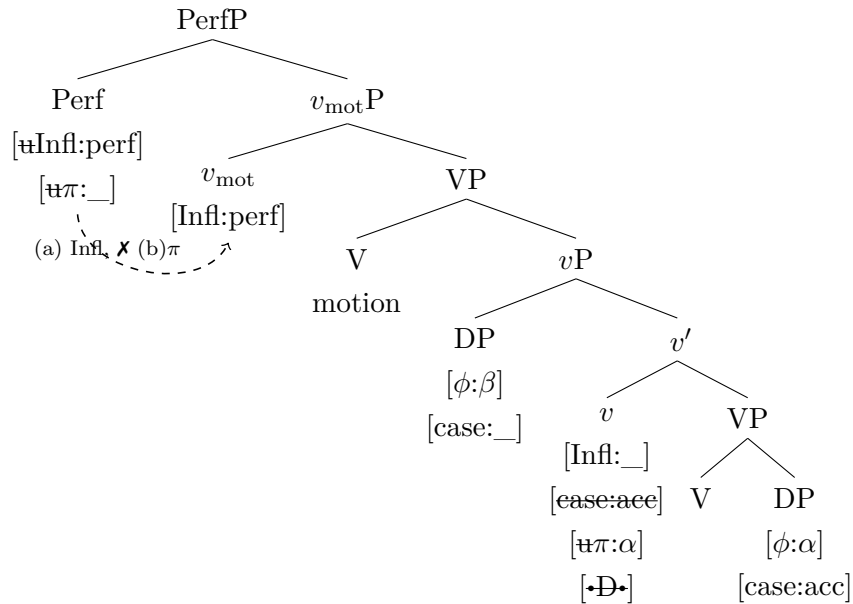
5.9.2.1 More on the aspectual v

I have proposed that the aspectual v is similar to transitive v and is characterized by the features in (209).

(209) v_{asp}: $[\text{Infl:}\_] \succ [\text{u}\pi\text{:}\_] \succ [\cdot\text{D}\cdot]$

Aspectual verbs, especially verbs such as *provare a* 'try to', behave similarly to transitive verbs because of the following characteristics: the general lack of auxiliary switch in favor of the auxiliary HAVE, the possibility of passivization of the aspectual verb, the (alleged) assignment of a Theta-role, the possibility to select a DP (but in this case the verb cannot be combined with the aspectual particle that characterizes it in its restructuring use). Hence, the reader may wonder whether it could be possible to reduce the set of different v heads in (206), by resorting to a simple transitive v for aspectual verbs, rather than making use of the special v_{asp} in (209). Let me now discuss this possibility.

A full argument structure v^* introduces the external argument and assigns it an external Theta-role. I said that in restructuring configurations the subject is introduced by the lower verb and then it is raised to the matrix position. This has been shown by Wurmbrand (1999) for modal verbs and it is generally assumed by the functional approach to restructuring (Cinque 2004; Grano 2015), but not for those aspectual verbs that involve lexical restructuring (Wurmbrand 1999, 2004). In lexical restructuring, the subject is an argument of the aspectual verb, and its interpretation as an argument of the embedded predicate is achieved via semantic control (Wurmbrand 2003, 2004).

I have argued that in Italian the diagnostics that hint at a raising analysis for modal verbs also return the identical result for aspectual verbs. In fact, the tests that I have proposed in section §5.9.1 do not constitute conclusive evidence for considering the syntactic structure of aspectual verbs different from the one of modal verbs (respectively, control versus raising).

Hence, if aspectual verbs behave as raising verbs and combine with a transitive v, we face the problem of accusative assignment, of the introduction of the external argument via the $[\cdot\text{D}\cdot]$ feature and of Theta-role assignment.

Let us start with accusative case assignment. If an aspectual verb embeds an unaccusative verb, there is no argument in the clause that bears accusative case. Similarly, if the embedded verb is transitive, the internal argument is marked as accusative, but this is due to the lower transitive v associated with the lexical verb. What happens to case assignment by the aspectual v? Following Bošković (2007), I assume that case features can remain unchecked on a head without causing any problem (cf. also my analysis of impersonal clauses without agreement, where nominative case is not assigned by T).[56] Hence, if restructuring involves a transitive v, accusative case is not assigned at all by it.

As for the $[\cdot\text{D}\cdot]$ feature, which introduces the external argument in a transitive clause, in restructuring it causes raising because there is no other DP present in the numeration. Therefore, instead of selecting a new argument, it acts as an EPP-feature and raises the

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[56]Another possibility is that case of the matrix v is assigned to the prepositional particle that these verbs need. Recall that aspectual verbs come with a prepositional "complementizer" (*a, di* 'to', 'of') when they introduce a restructuring complement, which disappears when they take a DP complement, as shown in (203). Hence, accusative case could be "absorbed" by the particle.

embedded DP to Spec,v.[57] Whatever mechanism is responsible for that, it is the very same that provokes raising of the DP under a raising verb such as 'seem'.

The remaining problem, which is not present in raising, is Theta-role assignment. As I have said in section §5.9.1, there is evidence that at least some aspectual verbs impose some restrictions on the types of arguments they can combine with. Further research is needed to verify if they really assign a full Theta-role or not. However, if the aspectual verb assign a Theta-role, this causes a violation of the Theta-criterion, since one argument receives two Theta-roles: one from the lexical verb, one from the aspectual predicate. Hence, independently of the special aspectual v or of the transitive v, one might need to address the problem of Theta-role assignment.

In order to explain this fact, it has been proposed that the assigned Theta-role is an adjunct Theta-role instead of a canonical Theta-role (Zubizarreta 1982; Roberts 1997; Cinque 2004). Aspectual predicates do not select their own arguments, but rather impose thematic restrictions on certain arguments in the clause by assigning adjunct Theta-roles that are not subject to the Theta-criterion.

An alternative, similar solution could be that the aspectual v does not assign a Theta-role, but it restricts the external argument position to certain arguments via *predicated restriction.* Under this approach, v carries out a licensing operation that semantically restricts the external argument position through function application or existential closure (Legate 2014) (cf. section §3.3.9.1 in chapter 3 for discussion). The subject of an aspectual verb would not bear two distinct Theta-roles, but rather a single, composed Theta-role, to which both verbs contribute.

Another solution would be to have a control structure in the case of transitive v in restructuring. This could be syntactic control, where the complement contains a PRO and it is possibly a TP or vP, rather than a CP. Alternatively, it has been proposed that these lexical restructuring infinitives are obligatory control infinitives that lack a syntactic (PRO) subject (Wurmbrand 2004, 2012). They select for VP complements and introduce the external argument, which is interpreted as the subject of the embedded VP via semantic control. As far as the syntactic control analysis is concerned, in section §5.8.1 I have not found clear evidence in favor of it. As for the semantic control approach, if restructuring aspectual verbs select for subject-less VPs, the wrong prediction under the present analysis is that clitic climbing should always be obligatory, which is not the case. Therefore, for Theta-role assignment I suggest to adopt the strategy of predicate restriction.

Based upon this discussion, I think that the use of a transitive v faces some problems that the v_{asp} solves. As proposed in section §5.9.2, aspectual verbs are selected by a special

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[57]In section §5.6.2, I have said that the EPP-feature is a Merge feature that inherently needs to be satisfied by Move. I have distinguished between two types of [·D·] features: EPP$_{ext}$, which triggers external Merge and is associated with a Theta-role (for instance, the one on full argument structure v), and EPP$_{int}$, which probes downward and triggers internal Merge, without assigning a Theta-role (for instance, the one on restructuring v or on T). In general, transitive v bears the former, but when it selects a restructuring complement it should bear the latter feature. I think this is an unwanted inconsistency. Hence, it confirms the need for a separate v_{asp} as in (209).

v_{restr} that I call v_{asp}, shown in (209). This means that v_{restr} comes in different flavors that are located along a cline of defectiveness, represented in Table 5.12. A similar featural organization has been proposed for transitive, quirky and unaccusative v in chapter 3.

	non-def v (modal)	def v (modal)	non-def v (aspectual)	def v (motion)
[Infl]	Infl:__	Infl:__	Infl:__	Infl:__
[uInfl]	uInfl:non-fin	uInfl:non-fin		
person probe	uπ:__	(uπ:__?)	uπ:__	
EPP	•D•		•D•	
c-selection	•T•, •v^*•	•v•	•T•, •v^*•, •v•	•T•, •v^*•, •v•
Θ-role assignment			Θ?	Θ?

Table 5.12: Features on the different v_{restr} heads.

Modal v_{restr} is characterized by a double [Infl] feature. It comes in a defective and non-defective version, which differ with respect to the presence of a [•D•] feature and the type of complement they select (and eventually, for a person probe: as I said, the analysis for modal verbs does not change depending on the presence or absence of a person probe on defective v_{restr}). The v of aspectual verbs is similar, with the difference that it bears a single [Infl], as "lexical" vs do. This v also assigns a Theta-role (eventually, as discussed above). It also bears a [•D•] feature and a person probe, reminding of transitive v. The v of motion verb v is the defective version of this head, since it has neither a [•D•] feature, nor a person probe, similarly to unaccusative v.

5.9.3 Auxiliary switch for aspectual verbs

In the previous section, I said that the perfect auxiliary of aspectual verbs is always HAVE. However, some aspectual verbs allow for auxiliary switch under some specific circumstances. The set of relevant sentences is in (210). The example with auxiliary switch is in (210-c).

(210)   a.   Teresa ha   cominciato a andar=ci   tre   mesi   fa.
             Teresa have.PRS.3SG start.PRTC to go.INF=there three months ago

         b.   *Teresa è   cominciat-a   a andar=ci   tre   mesi   fa.
             Teresa be.PRS.3SG start.PRTC-3SG.F to go.INF=there three months ago

         c.   Teresa ci=è   cominciat-a   a andare tre   mesi   fa.
             Teresa there=be.PRS.3SG start.PRTC-SG.F to go.INF three months ago

         d.   Teresa ci=ha   cominciato a andare tre   mesi   fa.
             Teresa there=have.PRS.3SG start.PRTC to go.INF three months ago
             'Teresa started going there three months ago.'

In (210-c), we see that if the lexical verb is unaccusative and if clitic climbing takes place, then the auxiliary can be BE, in alternation with HAVE (210-d). However, auxiliary switch is excluded in the absence of clitic climbing, as shown in (210-b). How is it possible to derive auxiliary switch in (210-c), and to exclude it in (210-b)? I think there are two possible scenarios. The variation in the auxiliary may depend either on defective

intervention by the clitic, or on the possibility to merge an aspectual verb with v_{restr}. In what follows, I explore both possibilities, and I will conclude that the latter analysis is on the right track: auxiliary switch is possible if the aspectual verb is selected by v_{restr}.

Under the former hypothesis, clitic climbing has a feeding effect on auxiliary switch. This is possible if the clitic bears an unvalued person feature (as I have suggested for the locative clitic *ci* in section §4.4.6.1 of chapter 4). The person probe on the v_{asp} associated with aspectual verbs is subject to defective intervention in the presence of a ϕ-defective clitic pronoun. The head v_{asp} probes the clitic in the specifier of the lower v instead of the DP$_{\text{sbj}}$. This happens if the clitic (cl$_{\text{loc}}$) is located in a higher position than the DP$_{\text{sbj}}$, as in the syntactic structure in (211), which corresponds to (210-c).

(211)
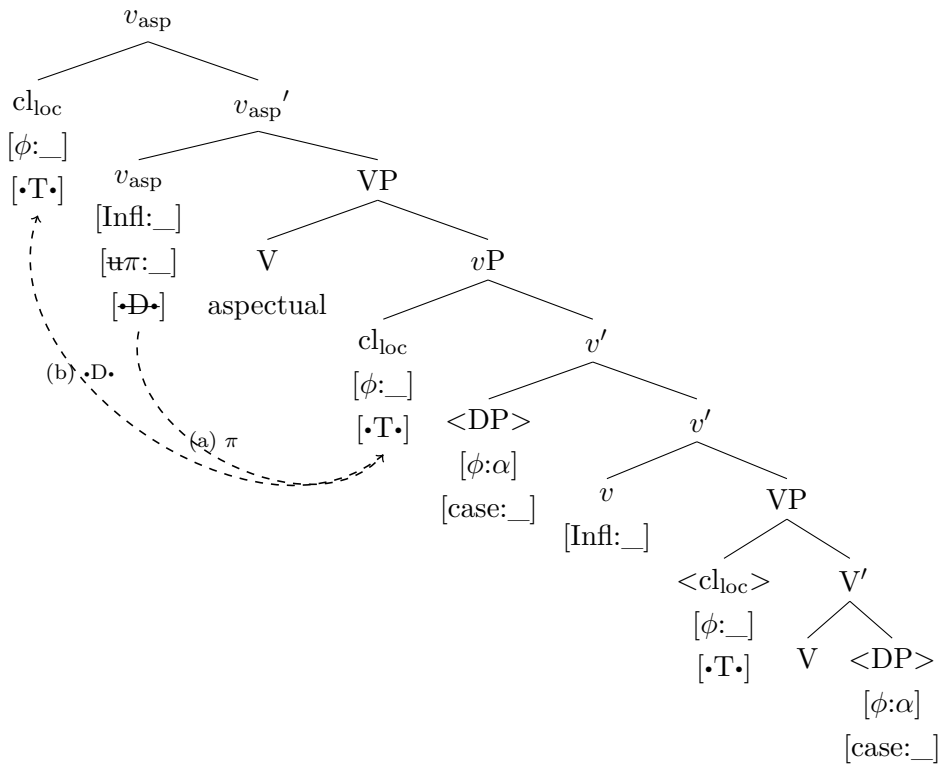
If the clitic is higher than the DP$_{\text{sbj}}$, v_{asp} probes it for person. Since this bears unvalued ϕ-features, valuation fails and the probe on v_{asp} remains unvalued (under the assumption that an unvalued feature is a matching feature and can stop Agree). Successively, when Perf probes v_{asp}, the person probe on Perf remains unvalued as well. Consequently, at Spell-out the allomorph BE is inserted.

In addition, the clitic is also raised by the [•D•] feature on v_{asp}. The DP$_{\text{sbj}}$ must be moved by an edge feature, resulting in participle agreement, as is in fact the case in (210-c).

It should be noted that the respective positions of the clitic and the DP$_{\text{sbj}}$ in tree (211) can be achieved under crossing movement paths, otherwise the DP$_{\text{sbj}}$ should be located in the outer Spec,v. However, in this dissertation I make use of nesting paths

for multiple movement (recall the discussion on the relative position of the clitic and the DP, moved by edge features, cf. section §4.4.5.1 in chapter 4). The order of the locative clitic and the DP$_{sbj}$ in tree (211) can be derived in one of the following ways. First of all, as I have already said, I do not exclude that movement of multiple items might take place via crossing paths.[58] Alternatively, one could adopt nesting paths, thereby deriving an order opposite to (211) for the clitic and the DP$_{sbj}$, but also assume that the two specifiers are equidistant. Under equidistance, it is possible to probe both items, deriving the grammaticality of both (210-c) and (210-d). In general, equidistance is not a problem for auxiliary selection with modal verbs: the specifiers of v are skipped by v_{restr} because of Nested Agree.

The defective-intervention-analysis seems to account for the data in (210), since auxiliary switch is found only when the clitic is accessible to the person probe (i.e., when it climbs, otherwise it would be already incorporated into the embedded T). However, the situation is more complex than shown in (210). In fact, auxiliary switch becomes obligatory when there is a reflexive pronoun or an impersonal clitic, as (212) shows.

(212) a. *Teresa si=ha   cominciato a lavare.
           Teresa REFL.ACC.3SG.F=have.PRS.3SG start.PRTC to wash.INF

       b. Teresa si=è   cominciat-a a lavare.
           Teresa REFL.ACC.3SG.F=have.PRS.3SG start.PRTC to wash.INF
           'Teresa started washing herself.'

       c. *Si=ha   cominciato a lavorare molto.
           IMPERS=have.PRS.3SG start.PRTC to work.INF a lot

       d. Si=è   cominciato a lavorare molto.
           IMPERS=be.PRS.3SG start.PRTC to work.INF a lot
           'One started working a lot.'

When the higher v_{asp} probes for person, the reflexive clitic pronoun has already acquired valued ϕ-features via binding by the external argument (as the presence of participle agreement shows, cf. analysis of reflexive root clauses in section §3.3.2 of chapter 3). Hence, the reason for the switch in (212-b) cannot be defective intervention by a ϕ-defective clitic pronoun. This consideration suggests to look at the second possible analysis for auxiliary switch with aspectual verbs, namely the possibility to merge an aspectual verb with v_{restr}.

In section §5.9.1, we have seen that aspectual verbs show partial evidence for raising (for instance, they can embed weather verbs) and for control (for example, they can be passivized). This mixed behavior concerns different verbs, but also different instances of the same verb. According to the tests provided in section §5.9.1, the aspectual verbs that allow for auxiliary switch, such as *cominciare a* 'begin to', behave more as modal

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[58]Note that the use of crossing paths for movement of the clitic and the DP$_{sbj}$ in (211) is not a problem for auxiliary selection for modal verbs, since the specifiers of v are skipped by v_{restr} because of Nested Agree.

verbs than other aspectual verbs (for instance, *provare a* 'try to') do. Abstracting from the precise structure of aspectual restructuring configurations, which could sometimes be raising, sometimes be control, the idea is that when an aspectual verb shows auxiliary switch, it is selected by restructuring v, rather than by v_{asp}. Under this hypothesis, aspectual verbs can combine with the same v as modal verbs do. Instead of being selected by the aspectual v, they may be selected by the restructuring v, in particular by a defective v_{restr}. When this happens, the tree (211) looks like (213).

(213)
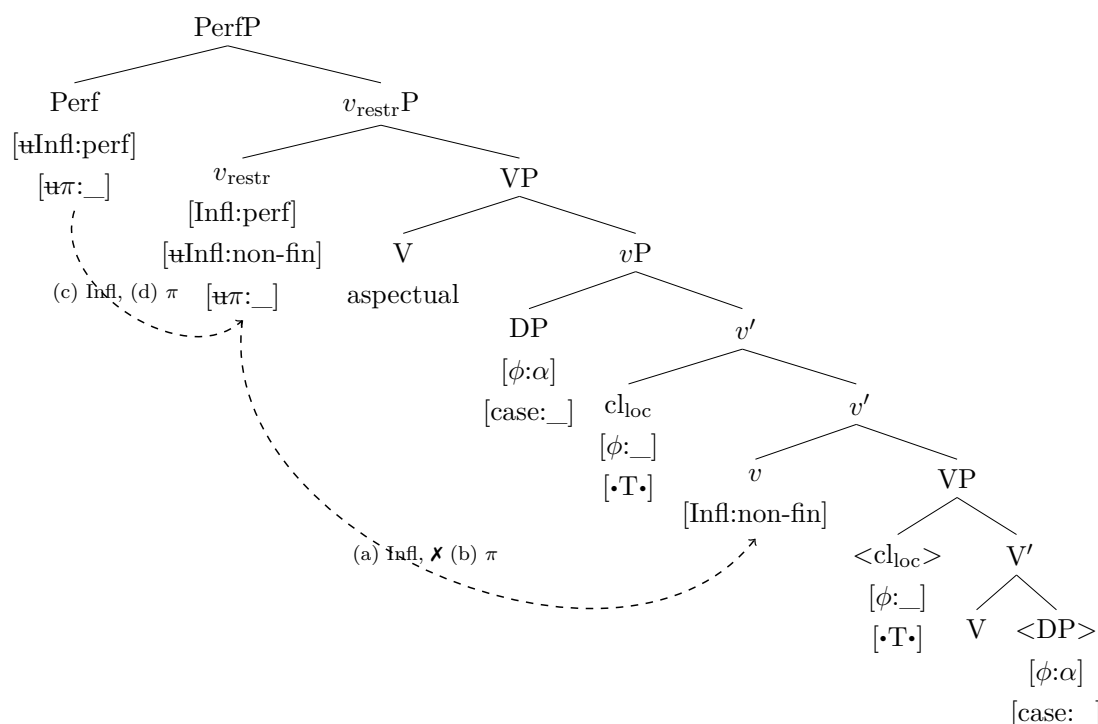
In the structure in (213), v_{restr} probes for person the lower unaccusative v, which does not contain any person feature. When Perf enters the derivation, it probes v_{restr} for person, which does not contain any person feature either. Hence, the perfect auxiliary is realized as BE.

In (213), I have provided an example of auxiliary switch with an embedded unaccusative verb, as in (210-c). In reflexive clauses (212-b), v_{restr} probes embedded v, which bears an unvalued person feature (cf. section §5.7.2); in impersonal clauses (212-d), v_{restr} probes embedded Voice$_{impers}$, which bears an unvalued person feature (cf. section §5.7.8).

The change of selectional requirement should be obligatory in the presence of a vP complement, and the chosen v_{restr} should match the embedded v. In particular, if the complement of an aspectual verb is a v*P, the aspectual verb must be selected by non-defective v_{restr} (leading to HAVE with transitive, BE and participle agreement (with the clitic) with reflexives, and also with impersonals, exactly as with modal verbs). If its complement is a vP, it must be selected by defective v_{restr} (leading to BE and participle

agreement).

At first sight, this analysis might not seem to be right, given that auxiliary switch is tied to the presence of a clitic (cf. (210-b) versus (210-c)). However, there are some reasons to think that this is indeed an adequate approach to this problem. First of all, evidence for v_{restr} is the presence of participle agreement in (210-c), which can be easily explained with the defective v_{restr}, as we saw for modal verbs.

The second observation is that not all aspectual verbs allow for the feeding effect of clitic climbing for auxiliary switch. Some aspectual verbs behave differently. For example, the perfect auxiliary of *provare a* 'try to' can never be BE, even when clitic climbing has applied (214-c).

(214)   a.   Teresa ha   provato a andar=ci   tre   mesi   fa.
             Teresa have.PRS.3SG try.PRTC to go.INF=there three months ago

        b.   *Teresa è   provat-a   a andar=ci   tre   mesi   fa.
             Teresa be.PRS.3SG try.PRTC-3SG.F to go.INF=there three months ago

        c.   *Teresa ci=è   provat-a   a andare tre   mesi   fa.
             Teresa there=be.PRS.3SG try.PRTC-SG.F to go.INF three months ago

        d.   Teresa ci=ha   provato a andare tre   mesi   fa.
             Teresa there=have.PRS.3SG try.PRTC to go.INF three months ago
             'Teresa tried to go there three months ago.'

If auxiliary switch was due to the clitic *ci*, it should be invariably possible with all aspectual verbs. In contrast, under the present approach it is expected that some aspectual verbs cluster more closely with modal verbs, and hence can be selected by v_{restr}, whereas other verbs are more lexically oriented, and do not allow for this change of selection. In other words, the change in selectional requirement is more likely for those verbs that behave similarly to modal verbs.

A final piece of evidence for the present approach is that auxiliary switch without the presence of a clitic (excluded in (210-b)) is actually possible when the subject is inanimate, as shown in (215-b).

(215)   a.   Le foglie hanno   cominciato a cadere da   tre   giorni.
             the leaves have.PRS.3PL start.PRTC to fall.INF from three days

        b.   Le foglie sono   cominciat-e   a cadere da   tre   giorni.
             the leaves be.PRS.3PL start.PRTC-PL.F to fall.INF from three days
             'The leaves have started to fall three days ago.'

Although inanimate arguments are possible even with some control verbs, the absence of animacy restrictions is an hallmark of raising, where the verb does not assign a Theta-role to the inanimate argument (cf. section §5.8.1). Hence, when the subject of the aspectual verb is inanimate, the aspectual verb is used as a raising verb. In fact, when the DP$_{\mathrm{sbj}}$ does not need an agentive Theta-role, as inanimate subjects normally do not, the aspectual verb can be easily used as an athematic verb, i.e. selected by v_{restr}.

To conclude, I think that the explanation of auxiliary switch for aspectual verbs lies in the possibility for these verbs of being selected by v_{restr}, namely by defective v_{restr}, when the embedded v is unaccusative.

This solution can account for auxiliary switch with unaccusative, reflexive and impersonal complements. Nonetheless, there remain some further problems. The first issue is the obligatory switch with reflexive and impersonal clauses, as shown above in (212). The main question is why we have optionality in the case of unaccusative structures, as in (210-c) and (210-d), but not in the case of reflexive clauses, as in (212-a) and (212-b), and impersonal clauses, as in (212-c) and (212-d).

I would like to point out that the switch might be obligatory even with unaccusative complements. Recall that for the clitic *ci* I mentioned the possibility that this is base-generated in a higher position (in order to account for the clause *Teresa ci=ha voluto andare*, whose grammaticality is dubious). The base-generation hypothesis can explain why example (210-d) is grammatical next to example (210-c). The only option with a *v*P complement is auxiliary switch, as in (210-c). The sentence (210-d) actually contains a TP complement, as the auxiliary HAVE shows, and the clitic *ci* is base-generated in the matrix clause (as a resumptive pronoun for an implicit locative PP). In fact, the optionality of auxiliary switch in (210-c) and (210-d) is not found with other clitics in dependence of an unaccusative predicate. With a dative clitic pronoun, the grammaticality of the clause (216-c) with clitic climbing and without auxiliary switch is dubious. With the partitive clitic *ne*, the sentence (217-c) with clitic climbing and without auxiliary switch is completely ungrammatical.[59]

(216)   a. Il   bambino ha   cominciato a scappar=gli
             the child   have.PRS.3SG start.PRTC to run.away.INF=DAT.3SG.M
             dalla   vista.
             from.the sight

         b. *Il   bambino è   cominciato a scappar=gli
             the child   be.PRS.3SG start.PRTC to run.away.INF=DAT.3SG.M
             dalla   vista.
             from.the sight

         c. ??Il bambino gli=ha   cominciato a scappare
             the child   DAT.3SG.M=have.PRS.3SG start.PRTC to run.away.INF
             dalla   vista.
             from.the sight

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[59]I am not sure about the source of the difference between (216-c) and (217-c). A possibility could be that the dative is base-generated in a higher position, whereas the partitive clitic *ne* is moved out of the direct object position. If this is true, (217-c) must involve a *v*P complement, whereas (216-c) could also contain a TP complement. Another anomaly is that for some speakers the clause (217-b) is grammatical. I do not know why this should be possible for (217-b), but neither for (216-b), nor for (25-b). For these complicated cases, more research is needed.

d. Il bambino gli=è   cominciato a scappare
   the child   DAT.3SG.M=be.PRS.3SG start.PRTC to run.away.INF
   dalla   vista.
   from.the sight
   'The child started to run away from his sight.'

(217) a. Di ragazze, hanno   cominciato a venir=ne   molte.
           of girls   have.PRS.3PL start.PRTC to come.INF=of many

       b. *Di ragazze, sono   cominciate   a venir=ne   molte.
           of girls   be.PRS.3PL start.PRTC-PL.F to come.INF=of many

       c. *Di ragazze, ne=hanno   cominciato a venire   molte.
           of girls   of=have.PRS.3PL start.PRTC to come.INF many

       d. Di ragazze, ne=sono   cominciate-e   a venire   molte.
           of girls   of=be.PRS.3PL start.PRTC-PL.F to come.INF many
           'Of girls, many of them started to come.'

The clauses in (216) and (217) show that in presence of clitic climbing, auxiliary switch is obligatory, meaning that the aspectual verb must be obligatorily selected by v_{restr}. I conclude that, for those aspectual verbs that pattern closely to modal verbs, such as *cominciare a* 'start to', the categorization of the aspectual verb as a modal (i.e., Merge with a v_{restr} rather than with a transitive v) is obligatory when the complement of the aspectual verb is a vP.[60] In particular, if the complement is a v*P, they must be selected by v_{restr}; if the complement is a vP, they must be selected by defective v_{restr}. This specific pattern of selection is required in order to derive BE with reflexive and unaccusative complements, and HAVE with canonical transitive complements; it also ensures that the clauses with auxiliary switch exhibit participle agreement in the clauses. The remaining problem is to exclude auxiliary switch when there are no clitics in the structure, as in sentence (218).

(218) *Teresa è   cominciat-a   a andare in palestra tre   mesi   fa.
        Teresa be.PRS.3SG start.PRTC-3SG.F to go.INF in gym   three months ago
        'Teresa started going to the gym three months ago.'

The possibility of categorizing an aspectual verb as a modal verb must be related (at least for some verbs) to the presence of clitic climbing. Examples (210-b) and (210-c) show that the change in selection is possible only in the presence of a vP complement, and visible only because of the clitic. Even if one admits that the change of selection is possible, and obligatory, only with vP complement, it is not clear how one could exclude auxiliary switch when there are no clitic in the structure, under the assumption that the complement could still be a vP even when there is no clitic that signals it. Hence, a sentence such as (218) should be possible, but it is not the case. I do not have any clear answer to this problem.

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[60] If one instead assumes that the categorization of the aspectual verb as a modal is optional, one derives the optionality of auxiliary switch with unaccusatives (210), but also in reflexive and impersonal clauses (212), which is not the case.

More research is needed, in order to investigate the exact distribution of auxiliary switch and link it to other factors.

5.9.3.1 No auxiliary switch for motion verbs

Going now to motion verbs, their perfect auxiliary is always BE, independently of the embedded verb. Exactly as for raising verbs, their auxiliary never becomes HAVE, even when a transitive verb is embedded (219-a,b) and an accusative clitic climbs (219-c,d).

(219) a. Teresa è   andat-a   a mangiare la   torta.
           Teresa be.PRS.3SG go.PRTC-SG.F to eat.INF   the cake

       b. *Teresa ha   andato/-a   a mangiare la   torta.
           Teresa have.PRS.3SG go.PRTC/-SG.F to eat.INF   the cake
           'Teresa went to eat the cake.'

       c. Teresa la=è   andat-a   a mangiare.
           Teresa ACC.3SG.F=be.PRS.3SG go.PRTC-SG.F to eat.INF

       d. *Teresa la=ha   andato/-a   a mangiare.
           Teresa ACC.3SG.F=have.PRS.3SG go.PRTC/-SG.F to eat.INF
           'Teresa went to eat it.'

The reason for this phenomenon lies in the absence of a person probe on the motion v head, as proposed in section §5.9.2 and repeated here below.

(220) v_{mot}: [Infl:__] (= raising v = unaccusative v)

Auxiliary switch (i.e., the emergence of BE instead of HAVE) is in general possible because of the presence of a person probe. BE emerges either if the probe fails to Agree or if it agrees with a defective item. If there is no probe, the scenario is invariably lack of Agree, leading to BE insertion in every case without any alternation. Hence, neither the size of the complement nor the non-defectiveness of the arguments matter: there is simply no possibility to Agree.

The follow-up question is why motion verbs can never change their selectional requirements, differently from aspectual verbs. In fact, if a motion verb is selected by a v_{restr}, then the auxiliary could be realized as HAVE in the presence of a TP complement, leading to a clause as *Teresa ha andato/-a a mangiar=la*, which is not grammatical. A possible answer is that the change of selection is indeed always possible also for motion verbs, but it only concerns the acquisition of the [uInfl:non-fin] feature, which is what characterizes modal restructuring verbs. Even if the motion v acquires this feature, no change in the auxiliary is possible, since the head does not contain a person probe to start with.

To sum up, the impossibility of auxiliary switch for motion verbs is due to the lack of a person probe on their v. The change in selectional requirements, if possible, does not lead to any visible effect on the side of auxiliary selection.

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5.9.3.2 Long object movement

Next to clitic climbing and auxiliary selection, some restructuring verbs can also exhibit long object movement (LOM). LOM consists of the promotion of the object of the lexical verb to the subject position of the restructuring verb, when the restructuring verb is passivized.[61]

(221) Quelle case   furono   iniziat-e   a costruire negli anni '20.
       those houses be.PST.3PL start.PRCT-PL.F to build.INF in.the years 20
       'Those houses were started to build in the 20's.' (literally)   (Cinque 2003: 34)

The possibility of passivization, with corresponding long object movement, may be due to the presence of a full argument structure v and it is evidence for an external argument position. A passive Voice head takes as its argument a transitive v. Therefore, if it is possible to passivize an aspectual verb, it means that this is selected by a transitive v. In contrast, modal verbs cannot be passivized because passivizaton cannot apply to v_{restr}, in the same way as it cannot target a raising v or a defective v.

(222) *È   stat-a   dovut-a   riscrivere.
       be.PRS.3SG be.PRCT-SG.F must.PRCT-SG.F write.again.INF
       'One has to write it again.'   Cinque (2003: 32)

Note that in Italian the *si*-passivization, meaning the formation of impersonal clauses where the internal argument is promoted to the subject position, is well-formed even with modal verbs, as is also in Spanish (Cinque 2003: 30).

(223) Si=è   dovut-a   riscrivere.
       IMPERS=be.PRS.3SG must.PRCT-SG.F write.again.INF
       'One has to write it again.'

This is expected if, as I have explained in section §3.3.9.1 in chapter 3, Voice$_{\text{impers}}$ can take all types of v as its complement, with the result that verbs of every valency can be found in an impersonal passive, including raising and restructuring verbs.

However, I have said that aspectual v should be a type of v_{restr} called v_{asp}, and not really a transitive v. Hence, it is not clear which exact property makes this v a possible target of passivization. Moreover, also motion verbs can be passivized. This is quite unexpected, since I have said that they combine with a defective v similar to the unaccusative v.

(224) ?I libri saranno   andat-i   a prendere entro domani.
       the books be.FUT.3PL go.PRCT-PL.M to fetch.INF by   tomorrow
       'One will be going to fetch the books by tomorrow.' (literally) Cinque (2003: 35)

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[61]Let me highlight the LOM is not always well-formed as in (221). In particular, different tense specifications, such as present tense or perfect tense, lead to ungrammaticality, as I have shown in example (178) in section §5.9.1.

As I have discussed in section §5.9.1, it should be noted that the combination of the restructuring verb *andare a* 'go to' and the lexical verb *prendere* 'fetch' is quite special, since its meaning is nearly idiomatic (A. Cardinaletti, p.c.). The restructuring verb does not contribute to the meaning of the periphrasis, which is 'fetch'. If we now look at other combinations of the same restructuring verb with other lexical verbs, the clause cannot be passivized anymore.

(225) a. *Quei film saranno   andat-i   a proiettare entro domani.
           those films be.FUT.3PL go.PRCT-PL.M to project.INF by tomorrow
           'One will be going to project those films by tomorrow.' (literally)

       b. *Il pane sarà   andato a comprare alle sette.
           the bread be.FUT.3SG go.PRCT to buy.INF   at.the seven
           'One will be going to buy bread at seven o'clock.' (literally)

                                                              (A. Cardinaletti, p.c.)

We shall conclude that in general motion verbs cannot be passivized. The periphrasis *andare a prendere* 'go fetch' can be passivized because it behaves as the transitive verb *prendere* 'fetch'.

If we would like to provide a syntactic explanation for the availability of passivization, a solution for (224) could be that actually motion verbs do not involve a raising configuration, but rather they contain some more structure. For instance, causative restructuring verbs such as *mandare a* 'send to' involve a third argument that is the agent of the embedded event and that can also differ from the agent of the matrix sentence. Similarly, motion verbs could involve control, at least in some of their occurrences.

(226) a. Io$_j$ mando   *pro*$_i$ [PRO$_i$ a prendere i libri].
           NOM.1SG send.PRS.1SG   to fetch.INF the books
           'I send someone to fetch the books'

       b. Io$_i$ vado   [PRO$_i$ a prendere i libri].
           NOM.1SG go.PRS.1SG   to fetch.INF the books
           'I go to fetch the books'

I do not have a clear answer for the possibility of passivization of motion and aspectual verbs.

The explanation of passivization proposed by Cinque (2003) is that the restructuring verb is generated in the semantically corresponding functional head, according to the following hierarchy.

(227) Voice > perception > causative > asp-inceptive > asp continuative > andative
       > asp-completive

For Cinque (2003), modal functional heads are higher than the passive Voice head in (227). Therefore, they cannot be passivized. In contrast, different types of aspectual verb, such as those involving the completive aspect, are realized lower than passive Voice. It follows

that the restructuring verbs that correspond to these functional aspectual heads can be targeted by passivization.

In this dissertation, I do not adopt the cartographic approach. I also think that if one assumes the hierarchy of functional projections proposed by Cinque (1999) and the idea that restructuring verbs realize such ordered functional heads, a restructuring verb (even an aspectual verb, which is supposed to realize a low functional head) should not be a possible target of passivization. In fact, a functional head should not intervene in the relation between the lexical v and the passive Voice. The passive Voice selects a vP (or a functional projection containing a vP in the case of aspectual verbs). Passivization consists of different processes: inhibiting accusative case assignment, raising the internal argument and introducing passive morphology and semantics. If the aspectual verb is a functional head, either it is not of the relevant category for the passive Voice, which targets the lower v and the lexical verb, or it is itself selected by a v that is targeted by passive Voice, and hence it behaves as a lexical verb in being passivized, and not as a functional head.

Moreover, an aspectual active verb can take as its complement a passive lexical verb, which should not be possible for restructuring verbs that are lower than passive Voice in the hierarchy in (227). Indeed, aspectual verbs allow for this configuration (whereas motion verbs do not).[62]

(228)   a.   Gli=cominciarono   ad essere inflitte   delle punizioni.
             DAT.3SG.M=begin.PST.3PL to be.INF inflict.PRCT some punishments
             'Some punishments started to be inflicted to him.'

        b.   Gli=provò   ad essere presentato.
             DAT.3SG.M=try.PST.3SG to be.INF introduce.PRCT
             'He tried to be introduced to him.'

        c.   *Gli=passò   ad essere presentato   uno straniero.
             DAT.3SG.M=come.by.PST.3SG to be.INF introduce.PRCT a   stranger
             'A stranger came by to be introduced to him.'   (Cinque 2003: 40-41)

Cinque (2001, 2003) justifies these sentences in (228) as involving a higher type of aspect. However, I think that the difference in the type of v might provide a better account for the data presented in this section than the cartographic approach. Still, the precise structure involved in motion and aspectual restructuring remains to be identified. I leave the issue

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[62]Although not all examples are equally grammatical. The following examples were rated as not fully grammatical (A. Cardinaletti, p.c.).

(i)   a.   ?(?)Queste case   hanno   cominciato ad essere costruit-e   in gennaio.
           these   houses have.PRS.3PL start.PRCT to be.INF build.PRCT-PL.F in January
           'These houses have been started to be build in January.' (literally)
      b.   ?(?)Dall'inizio   della scuola, ho   cominciato ad essere rimproverata   di
           from.the beginning of.the school have.PRS.1SG start.PRCT to be.INF scold.PRCT-PL.F of
           continuo   dalle   maestre.
           continuous by.the teachers
           'Since the beginning of the school, I have started being continuously scolded by the teachers.'
           (literally)

here open, since it is not the main focus of this dissertation.

5.10 Series of restructuring verbs

According to Cardinaletti and Shlonsky (2004: 523), in a sequence of restructuring verbs the clitic should climb all the way up to the highest position (229-c). It can eventually remain on the lower verb (229-a), but it is excluded on the intermediate positions (229-b).

(229)   a.   ?Sarei   dovuto   poter   uscir=ne   prima.
             be.COND.1SG must.PRTC can.INF go.out.INF=of before

        b.   *Sarei   dovuto   poter=ne uscire   prima.
             be.COND.1SG must.PRTC can.INF=of go.out.INF before

        c.   Ne=sarei   dovuto   poter   uscire   prima.
             of=be.COND.1SG must.PRTC can.INF go.out.INF before
             'I should have been able to exit from there sooner.'

<div align="right">(Cardinaletti and Shlonsky 2004: 523)</div>

Cardinaletti and Shlonsky (2004: 523) develop a generalization according to which "clitic pronouns can appear attached either to the lexical verb or to the highest verb that has restructured and nowhere else." There are two positions for clitic placement: the 'clausal' and the 'lexical' position. The former corresponds to the first CP boundary, whereas the latter to the VP (I refer the reader to sections §5.4.1, §5.7.9.2 for the discussion of this proposal). The availability of these two positions constitutes a test for defining the boundary of the restructuring configuration in the case of multiple restructuring verbs. For instance, sentence (229-b) is ungrammatical for the following reason. The clitic is not located on the lexical verb, meaning that it occupies the clausal position and not the lexical one. Hence, the first CP boundary is located in correspondence of the verb *potere* that hosts the clitic. This means that the verb *dovere* is not used as a restructuring verb because it selects a CP. However, the auxiliary of *dovere* has undergone auxiliary switch, which is impossible if the verb *dovere* is not a restructuring verb. In other words, sentence (229-b) cannot be produced either because the clitic is placed in a non-licit position or because auxiliary switch is not possible.

This is also why a sentence with clitic climbing and without auxiliary switch as (230) is excluded.

(230)   *Ne=avrei   dovuto   poter   uscire   prima.
          of=have.COND.1SG must.PRTC can.INF go.out.INF before
          'I should have been able to exit from there sooner.'

Under Cardinaletti and Shlonsky's (2004) analysis, the lack of auxiliary switch in (230) shows that the verb *dovere* 'must' is not used as a restructuring verb, but rather as a lexical verb that selects a CP complement. Hence, the clitic should be located either on

the lexical verb, or on the highest restructuring verb *potere* 'can' in correspondence with the first CP layer. From a different perspective, if the position where the clitic is placed in (230) is actually the clausal position, then auxiliary switch must apply, leading to the clause (229-c).

In my analysis, I do not assume exclusively a lexical and a clausal position for clitics, but just the presence of a T head. I also analyze auxiliary selection in terms of person Agree. Under these premises, the sentences (229) and (230) can be explained as follows. They correspond to the following syntactic structures.

(231)   a. ?[Sarei [dovuto [poter [uscir=ne prima]]]]
             $[_{TP}$ T-Perf $[_{vP/TP}$ v_{restr} $[_{vP/TP}$ v_{restr} $[_{TP}$ T-v-V=cl ...   ]]]]

         b. *[Sarei [dovuto [poter=ne [uscire prima]]]]
             $[_{TP}$ T-Perf $[_{vP/TP}$ v_{restr} $[_{TP}$ T-v_{restr}=cl $[_{vP}$ v-V   ...   ]]]]

         c. [Ne=sarei [dovuto [poter [uscire prima]]]]
             $[_{TP}$ T-Perf=cl $[_{vP}$ v_{restr} $[_{vP}$ v_{restr} $[_{vP}$ v-V   ...   ]]]]

Starting with the clear ungrammatical case in (231-b), this sentence is ungrammatical because, as Cardinaletti and Shlonsky (2004) have argued, there is a conflicting requirement. Under the present analysis, the clitic can be located on any verb, and its position signals a TP. Given the account of auxiliary selection that I have proposed in section §5.7.7, in presence of a TP complement the higher auxiliary must be HAVE, since the higher v_{restr} succeeds in finding the relevant person feature on the lower T. Hence, sentence (231-b) cannot exhibit auxiliary switch in the context of a TP complement. The perfect auxiliary must be HAVE, as shown in (232), which corresponds to (231-b).

(232)   [Avrei [dovuto [poter=ne [uscire prima]]]]
         $[_{TP}$ T-Perf $[_{vP}$ v_{restr} $[_{TP}$ T-v_{restr}=cl $[_{vP}$ v-V   ...   ]]]]

The generalization is that if the clitic stays on a lower verb, then the higher auxiliary must be HAVE. This is expected under the present analysis and finds a simple syntactic explanation in my account. For Cardinaletti and Shlonsky (2004), the sentence in (232) can be generated if only the verb *potere* is restructured, but not *dovere*.

In (231-c), the position of the clitic shows that the first T head is in correspondence with the highest restructuring verb. This means that its complement is a vP. Hence, auxiliary switch is expected.

As far as (231-a) is concerned, a possible analysis for its non-fully grammatical status could be that it consists of a licit, but marked sequence of projections. The series of projections can be one of the following: TP-vP-vP-TP, TP-TP-vP-TP, TP-vP-TP-TP or TP-TP-TP-TP. There could be a constraint that allows to repeat portions of the functional projections only under some circumstances. Theses sequences are not completely well-formed, but are not completely excluded, as (231-a) shows. I do not enter here into details. Let me just highlight that also for Cardinaletti and Shlonsky (2004) there is no clear

answer about why the clitic should not stay in the lexical position when auxiliary switch is performed, as in (231-a).

A prediction that my analysis makes is that if the sequence contains a further restructuring verb, then the clitic should be able to stay on an intermediate TP. The relevant sentences are in (233).

(233) a. ?Sarei   dovuto   poter andar=lo   a prendere prima.
          be.COND.1SG must.PRTC can.INF goINF=ACC.3SG.M to fetch.INF before

   b. ?Sarei   dovuto   poter=lo   andare a prendere prima.
          be.COND.1SG must.PRTC can.INF=ACC.3SG.M goINF   to fetch.INF before
      'I should have been able to go to fetch it before.'

The sequence of restructuring verbs is 'must'-'can'-'go', preceded by the perfect auxiliary and followed by the lexical verb 'fetch'. The syntactic structures are in (234).

(234) a. ?[Sarei [dovuto [poter [andar=lo   a [prendere prima]]]]]
          [$_{TP}$ T-Perf [$_{vP}$ v_{restr} [$_{vP}$ v_{restr} [$_{TP}$ T-v_{restr}=cl   [$_{vP}$ v-V   ...   ]]]]]

   b. ?[Sarei [dovuto [poter=lo [andare a [prendere prima]]]]]
          [$_{TP}$ T-Perf [$_{vP}$ v_{restr} [$_{TP}$ T-v_{restr}=cl [$_{vP}$ v_{restr} [$_{vP}$ v-V   ...   ]]]]]

The sentences in (234) are completely grammatical when the auxiliary is HAVE. This fact finds an explanation both within my theory and within Cardinaletti and Shlonsky's (2004). Under the former, the intermediate position of the clitic shows an intermediate TP. This causes person-Agree on Perf to be successful, leading to HAVE insertion (as explained in section §5.7.7). For the latter, the placement of the clitic indicates a CP boundary. Consequently, the higher perfect auxiliary cannot undergo auxiliary switch because of lack of restructuring.

With the auxiliary BE, the sentences in (234) are a bit degraded, but still possible, as much as (229-a) is possible. I think that these cases are equivalent to those sentences that exhibit BE when there is a TP embedded, as discussed in section §5.7.9.2. Although the complement is a TP (as shown by the intermediate placement of the clitic), the perfect auxiliary can, nonetheless, be realized as BE, if the modal verb is occasionally selected by a defective v_{restr}, rather than by the standard v_{restr} required in the context of TP complement. For some speakers, it is possible to generate sentences as (234), (229-a) and the general *Teresa è volut-a andar=ci*, but the output is marked.[63] The grammaticality of sentences in (233) cannot be explained by Cardinaletti and Shlonsky's (2004) analysis. My approach based on different sizes of the complement might instead account for them.

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[63]If this is true, then also sentence (231-b) is expected to be grammatical for some speakers. Further research is needed to verify if this is the case.

5.11 Restructuring in other varieties

In this chapter, I have talked about auxiliary selection in restructuring configurations. In Standard Italian, when a modal verbs takes a lexical verb as its complement, the perfect auxiliary can be either HAVE or the auxiliary that the lexical verb would select (HAVE for transitive verbs, BE for unaccusative, reflexive and impersonal clauses). The latter effect is called auxiliary switch and it also interacts with clitic climbing. In particular, auxiliary switch takes place given two conditions: a special v_{restr} that acts as a hinge for person Agree, and a small complement for the modal verb (vP, but not TP). The optionality for different sizes of the complement leads to the optionality for different transparency effects, as example (235) summarizes.

(235)   *Standard Italian*

    a. vP: clitic climbing, auxiliary switch

    b.   TP: *clitic climbing, *auxiliary switch

Looking now at other Italo-Romance varieties, optionality for auxiliary selection and for placement of the clitic tends to disappear (Egerland 2009).[64] The clitic must be invariably located either on the lower lexical verb (Northern varieties) or on the higher auxiliary (Southern varieties), whereas the auxiliary is always realized as in root clauses.

In the Northern dialects, the auxiliary in root clauses behave similarly to Italian (with some variation with reflexives, cf. chapter 6 for details). An example of Northern variety is Paduan (Cennamo and Sorace 2007). In Paduan, the auxiliary in restructuring can only be HAVE and clitic climbing does not take place. When Paduan speakers are asked to translate Italian restructuring clauses that contain BE and clitic climbing, these are translated with HAVE and with the clitic in the lower position (Pegoraro 2018). Examples (236-b,d) are the Paduan translations for the Italian sentences (236-a,c).

(236)   a.   Siamo   potut-i   uscire   da   lì   solo dopo un po'.
            be.PRS.1PL can.PRTC-PL.M exit.INF from there only after a   little

    b.   Ghemo   podesto ussire da   lì   soeo dopo un poco.
            have.PRS.1PL can.PRTC exit.INF from there only after a   little
         'We could get out of there only after a while.'   (Pegoraro 2018: 22)

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[64]Outside Romance, auxiliary switch is also attested in Dutch, especially in the Southern varieties, as shown in (i).

(i)   a.   ... dat ik   naar huis heb   moeten   gaan.
         that NOM.1SG to   house have.PRS.1SG must.INF go.INF
    b.   ... dat ik   naar huis ben   moeten   gaan.
         that NOM.1SG to   house be.PRS.1SG must.INF go.INF
        ' ... that I had to go home.'   (Cavirani-Pots 2020: 86)

For discussion of restructuring in Dutch, cf. Ter Beek (2008).

c. Lo=voglio   fare   entro domani.
ACC.3SG.M=want.PRS.1SG do.INF by   tomorrow

d. Vojo   far=lo   entro doman.
want.PRS.1SG do.INF=ACC.3SG.M by   tomorrow
'I want to do it by tomorrow.'   (Pegoraro 2018: 20)

These facts can be easily explained if Paduan restructuring verbs always select a TP complement, independently of the features of v_{restr}. Hence, in those Northern varieties where auxiliary selection is argument-structure-driven, a restructuring verb can take only a TP complement and may or may not be selected by the special v_{restr} that I have introduced for Standard Italian.

In many Southern dialects, the auxiliary is dependent on the features of the subject (person-based auxiliary selection, cf. chapter 6 for details). Such a language is Ariellese (D'Alessandro and Roberts 2010; D'Alessandro 2017b). Here, auxiliary selection in restructuring is based on the person feature of the subject and does not change depending on the type of the lexical verb. The data are discussed in section §6.2.1.2 of chapter 6. I propose here an example for a first person subject.

(237)   *Arielli*

a. So   vulute   ij   a lu mare.
be.PRS.1SG want.PRTC go.INF to the beach

b. *Aje   vulute   ij   a lu mare.
have.PRS.1SG want.PRTC go.INF to the beach
'I wanted to go to the beach.'

c. Ci=so   vulute   ji   da sole.
there=be.PRS.1SG want.PRTC go.INF by myself

d. *C=aje   vulute   ji   da sole.
there=have.PRS.1SG want.PRTC go.INF by myself
'I wanted to go there by myself.'   (R. D'Alessandro, p.c.)

In Ariellese, the perfect auxiliary in correspondence with first person subject is invariably BE in root clauses. As (237) shows, the same happens in restructuring. The auxiliary exclusively depends on the person feature of the subject of the restructuring verb, without any variation or optionality.

This fact can be explained with the analysis of person-driven auxiliary selection that I propose in chapter 6. In person-driven auxiliary selection, the person probe on Perf is not constrained by Nested Agree because it is ordered before the [uInfl] probe. Hence, the person probe on Perf targets the subject, which is the highest matching goal in the search domain. In restructuring, the subject has raised to Spec,v_{restr}, where it is the highest possible matching goal for Perf. Given the presence of the raised DP in Spec,v_{restr}, both the type of complement and the features on v_{restr} are irrelevant. Auxiliary switch based on the argument structure of the lexical verb is impossible in languages with person-driven

auxiliary selection because Perf invariably probes the subject.

Moreover, clitic climbing is obligatory: the clitic must be located in the higher position. This fact indicates that in Southern varieties the complement of a modal verb can only be a vP. Hence, in those Southern varieties where auxiliary selection is person-driven, a restructuring verb can take only a vP complement and may or may not be selected by the special v_{restr}, with any effect on the form of the perfect auxiliary.

The behavior of clitic placement and auxiliary selection in dialects confirms once again that the two phenomena are independent. In general, these data show that the correlation between restructuring and transparency effects cannot be absolute, and their absence does not necessarily imply the lack of restructuring.[65] If in the Southern dialects clitic climbing always takes place, whereas in Standard Italian it is optional, should one conclude that in the former restructuring is always obligatory, whereas in latter it is optional? Should one draw the opposite conclusion for the Northern dialects, namely that restructuring does not exist there, since there are no transparency effects (although there might still be other monoclausal properties, such as subject raising, simultaneous tense interpretation, and so on)? If this is the case, then restructuring is optional in Standard Italian, obligatory in the Southern dialects (and transparency effects are obligatory, too, although only clitic climbing is possible), and excluded in the Northern dialects. This does not seem plausible.

Another possibility is that transparency effects are optional in Italian, obligatory in the Southern dialects, impossible in the Northern varieties. This approach is based on Cinque's (2004) proposal, according to which restructuring necessarily takes place, and transparency effects are optional.

However, it seems to me that these facts naturally follow from having different sizes of the complement, as I have proposed in this section. A sensible way to make a description and an analysis of these facts is as follows.

(238)   a.   Person-driven Southern dialects (Ariellese): vP complement
                 - clitic climbing,
                 - auxiliary switch not applicable
         b.   Argument-structure-based Northern dialects (Paduan): TP complement
                 - lack of clitic climbing,
                 - auxiliary switch not possible

In dialects where clitic climbing is obligatory, such as many Southern varieties, the complement of the restructuring verb must be a vP, with no optionality. Auxiliary switch could in principle take place, since the complement is small enough. However, in these dialects auxiliary selection is person-driven. Consequently, auxiliary switch is not possible, and the realization of the auxiliary always depends on the person feature of the subject.

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[65]As already noted by Egerland (2009), dialects where in restructuring clitic climbing is obligatory and auxiliary switch is impossible, such as most of the Southern Italian varieties, constitute a problem for the macroparametric analysis of restructuring, according to which the possibility of restructuring should correlate with the possibility of transparency effects.

In dialects where clitic climbing is impossible, such as many Northern varieties, the complement of the restructuring verb must always be a TP. Auxiliary switch is not possible, since the complement is too big. In fact, the presence of a T head necessarily leads to HAVE insertion.

There is also an interesting implication between the different transparency effects, which finds an explanation in the analysis of auxiliary switch that I have proposed in this chapter. According to a study performed by Egerland (2009) on speakers from different geographic areas (Vallebona, Brescia, Reggo Emilia in Northern Italy; Gallipoli, San Martino in Pensilis, Catanzaro in Southern Italy; Cagliari in Sardinia), if an informant accepts auxiliary switch with a restructuring verb, s/he also accepts clitic climbing with it.

(239)   a.   If auxiliary switch → clitic climbing
         b.   If no clitic climbing → no auxiliary switch

The implication (239), proposed by Egerland (2009), states that if auxiliary switch is possible, clitic climbing must also take place. Under the present analysis, auxiliary switch and clitic climbing can apply if the complement of the restructuring verb is a vP. However, auxiliary switch requires more specific conditions than clitic climbing does. The former depends both on the size of the complement and on the features on v_{restr}, whereas the latter depends only on the size of the complement.

We have just seen that in person-driven systems auxiliary switch is impossible, even though the complement is a vP. In languages where auxiliary selection is argument structure-based, the realization of auxiliary switch requires both a vP complement and the presence of v_{restr}. If there is no auxiliary switch, one of these conditions is missing. If clitic climbing is excluded, auxiliary switch is impossible because the complement is a TP. If clitic climbing takes place, it means that the complement is a vP. In this case, if auxiliary switch is not possible, this is either because of independent reasons (as is the case for person-driven varieties) or because the head v_{restr} is missing.

To conclude, the dialectal data constitute a confirmation of the adequacy of the present analysis of restructuring and auxiliary selection.

5.12 Summary

In this chapter, I have provided the first formal analysis of auxiliary selection in restructuring, as far as I am aware of. These monoclausal complex constructions are characterized by apparently optional transparency effects in the choice of the clausal auxiliary associated with the restructuring verb: the auxiliary can be either HAVE, or the one corresponding to the lexical verb (auxiliary switch).

I have argued that if one assumes that auxiliary selection is an instance of π-Agree and if the lower portion of the clause can be of different sizes (as there is evidence for), then

the data about auxiliary selection are exactly predicted. Hence, the hypothesis about auxiliary selection as π-Agree finds a further confirmation in these data. By deriving the distribution of the auxiliary BE and HAVE in restructuring, I have provided further support to my analysis of auxiliary selection as π-Agree.

The transparency effects in auxiliary selection arise because restructuring configurations are created by a special type of v_{restr}, which creates a chain of information via Agree. This is possible because of a double [Infl] feature that builds the connection between the higher and the lower portion of the clause. In case of a small complement below this v_{restr}, the clausal auxiliary faithfully corresponds to the one that would be selected by the lower v, since v_{restr} copies the information on the lower v, which is successively copied by Perf. Auxiliary switch consists of the emergence of BE due to failed Agree or Agree with ϕ-defective items, as we saw for root clauses. Nevertheless, this effect is optional, since it depends on the size of the complement. Different complement sizes determine different search domains for Agree. By enlarging the complement, the lower v is not anymore the decisive factor for the realization of the auxiliary. Instead, the presence of a person feature on the T head neutralizes the difference between the different types of v and suppresses the transparency effect, leading to HAVE insertion, regardless of the type of lexical verb. Hence, there is no real optionality for auxiliary selection, but rather for the type of complement of v_{restr}.

I have also examined the correlation between auxiliary switch and clitic climbing. In particular, I have highlighted the indirect interaction of auxiliary selection with clitics, since both depend on the size of the complement. In the case of a small complement (a vP), both auxiliary switch and clitic climbing take place, if applicable. In the case of a large complement (a TP), the auxiliary is invariably HAVE and the clitic remains in the lower position. I have also discussed some problematic cases where the correlation is not so neat. For these cases, I have proposed a sketch of solution that makes use of a defective v_{restr} where there should be a non-defective one.

Finally, I have discussed the behavior of other restructuring verbs that are not subject to auxiliary switch. Aspectual verbs determine the realization of the clausal perfect auxiliary as HAVE, motion verbs as BE. I have analyzed these verbs as combining with a restructuring v that is different from the one found with modal verbs and that reminds of, respectively, a transitive and an unaccusative v. This explains their resistance to auxiliary switch and sheds light on other properties that they exhibit. I have also provided new data about the possibility of auxiliary switch for some aspectual verbs under specific circumstances (for instance, in the context of clitic climbing). I have tentatively explained this behavior as the result of the selection of some aspectual verbs by the modal v_{restr} head. The puzzle is not completely solved yet, but it has found a first explicit syntactic analysis that can account for most of the data. Still, more research is needed to explain the nature and the variability of the properties of restructuring.

6 Auxiliary selection and participle agreement in other Italo-Romance varieties

6.1 Introduction

In the previous chapters, I have developed a detailed analysis of auxiliary selection in Italian, thereby deriving the distribution of the auxiliaries BE and HAVE in root clauses, in restructuring and in accordance with participle agreement. As far as auxiliary selection is concerned, Standard Italian is an argument-structure-based system: the auxiliary "signals" the type of argument structure of the lexical verb. I have claimed that this is possible if auxiliary selection is the morpho-phonological realization of syntactic Agree for person. Depending on how the operation Agree is carried out, different patterns of auxiliary selection emerge. In particular, in many Central and Southern Italo-Romance varieties the auxiliary depends on the person feature of the subject, without any influence of the type of argument structure. Auxiliary selection in these languages is person-driven. Next to person restrictions, number features or tense and aspect can make the distribution of the two auxiliaries more fine-grained.

I have also argued that in Italian past participle agreement is the morpho-phonological realization of gender- and number-Agree due to successive cyclic movement. This takes place when the structure contains some kind of featural defectiveness. In other Italo-Romance dialects, participle agreement exhibits different patterns: it can be as in Italian, it can be controlled by the object or by another argument that is specified for a particular feature, or it can be absent. As in Standard Italian, also in other Italo-Romance dialects participle agreement is not dependent on auxiliary selection.

In this chapter, I show how person-driven auxiliary selection can be derived by the same system I have proposed for Italian. It is the difference in the ordering of features on the head Perf that gives rise to these different types of auxiliary distribution. I also address the interactions with further restrictions and the variation in participle agreement. In addition, I discuss the possibility of person restrictions in argument-structure-based system.

The chapter is structured as follows. In section §6.2 I illustrate my proposal for person-split auxiliary systems. Then, I provide the example of Ariellese and I propose the derivation for root clauses and restructuring (§6.2.1). After that, I discuss some different types of splits, following the work of Ledgeway (2019): systems restricted by tense, aspect or mood (§6.3), by number (§6.3.1), systems with a single auxiliary (§6.4) and systems where the person alternation is restricted to a specific argument structure (mixed systems) (§6.5). In particular, I show that the empirical description finds a theoretical explanation in my analysis. In section §6.6 I explain the variation in presence of reflexive pronouns in

argument-structure-driven systems, both cross-linguistically (§6.6.1) and within languages (§6.6.2). In section §6.7 I sketch an analysis of the interaction of the auxiliaries with clitic pronouns. In section §6.8 I give an explanation for the possible and impossible interactions between the two types of auxiliary selection. In §6.9 I briefly describe other argument-structure-driven systems, such as German and French. The second part of the chapter deals with participle agreement (section §6.10). The discussion contains a sketch of analysis for Ariellese in section §6.10.1, and a section on reflexives (§6.11). Finally, I show the possible combinations of auxiliary selection and participle agreement in Italo-Romance varieties (section §6.12). The concluding section §6.13 summarizes the main results of this chapter.

6.2 Person-based auxiliary selection: the proposal

In many Italo-Romance varieties, the morphological realization of the perfect auxiliary depends on the person of the subject and not on argument structure. Languages of this type are found in particular in Central and Southern Italy, but some Northern varieties also show person-driven splits (for instance, some Novarese dialects of Piedmont), and some northern Catalan dialects outside Italy (Ledgeway 2019: 357). The exact distribution of HAVE and BE according to person is language-specific and there is huge variation among the Romance varieties spoken in Italy. In the most frequent pattern, the auxiliary corresponding to first and second persons (local persons, under the terminology proposed by Aissen 1999) is realized differently from the auxiliary of third person. This frequently gives rise to the paradigm BE-BE-HAVE (BBH). Such an example is the variety spoken in Southern Lazio, where the perfect auxiliary for any verb is BBH, as shown in (1).[1]

(1)   *Southern Lazio*

    a.   So   maɲˈɲatə.
         be.PRS.1SG eat.PRTC
         'I have eaten.'

    b.   Si   maɲˈɲatə.
         be.PRS.2SG eat.PRTC
         'You have eaten.'

    c.   A   maɲˈɲatə.
         have.PRS.3SG eat.PRTC
         'S/he has eaten.'

    d.   ˈSema   maɲˈɲatə.
         be.PRS.1PL eat.PRTC
         'We have eaten.'

    e.   ˈSeta   maɲˈɲatə.
         be.PRS.2PL eat.PRTC
         'You have eaten.'

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[1]For all examples in this chapter, I give the string as I found it in the source reference. In general, it is a transcription that contains IPA symbols, with different level of accuracy.

f. ˈAna   maɲˈɲatə.
    have.PRS.3PL eat.PRTC
    'They have eaten.'   (Cordin 1997: 93)

The reversal distribution HHB is also attested, although more rarely. Examples are the dialects of Pompei (Giammarco 1973) and Aliano (Manzini and Savoia 2005) (but note that HHB seems to be restricted to unaccusative verbs). Moreover, next to splits that separate 1st-2nd person from 3rd person, almost all combinations are possible. For instance, there are also examples where the 1st and 3rd person pattern together with exclusion of the 2nd. A case is Bisceglie (HBHHHH): the 2nd person singular selects BE, whereas 1st and 3rd persons determine HAVE insertion (Loporcaro 2007: 195). Other varieties of this type are Introdacqua (HBHHHH) (Loporcaro 2007: 184) and Canosa Sannita (HBHHBH) (Legendre 2010). In Gioia del Colle, the distribution of HAVE and BE for the singular is opposite to the above-mentioned dialects, but still, the auxiliary for 1st and 3rd person singular is different from the auxiliary for 2nd person singular (BHBHHH) (Loporcaro 2007: 196).[2]

There are also cases where just the first person is realized differently from the other persons. Examples are Capracotta (HBB) (Manzini and Savoia 2005: II: 708), Roccasicura (B∼H B B B B B) and Canosa di Puglia (B∼H H H H H H) (Ledgeway 2019: 363).

Also closely related dialects may be affected by huge variation. In Table 6.1, I represent the distribution of the perfect auxiliaries in the closely related varieties of L'Aquila, Vasto, Introdacqua and Notaresco (Abruzzo), originally provided by Giammarco (1973: 162-6), and discussed by Loporcaro (2001).

	1st sg	2nd sg	3rd sg	1st pl	2nd pl	3rd pl
L'Aquila	B	B	H	B	B	H
Vasto	H	B	B∼H	H	H	H
Introdacqua	H	B	H	H	H	H
Notaresco	B	H	H	H	H	H

Table 6.1: Variation in auxiliary selection in Abruzzo (Loporcaro 2001).

To sum up, the splits according to person range from the classical pattern BBH to the opposite HHB, to free variation, to splits that single out just the second person or only the first person (for references, cf. Loporcaro 2001, 2007, 2016; Manzini and Savoia 2005, 2007; Legendre 2010; Ledgeway 2019).

In addition, the variation can be constrained by some other factors. For instance, in

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[2]It should be noted that the data presented in Manzini and Savoia (2005) contradict this picture. According to that study, Bisceglie is BBH (Manzini and Savoia 2005: II: 721), Canosa Sannita is BBH too (Manzini and Savoia 2005: II: 687). For Introdacqua and Gioia del Colle there is no documentation there. Moreover, Manzini and Savoia (2005: II: 728) provide themselves a list of varieties where the 2nd person patterns differently from the other persons: Vastogirardi, Sassinoro, Ruvo, Bitetto. However, in all the cases they mention, there is optional alternation between HAVE and BE at 1st and 3rd person: H∼B B H∼B. Hence, new data should be gathered in order to have a more precise picture of linguistic variation. What is relevant for the present discussion is that many different combinations are attested.

some varieties the alternation is attested in the singular, whereas in the plural there is less variation (cf. Bisceglie). Moreover, in the pluperfect and in the counterfactual (future-oriented conditional perfect/pluperfect subjunctive) a single auxiliary is often generalized: such an example is San Benedetto del Tronto, where the pattern BBH is replaced by BE in the counterfactual perfect (Cocchi 1995: 124, Manzini and Savoia 2005: II: 682-683, Ledgeway 2019: 356). I will discuss these further restrictions in the next sections.

Given the astonishing cross-linguistic variation, even among closely related dialects (cf. Table 6.1), I argue that the specific realization of the auxiliary must be due to the morpho-phonological component of the grammar, meaning that it should depend on the specific vocabulary entries (as already acknowledged by D'Alessandro 2017b). That the variation depends on the vocabulary entries is also clear from the choice of the elsewhere form. When one form is generalized in some parts of the paradigm, for example in the plural or in the pluperfect, dialects that otherwise share the same pattern make opposite decisions. Such an example are Pescocostanzo and Giovinazzo: the former generalizes BE at the plural, the latter HAVE, although they have identical auxiliary patterns in the singular (Ledgeway 2019: 361). Hence, the fine-grained distinctions must be due to language-specific VI inventories. However, the dependency on the person feature that is realized by the vocabulary entries must be due to syntax, since it is encoded in the morpho-syntactic feature of person $[\pi]$.

I claim that auxiliary selection realizes the result of person-Agree on Perf, as is the case in Standard Italian. A similar proposal has been developed by D'Alessandro (2017b), although only for the person-driven varieties spoken in Abruzzo and not for Standard Italian. The dependence from the person feature of the subject is achieved if the order of the probes on Perf is switched with respect to Italian. Perf bears a person probe that targets the DP argument in Spec,v, which is the highest possible goal. This is possible if, differently from Italian, the person probe is ordered as first on the head. The consequence is that its search domain is the whole c-command domain of the head Perf, which includes the DP as the highest matching goal. The second operation triggered by the probe [uInfl] is subject to Nested Agree, meaning that the search domain now has its starting point in Spec,v (where the goal of the previous operation is located). However, since the goal for [Infl] is v, Agree always succeeds.[3] The feature ordering on the head is as in (2-a), switched with respect to Italian (2-b).

(2)   a.   Perf $[u\pi] \succ$ [uInfl:perf]   person-driven

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[3]Clearly, I adopt the phase theory also for person-driven dialects. Would unaccusative v not be a phase, under the order in (2-a) the probe [uInfl] would not be able to find its goal once the internal argument has been probed in Comp,v. In fact, if defective v is not a phase, the DP does not move to its edge. Hence, the DP is accessible for $[u\pi]$, but v is not accessible for [uInfl]. This is due to the fact that Nested Agree restricts the domain of [uInfl] to Comp,v, with the result that v lies outside the domain of [uInfl]. If Agree for [uInfl] fails, the lexical verb cannot acquire the value *perf* for the feature [Infl:_], which determines the realization of past participle inflection.

b. Perf [uInfl:perf] ≻ [uπ]   argument-structure-based

In the Southern type (2-a), the π value comes from DP$_{sbj}$, resulting in person-driven auxiliary selection. In the Standard Italian type (2-b), the π value is copied from v, thereby tracking both the argument structure type and the feature of the object, leading to argument-structure-driven auxiliary selection.

The syntactic operations for the Southern type (2-a) are illustrated in trees (3) and (4).

(3)   Step 1: Agree for [uπ:_]   (4)   Step 2: Agree for [uInfl:perf]
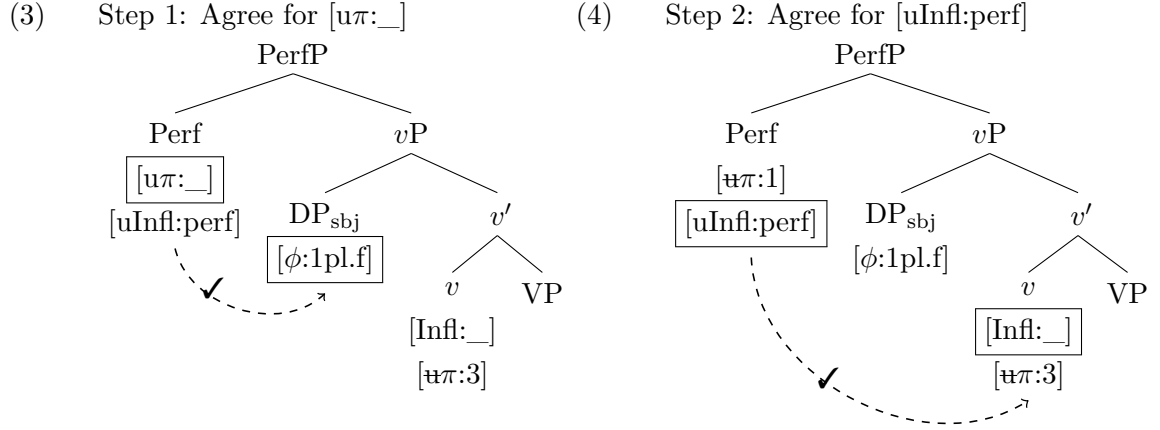
Hence, the syntactic implementation of the variation in auxiliary selection lies in the feature ordering. This is in line with recent proposals that see cross-linguistic variation as the result of different extrinsic ordering of features that induce operations (Heck and Müller 2006; Müller 2009; Georgi 2014). The different ordering in (2), together with Nested Agree as an active principle on ordered operations, shapes the typological difference between argument-structure-based and person-driven auxiliary selection. All other fine-grained distinctions depend on the morpho-phonological realization due to different vocabulary entries, which can also be sensitive to other morpho-syntactic factors, such as the features on T or the features of reflexive pronouns.

One prediction stems from this analysis: person-driven systems are never sensitive to the person feature of the object. In fact, Perf targets the subject for π-Agree, which can always stop Agree because it bears ϕ-features. This means that the person-probe on Perf can never reach either v or the object. Hence, we expect the same perfect auxiliary both for a reflexive transitive clause and for a canonical transitive clause. As far as I know, this prediction is borne out (cf., for instance, Ariellese in section §6.2.1). I am not aware of any case of person-driven auxiliary selection where the person features of the object determine the form of the auxiliary. This is due to minimality: the subject is the highest matching goal for Agree on Perf and the object cannot be reached. Let me clarify that there are some varieties where reflexive clauses pattern differently from transitive clauses (as is the case in Standard Italian). For these varieties, I will argue in section 6.5 that these are instances of argument-structure-driven auxiliary selection, with additional person restrictions.

In the next section, I illustrate the proposal for a BBH variety, Ariellese.

6.2.0.1 Previous analyses

Previous analyses of person splits tend to focus on the typical pattern BBH (Tuttle 1986; Kayne 1993; Cocchi 1995; Manzini and Savoia 2005; D'Alessandro and Roberts 2010; Coon and Preminger 2012; Steddy and van Urk 2013). Hence, they fail to predict the opposite realization HHB or those systems where the cutting point is not on the third person. Legendre (2010) acknowledges that the variation in auxiliary selection constitutes "a challenge to any attempt at characterizing person-based auxiliary selection in terms of a formal approach with any predictive power" (Legendre 2010: 2). She provides an analysis of person-driven auxiliary selection framed in Optimality Theory. However, she uses ad hoc constraints that correlate a person scale to an auxiliary scale. Moreover, in order to account for all the possible interactions with tense, aspect, mood, and argument structure, she would need to include further constraints that increase the number of possible languages, without reflecting any real generalization. In fact, argument-structure-driven splits emerge from the interactions of lexico-aspectual constraints (Legendre 2007). In this dissertation, I have argued that the determining factor for auxiliary selection is both the syntactic structure and the features of all arguments, as the case of Standard Italian reflexive and impersonal clauses has shown. Hence, it seems inadequate to model argument-structure-driven systems just with lexico-aspectual constraints. Moreover, all these different classes of constraints (those proposed in Legendre (2007) and in Legendre (2010) plus some more TAM constraints) should be used together within the same typology, in such a way that one can derive all the possible interactions (and only the possible interactions) of these principles. If an analysis in line with Legendre's account can explain both argument-structure-driven and person-driven systems at the same time, remains to be verified.

6.2.1 Ariellese

6.2.1.1 The distribution of HAVE and BE

Ariellese is an Italo-Romance variety spoken in Abruzzo. The perfect auxiliary is BE for first and second person subjects, whereas a third person subject determines HAVE insertion. Example (5) shows the pattern BBH for transitive (5-a,b), unergative (5-c,d) and unaccusative predicates (5-e,f).[4]

(5) a. Ji   so'   fatte   na torte.
         NOM.1SG be.PRS.1SG make.PRTC a cake
         'I have made a cake.'

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[4]In this dissertation, transitive and unergative verbs are always considered together, since in all Romance varieties they behave in the same way as far as auxiliary selection is concerned (Loporcaro 2001: 463, Loporcaro 2007: 180).

    b.   Esse   a   fatte   na torte.
         NOM.3SG have.PRS.3SG make.PRTC a   cake
         'She has made a cake.'

    c.   Ji   so'   fatijate.
         NOM.1SG be.PRS.1SG work.PRTC
         'I have worked.'

    d.   Esse   a   fatijate.
         NOM.3SG have.PRS.3SG work.PRTC
         'She has worked.'

    e.   Ji   so'   cascate.
         NOM.1SG be.PRS.1SG fall.PRTC
         'I have fallen down.'

    f.   Esse   a   cascate.
         NOM.3SG have.PRS.3SG fall.PRTC
         'She has fallen down.'   (D'Alessandro and Roberts 2010: 43-44)

Importantly, the pattern BBH is also found with reflexive clitics (both as a direct object and as a benefactive indirect object). This is expected if in Ariellese the probe on Perf always targets the subject. Examples (6) contain a reflexive direct object, examples (7) a reflexive indirect object.

(6)   a.   Me=so   llavate   jire   sere.
            REFL.ACC.1SG=be.PRS.1SG wash.PRTC yesterday night
            'I washed myself last night.'

        b.   Marije s=a   llavate   jire   sere.
            Maria REFL.ACC.3SG.F=have.PRS.3SG wash.PRTC yesterday night
            'Maria washed herself last night.'   (R. D'Alessandro, p.c.)

(7)   a.   Me=so   llavate   li vistite da sole.
            REFL.DAT.1SG=be.PRS.1SG wash.PRTC the clothes by myself
            'I washed my clothes by myself.'

        b.   Marije s=a   llavate   li vistite da sole.
            Maria REFL.DAT.3SG.F=have.PRS.3SG wash.PRTC the clothes by herself
            'Maria washed her clothes by herself.'   (R. D'Alessandro, p.c.)

As expected, the distribution BBH hold across all clausal types. In addition to the reflexive clauses, passive predicates (8) and quirky verbs (9) exhibit the same perfect auxiliary.

(8)   a.   Ji   so   statə   nvitatə.
         NOM.1SG be.PRS.1SG be.PRTC invite.PRTC
         'I was invited.'

        b.   Marije a   statə   nvitatə.
         Maria have.PRS.3SG be.PRTC invite.PRTC
         'Maria was invited.'   (R. D'Alessandro, p.c.)

(9) a. A me   m'a   piaciutə lu paninə.
         to DAT.1SG REFL.DAT.1SG have.PRS.3SG like.PRTC the sandwich
         'I liked the sandwich.'

     b. A Marije j'a   piaciutə lu paninə.
         to Maria DAT.3SG have.PRS.3SG like.PRTC the sandwich
         'Maria liked the sandwich.'   (R. D'Alessandro, p.c.)

Impersonal clauses are possible with the generic meaning. A example is in (10).

(10)   A la casa mè s=a   sembre magnite li spaghitte.
         at the home my IMPERS=have.PRS.3SG always eat.PRTC the spaghetti
         'At my place, one has always eaten spaghetti.'   (R. D'Alessandro, p.c.)

The perfect auxiliary in impersonal clauses is HAVE. This means that the impersonal clitic in Ariellese is marked for third person as default features, differently from Italian. Alternatively, this could show that the elsewhere form in Ariellese is HAVE, rather than BE, as suggested below in (12).

According to the proposal developed in section §6.2, these data are generated if the order of features on the head Perf is [uπ:_] ≻ [uInfl:perf]. The lexical entries should be as in (11) or in (12). In the former, the elsewhere form is BE, as in Standard Italian, and HAVE is the more specific allomorph, which can be inserted only in the presence of a 3rd person. The latter, instead, presupposes HAVE as the elsewhere form and specifies BE for local persons.

(11)   a. /√HAVE/ ↔ Perf[π:-part]
         b. /√BE/ ↔ Perf elsewhere

(12)   a. /√BE/ ↔ Perf[π:+part]
         b. /√HAVE/ ↔ Perf elsewhere

In principle, both (11) and (12) are possible lexical inventories of Ariellese. In fact, in many closely related dialects the elsewhere form is either BE or HAVE (Ledgeway 2019).

Ariellese has also a complex pluperfect. In first and second person, two auxiliaries are present: the higher one follows the BBH pattern, the lower one is always HAVE (13-a). In third person, there is just a single auxiliary, which is realized as HAVE (13-b).

(13)   a. (ji)   so   ve'   magnatə/cagnatə/fatijatə.
         NOM.1SG be.PRS.1SG have.IMPF.PST eat/change/work.PRTC
         'I had eaten/changed/worked.'

     b. (essə)   ave'   magnatə/cagnatə/fatijatə.
         NOM.3SG.F have.IMPF.PST eat/change/work.PRTC
         'She had eaten/changed/worked.'   (D'Alessandro 2017b: 20)

This can be obtained if in the pluperfect the higher auxiliary corresponds to Perf, whereas the lower auxiliary realizes a further aspectual projection, lower than Perf. This latter is

either expressed as HAVE, or as a null exponent when it is c-commanded by Perf[π:-part] (assuming that this Asp head-moves to Perf) when itself bears a person feature valued as third person (if it bears a person probe that targets the subject). The head Perf is then realized according to the rules in (11) or (12), leading to the higher auxiliary.[5] For the influence of tense and aspect, cf. section §6.3.

6.2.1.2 Restructuring

The analysis finds additional support in the data concerning restructuring. In these more complex cases, a lexical verb is the argument of a modal verb in a monoclausal configuration and the subject raises to the matrix position (cf. chapter 5). The following examples were given by Roberta D'Alessandro as translations for the Italian sentences with both auxiliaries. The Ariellese sentence in (14-a) corresponds both to Standard Italian *Sono voluta andare al mare* and *Ho voluto andare al mare* (cf. chapter 5 for the discussion of auxiliary switch in restructuring in Italian).

(14) a. So   vulute   ij   a lu mare.
          be.PRS.1SG want.PRTC go.INF to the beach
          'I wanted to go to the beach.'

      b. Marije a   vulute   ji   a lu mare.
          Maria have.PRS.3SG want.PRTC go.INF to the beach
          'Maria wanted to go to the beach.'

      c. Ci=so   vulute   ji   da sole.
          there=be.PRS.1SG want.PRTC go.INF by myself

      d. *C=aje   vulute   ji   da sole.
          there=have.PRS.1SG want.PRTC go.INF by myself
          'I wanted to go there by myself.'

      e. Marije c=a   vulute   ji   da sole.
          Maria there=have.PRS.3SG want.PRTC go.INF by herself
          'Maria wanted to go there by herself.'   (R. D'Alessandro, p.c.)

Unaccusative verbs in example (14), transitive verbs in (15) and transitive reflexive verbs in (16) behave all in the same way: BBH, with no other possible realizations.

(15) a. Li=so   vulute   fa   da sole.
          ACC.3SG.M=be.PRS.1SG want.PRTC do.INF by myself
          'I wanted to do it by myself.'

      b. Marije l=a   vulute   fa   da sole.
          Maria ACC.3SG.M=have.PRS.1SG want.PRTC do.INF by myself
          'Maria wanted to do it by herself.'   (R. D'Alessandro, p.c.)

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[5]The situation is a bit more complicated, since in 1st, 2nd person the aspectual information is realized on the aspectual auxiliary and the inflection on Perf, whereas in the 3rd person both information are on Perf.

(16) a. Me=so   vulute   allava'   da sole.
          REFL.ACC.1SG.F=be.PRS.1SG want.PRTC wash.INF by myself

      b. *M=aje   vulute   allava'   da sole.
          REFL.ACC.1SG.F=have.PRS.1SG want.PRTC wash.INF by myself
          'I wanted to wash me by myself.'

      c. Marije s=a   vulute   allava'   da sole.
          Maria REFL.ACC.3SG.F=have.PRS.1SG want.PRTC wash.INF by herself
          'Maria wanted to wash her by herself.'   (R. D'Alessandro, p.c.)

As the examples show, it is impossible to find the perfect auxiliary HAVE with 1st and 2nd person, and the auxiliary BE with 3rd person. The distribution of the perfect auxiliaries of the modal verb is BBH and does not depend on the argument structure of the lower verb. The perfect auxiliary of the modal verb follows the same pattern as in root clauses (here, BBH), as is expected if the person probe on Perf always targets the subject. This is different from Italian. Recall that, in Italian, if a modal verb takes a transitive verb as its complement, the auxiliary is invariably HAVE; if the lower verb is unaccusative, reflexive or impersonal, then the auxiliary is optionally BE.

Note that this distribution of auxiliaries does not depend on the features of v_{restr} or on the size of the complement clause: [uπ] on Perf always targets the subject, which has been raised to Spec,v_{restr}. However, the complement of the modal verb should be a vP, given that clitic climbing is always obligatory, and it is impossible to have enclisis on the infinitive.

To sum up, in restructuring the perfect auxiliary of the modal verb always depends on the person feature of the subject. The perfect projection is realized by the appropriate auxiliary depending on the features of the raising subject, as it happens in root clauses, independently of the valency of the lower lexical verb.

6.3 Tense, aspect and mood variation

So far, we saw that auxiliary selection may depend either on the argument structure or on the features of the subject (or on both, as I will show in section §6.5). In this section, I discuss the influence of modal and temporal restrictions (TAM).

In many varieties, auxiliary alternations are confined to particular mood or tense specifications. If a language has a person-driven or an argument-structure-based system of auxiliary selection, TAM restrictions contribute to more fine-grained distinctions, as exemplified in the schema (17).[6]

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[6]It is hard to find person-driven varieties where there are no TAM restrictions. In general, alternations based on person are restricted to the present tense; instead, when the auxiliary is realized as an imperfective, a conjunctive or a conditional form, one allomorph is generalized over the other one (Manzini and Savoia 2005: II: 729). This fact can be explained if there are further aspectual projections that block Agree between Perf and the DP$_{\text{sbj}}$. Alternatively, it could show that the dependency on the feature of the subject is realized by contextually sensitive vocabulary entries that Spell-out Perf in the context of particular features on T, as proposed for example for mixed systems in section §6.5. I leave for future research the

(17)   TAM restrictions

```
                              auxiliary
                         /                \
                person-based         argument-structure-based
                /          \              /          \
            TAM          no TAM        TAM          no TAM
         (Campli)                   (Procida)      (Italian)
    (S. Bendedetto del Tronto)
```

A very frequent case of tense restriction is when the two auxiliaries alternate in the present tense, but the elsewhere form is found outside this context. An example of person-driven system restricted by tense is the dialect spoken in Campli (Abruzzo), where the pattern BBH is found only in the present and counterfactual present, whereas BE is generalized in the pluperfect (Manzini and Savoia 2005: II: 685-686, Ledgeway 2019: 357).

A system restricted by mood is the dialect spoken in San Benedetto del Tronto (Marche). Here, the person split has progressively been suppressed from the pluperfect and counterfactual paradigms and has been kept only in the present perfect (Cocchi 1995: 124, Ledgeway 2019: 360).

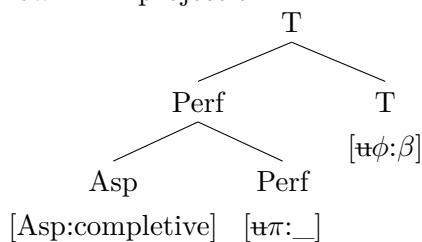Among the argument-structure-based systems, there are languages where the split is found only in the present perfect, whereas a single auxiliary is generalized in the pluperfect and counterfactual perfect. Such an example is the dialect spoken in Procida, where BE is generalized outside the present perfect (Ledgeway 2000: 624-626).

A TAM category corresponds to a syntactic modal/aspectual head in the syntactic projection. The influence of TAM categories is possible either because of head movement, or because of Agree. In the former scenario, Perf becomes part of the complex head Asp-Perf-T and it is realized by a contextually sensitive VI that refers to the presence of the TAM node in the complex head. In the latter scenario, Perf has a TAM probe that copies the value of a lower AspP, or it is realized by a contextually sensitive VI that considers the presence of a c-commanding aspectual head, in case of a high AspP. I propose to model the TAM-interaction with head movement. I consider the complex head to which Perf moves, ultimately T, which can contain further TAM heads. The resulting syntactic structure looks like (18) (low aspect) or (19) (high aspect).

(18)   Low TAM projection

```
                      T
                  /       \
              Perf         T
             /    \      [ʉφ:β]
          Asp    Perf
    [Asp:completive]  [ʉπ:_]
```

(19)   High TAM projection

```
                      T
                  /       \
              Asp          T
             /    \      [ʉφ:β]
          Perf  [Asp:irrealis]
        [ʉπ:_]
```
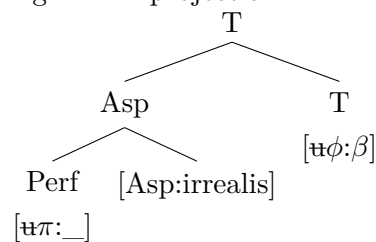
The lexical entry that spells out Perf refers to the features of other subparts of the

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question about why this should be the case.

complex head.[7] In (20) is an example of vocabulary entries for a language where auxiliary selection is based on argument structure (since the relevant value for [π] at Spell-out is α and not a specific one, meaning that what counts is the presence of any person value versus the lack of a person value) and sensitive to further TAM-restrictions. In this example, HAVE realizes the perfect auxiliary of a transitive verb, and of all clauses in the irrealis aspect (counterfactual perfect).

(20)   a. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi{:}\alpha]$
       b. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf} \ / \ \text{Asp}[\text{Asp:irrealis}]$
       c. $/\sqrt{\text{BE}}/ \leftrightarrow \text{Perf}$ elsewhere

As for the elsewhere form, in Central Italy the generalized form outside the present is generally BE; in South-Eastern Italy the elsewhere form tends to be HAVE (Ledgeway 2019: 356). This fact can be modeled either if the elsewhere form is HAVE for the latter dialects, or if HAVE is still the most specific allomorph and realizes Perf when an aspectual projection is present in the structure (visible either in the complex head or via Agree on Perf), as I have exemplified in (20).

As a final remark, varieties where the auxiliary is exclusively conditioned by TAM categories are quite rare (Ledgeway 2019: 352-353). Within Romance outside Italy, Romanian is a language where the auxiliary entirely depends on mood: it is HAVE in the realis mood, BE in the irrealis mood (Avram and Hill 2007). An Italo-Romance variety of this type is San Leucio del Sannio (Iannace 1983: 72-80, 88-89, Ledgeway 2019: 350): the present perfect (21-a) and the counterfactual perfect (21-b) exhibit HAVE, whereas the pluperfect (21-c) has BE.

(21)   *San Leucio del Sannio*

       a.   Èggio   fatto   tutto.   / Èggio   muorto. /
            have.PRS.1SG do.PRTC everything   have.PRS.1SG die.PRTC
            M=èggio   lavato.
            REFL.ACC.1SG=have.PRS.1SG wash.PRTC
            'I have done everything / died / washed myself.'

       b.   Si nun ésse   muòrt' u   marito   nun s=ésse
            if not have.CONJ.3SG die.PRTC the husband not ACC.3SG=have.CONJ.3SG
            móssa   da llá.
            move.PRTC.SG.F from there
            'If her husband hadn't died she wouldn't have ever moved from there.'

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[7]In the present discussion, I consider tense, aspect and mood to be realized via a syntactic head that is local to Perf, either because of Agree or by means of head movement. It should be noted that if mood is marked on C, then auxiliary selection can be influenced by C only when there is T-to-C movement. For the Romanian case, the auxiliary that occurs in the irrealis mood is realized as a clitic in enclisis on an affix mood marker that is higher than T. Hence, the mood information is local to Perf because of head movement. For each language, a separate investigation is needed in order to understand the exact position of the morpho-syntactic features that influence the realization of the auxiliary, but the expectation is that the relation should be local enough to be represented in the vocabulary entries.

c. Érem'   auta   dice   quello. / Éra   venutu.   /
   be.PST.1PL have.to.PRTC say.INF that   be.PST.3SG come.PRTC
   S=era   truatu   nu béllu póstu.
   REFL.DAT.3SG.M=be.PST.3SG find.PRTC a   nice job
   'We had had to say that / He had come / He had found himself a nice
   job.'   (Ledgeway 2019: 350-351)

Since the languages where auxiliary selection is exclusively constrained by tense or mood are few, I follow Ledgeway (2019) in considering TAM-interactions as further restrictions, as schematized in (17), instead of talking of tense- or mood-based systems.

6.3.1 Number restrictions

Another possible distinction concerns number specifications. Person-driven splits that are restricted to the singular can be found in Pescocostanzo and Giovinazzo. In Pescocostanzo BE has been generalized in the plural, and in Giovanazzo HAVE (Ledgeway 2019: 361). As is often the case, these two varieties share an identical pattern in the distribution of the auxiliaries, but differ in the arbitrary choice of the elsewhere form.

Among the varieties that exhibit an argument-structure-based split, it is not easy to find pure number restrictions. As we will see in section §6.5, an argument-structure-driven system can be subject to further person restrictions (mixed systems), but it cannot be subject just to number restrictions without any corresponding person restriction. When the valency split is restricted to a specific number, it is also constrained by person. I will talk about these mixed systems in section §6.5. Examples are the dialects of Secinaro, Zagarolo, Agnone, Castelvecchio Subequo (Ledgeway 2019: 368-370). For instance, Secinaro exhibits an argument structure distinction only in the 3rd person singular (B∼H B H in transitives, B∼H B B in unaccusatives), whereas in the plural there is a person split with some alternations that are unrelated to the argument structure.

It is noteworthy that if there is a number restriction, then it depends on the number feature of the subject. The influence of number features works exactly like a TAM restriction, as explained in section §6.3. In fact, the number value of the subject is always represented on T, which has copied a full set of $[\phi]$ features from the transitive external argument or the unaccusative internal argument. The number restriction can be implemented via vocabulary entries that refer to the features on T, once Perf head-moves to T. The lexical entries for Pescocostanzo looks like in (22).

(22)   *Pescocostanzo*

   a.   /$\sqrt{\text{HAVE}}$/ ↔ Perf[π:-part] / T[#:+sg]
   b.   /$\sqrt{\text{BE}}$/ ↔ Perf elsewhere

6.4 Single auxiliary

In some languages, there is just one perfect auxiliary at disposal. Examples where the auxiliary is only HAVE are Spanish, Portuguese, Sicilian, modern Catalan. Other varieties have only BE, although this is quite rare. An example is Terracina (Tuttle 1986), while outside Romance we can mention Southern Slavic languages, Scottish Gaelic, Welsh and Shetland English (McFadden 2007: 676).

It has been proposed that languages with a single auxiliary and languages with person-driven auxiliary selection correspond to the same type of structure, since the choice of the auxiliary is coherent across different verbal classes and is not dependent on the argument structure (Loporcaro 2007). In both cases a single auxiliary pattern (either B or H for the former group; BBH or any other person-driven distribution for the latter set) is generalized across all argument structure types. In this sense, they behave in the same way, in contrast with argument-structure-driven auxiliary selection, where it depends both on the type of verb and on its argument (cf. Sorace's (2000) hierarchy of auxiliary selection).

In disagreement with Loporcaro (2007), I argue that the underlying syntax of languages with a single auxiliary does not have to be the same as for person-driven systems. Two different syntactic structures can lead to the same morpho-syntactic output, which is morpho-phonologically interpreted by different vocabulary entries. Person-based systems arise via the ordering of features on Perf ($[u\pi:\_] \succ [uInfl:perf]$). However, systems with a single auxiliary can emerge under both ordering on Perf (either $[u\pi:\_] \succ [uInfl:perf]$, or $[uInfl:perf] \succ [u\pi:\_]$). The only relevant fact is that a single lexical entry (for example HAVE in the case of Sicilian) is generalized over the other one. It could even be the case that the person-probe on Perf is not present at all in these varieties, which is also a matter of lexical variation in the featural inventory of functional heads. I prefer to keep the syntax unified and to relegate the cross-linguistic variation in the vocabulary entries of lexical items. In what follows, I exploit the ordering of features on Perf.

A language with a single auxiliary can be either a person-based system, or an argument-structure-driven system. In general, a single auxiliary means that the result of Agree is neutralized on the surface. This can be due either to the presence of a single vocabulary entry, or to a morpho-syntactic-context that is always met. In the former scenario, it does not matter whether auxiliary selection depends on the argument structure or on the person feature of the subject. In fact, there is no choice in the lexicon. Here in (23) is, for example, the lexical entry needed for Sicilian.

(23) *Sicilian* (either $[u\pi:\_] \succ [uInfl:perf]$ or $[uInfl:perf] \succ [u\pi:\_]$)
       $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}$

In the latter scenario, a language exhibits a single auxiliary if the conditions of insertion of a specific allomorph are always met, even if the lexicon contains more than one vocabulary entry for the head Perf. A uniform condition for insertion is either lack of Agree on Perf,

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which is obtained for example if Perf does not contain any [uπ] probe, or successful Agree on Perf, which happens in person-driven systems, where Perf always finds the person feature on the subject. Let me explain this point in further details.

If a language has a lexicon with two vocabulary entries for the head Perf, and if the perfect auxiliary is always realized by the same allomorph, then the language must be a person-driven system. In fact, in argument-structure-driven systems valuation via Agree may succeed or not succeed, depending on the type of v and on the features of the arguments. Hence, in these languages the result on Perf may vary not only as far as the value of [π] is concerned, but also with respect of the presence or absence of [π]. In contrast, in person-driven systems Agree for [π] always returns a value, since the probe targets the subject in Spec,v. In this type of languages, the generic context of insertion "presence of a valued person-feature on Perf" is always met, whereas this is not the case for argument-structure-driven systems. In this scenario, the vocabulary entries for Sicilian are as in (24).

(24)   *Sicilian* ([uπ:_] ≻ [uInfl:perf])

      a. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi{:}\alpha]$

      b. $/\sqrt{\text{BE}}/ \leftrightarrow \text{Perf}$

If Sicilian is a language where auxiliary selection is person-driven and the lexical entries are as in (24), the rule (24-a) always applies, with the consequence that the chosen allomorph is always HAVE. Hence, varieties with a single auxiliary can be either person-driven systems, or argument-structure-based systems. The important change is located in the inventory of the vocabulary entries: either the lexicon contains only a single VI (23), or it has an underspecified VI (24-a), whose conditions of insertion are always met (with a lexicon such as (24), a language has a single auxiliary only if it is a person-driven system).

6.5 Mixed systems

There are also languages where the perfect auxiliary follows a person split only for a particular type of argument structure. I call this type of languages *mixed systems*.[8] An example is the variety spoken in Tufillo (Abruzzo), where the person split is found only with transitive/unergative verbs (25-a,b,c), but not with unaccusative verbs (25-d,e,f).

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[8]I take the term "mixed system" from Loporcaro (2007). He uses this notation to refer both to person-driven systems and to systems with free variation. In contrast, I use the term "mixed system" to refer exclusively to argument-structure-driven systems with person restrictions (as will become clear in this section). Note that the varieties discussed in this section are included by Loporcaro in the group of person-driven systems. My position here is very different, since I argue that these languages are not person-driven systems, but rather argument-structure-driven systems.

(25)   *Tufillo*

    a.   Sɔ   par'læːtə.
        be.PRS.1SG talk.PRTC
        'I have talked.'

    b.   Si   par'læːtə.
        be.PRS.2SG talk.PRTC
        'You have talked.'

    c.   ɣa   par'læːtə.
        have.PRS.3SG talk.PRTC
        'S/he has talked.'

    d.   Sɔ   mmə'eutə.
        be.PRS.1SG come.PRTC
        'I have come.'

    e.   Si   mmə'eutə.
        be.PRS.2SG come.PRTC
        'You have come.'

    f.   ɛ   mmə'eutə.
        be.PRS.3SG come.PRTC
        'S/he has come.'   (Manzini and Savoia 2005: II: 690)

	unaccusatives	transitives, unergatives
1st sg	B	B
2nd sg	B	B
3rd sg	B	H
1st pl	B	B
2nd pl	B	B
3rd pl	B	H

Table 6.2: Tufillo (Manzini and Savoia 2005: II: 690-691).

As Table 6.2 summarizes, the person split is visible only for transitive/unergative verbs, whereas for unaccusative verbs the same auxiliary is generalized for all persons. Looking at the data from a different perspective, the argument-structure split is present only for 3rd person, while 1st and 2nd person show the same auxiliary.

There are two different approaches to these data, and to mixed systems in general. Auxiliary selection is either person-driven, but restricted to a particular argument structure, or it is argument-structure-driven, but the distinction is only possible for a particular feature and it is neutralized for others.[9]

I propose that auxiliary selection in mixed systems is argument-structure-based and not person-driven, although it is further constrained by the features of the subject as they appear on the syntactic head T. Whenever there is a dependency on argument structure,

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[9]Data of this type go against the conclusion that auxiliary selection in Southern Italy is not influenced by argument structure, proposed for instance by Giammarco (1973: 162-163), and Cocchi (1995: 119). This wrong description of the data has already been criticized by Loporcaro (2001: 459), although he considers such varieties as person-driven systems (Loporcaro 2007).

even if it is confined to some cells of the paradigms (or even to a single cell), auxiliary selection must be dependent on the argument structure. This means that the features on Perf must be ordered as follows: Perf [uInfl:perf] ≻ [uπ:__].

In general, the head Perf moves to T in order to combine with finite inflection, thereby forming the complex head Perf + T. The head T bears a probe for ϕ-features, which causes subject agreement on the finite verb (as in English *she run-s*). When the argument-structure-based split is limited to some cells, the vocabulary entries in the lexicon make reference to the person specification of the subject that is present on T after ϕ-Agree.

I now present the analysis for the Tufillo data. If auxiliary selection is argument-structure-driven (as in Standard Italian), the complex heads Perf + T are in (26).

(26)   Complex head Perf + T in argument-structure-based auxiliary selection

(i)   Unaccusative, reflexive   (ii)   Transitive, unergative

As explained for Standard Italian in chapter 3, in argument-structure-based systems the probe on Perf remains unvalued in unaccusative and reflexive clauses (cf. sections §3.3.4, 3.3.2, respectively). In the former, this happens because unaccusative v is not a probe for person, in the latter because transitive v has undergone Agree with an item with unvalued ϕ-features (the reflexive pronoun). The head T contains a [uϕ:__] probe that targets the DP_{sbj} in Spec,v, invariably leading to subject agreement. Hence, in unaccusative and reflexive clauses the features on the complex head T + Perf are as in (26)-(i).

In transitive and unergative clauses, Perf has successfully agreed with v (which had agreed with the object), while T has agreed with the subject. Consequently, the features on the complex head T + Perf is are in (26)-(ii) (where the symbols α and β indicate that the features can be different).

Given the syntactic structures in (26), the following Vocabulary Items are needed in order to derive the Tufillo data in (25).

(27)   *Tufillo*

  a.   /√HAVE/ ↔ Perf[π:α] / T[ϕ:3sg]
  b.   /√BE/ ↔ Perf elsewhere

The vocabulary entries in (27) are typical of argument-structure-driven systems (the person feature on Perf is not specified for any particular value), but refer to a specific person feature on another subpart of the complex head, namely T. This type of lexicon, together with the feature ordering [uInfl:perf] ≻ [uπ:__] on Perf (argument-structure-driven auxiliary

selection), gives rise to mixed systems.[10]

Further evidence for the treatment of these mixed systems as argument-structure-driven systems rather than person-driven systems comes from the behavior of reflexive clauses, as I have already anticipated in the discussion around (26)-(i). In person-driven systems, the auxiliary of a transitive verb that selects a reflexive object is the same as for a transitive verb (cf. for instance Ariellese, examples (6) and (7)). In argument-structure-driven systems, the auxiliary of a reflexive clause is not the same as the one of a transitive clause (cf. example **??** for Italian). In mixed systems, transitive verbs with reflexive objects pattern as unaccusatives, differently from what happens in person-driven systems. For instance, in the variety of Tufillo the auxiliary of transitive reflexive verbs is the same as for unaccusative verbs.

(28)   *Tufillo*

    a.   Mə   sɔ   arraˈvæːtə.
         REFL.ACC.1SG be.PRS.1SG wash.PRTC.SG
         'I have washed myself'

    b.   Tə   si   arraˈvæːtə.
         REFL.ACC.2SG be.PRS.2SG wash.PRTC.SG

    c.   Ts   ɛ   arraˈvæːtə.
         REFL.ACC.3SG be.PRS.3SG wash.PRTC.SG

    d.   Tʧə   səmə   arraˈviːtə.
         REFL.ACC.1PL be.PRS.1PL wash.PRTC.PL

    e.   Və   sɛːtə   arraˈviːtə.
         REFL.ACC.2PL be.PRS.2PL wash.PRTC.PL

    f.   Ts   ɛ   arraˈviːtə.
         REFL.ACC.3PL be.PRS.3PL wash.PRTC.PL

(Manzini and Savoia 2005: II: 690)

The data in (28) can be accounted for if auxiliary selection is argument-structure-driven, meaning that the order of the features on Perf is [uInfl] $\succ$ [uπ:_], as in Standard Italian. Recall that, because of the Strict Cycle Condition, transitive v probes for person before it

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[10]In this dissertation, I model mixed systems as argument-structure-driven varieties. Nonetheless, I think that it is also possible to model them as person-driven systems (Perf [uπ:_] $\succ$ [uInfl:perf]). If this is the case, one auxiliary must be generalized for a type of argument structure, by making reference to the features on v. This means that the lexical entries should depend on the features of the c-commanded v. In order to derive the Tufillo data in Table 6.2, the following VIs are needed.

(i)   a. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi{:}3] \,/\, v[\pi{:}\alpha]$
       b. $/\sqrt{\text{BE}}/ \leftrightarrow \text{Perf elsewhere}$

This is possible only if vocabulary insertion in v does not delete the morpho-syntactic features of v. In this way, the morpho-syntactic features on v are still available when the terminal node Perf is substituted by the relevant allomorph.

I prefer to consider these varieties as argument-structure-driven because (i) it seems to me conceptually more correct (since there is indeed a split based on argument structure), (ii) I already make use of contextually sensitive vocabulary entries also for restrictions based on aspect or on person within both types of systems, and (iii) the implementation is easier to model in a local fashion.

introduces the external argument. Assuming that reflexive pronouns enter the derivation with unvalued ϕ-features, they receive their ϕ-features via binding by the external argument. When the π-probe on v undergoes Agree, the reflexive object still bears unvalued ϕ-features. Consequently, the person π-probe on v remains unvalued, and the same happens for the π-probe on Perf, too. Agree on Perf fails, as is the case for unaccusative verbs, and differently from canonical transitives (cf. tree (26)). Given the lexical entries in (27), BE must be inserted.

The distribution of auxiliaries in mixed systems can be quite complex. Other examples are the dialects of Lanciano, Scanno, and Pietransieri (Abruzzo) (Giammarco 1973; Loporcaro 2001). I provide in Table 6.3 the data for Pietransieri.

	unaccusatives	transitives, unergatives
1st sg	B	B
2nd sg	B	B
3rd sg	B	H
1st pl	B~H	H
2nd pl	B~H	H
3rd pl	B~H	H

Table 6.3: Pietransieri (Loporcaro 2007: 198).

Again, the distribution of auxiliaries depends on the argument structure: transitive/unergative verbs pattern differently from unaccusative verbs. Moreover, both classes exhibit a dependency on the person and number features of the subject. The vocabulary entries that can explain the data of Pietransieri are listed in (29).

(29) *Pietransieri*

    a. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi{:}\alpha]$ / T[#:pl]

    b. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi{:}\alpha]$ / T[π:3]

    c. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}$ / T[#:pl]   (optional rule)

    d. $/\sqrt{\text{BE}}/ \leftrightarrow \text{Perf}$ elsewhere

The more specific allomorph HAVE is inserted when Perf has successfully agreed (i.e., with transitive and unergative v) and when the subject is either 3rd person or it is plural. In addition, it can optionally be used when the subject is plural, independently of the person feature on Perf. Note that the rule (29-c), which constitutes a generalization of rule (29-a), must be optional, in order to give rise to free alternation in unaccusative clauses with plural subject. Moreover, it is blocked in transitive clauses by the obligatory rule (29-a), which is more specific.

A similar distribution of auxiliary is found in Secinaro, as we have already seen in section §6.3.1. Here auxiliary selection systematically depends on the features of the subject, but the pattern is different for unaccusative/reflexive verbs and for transitive/unergative verbs.

	unaccusatives	transitives, unergatives
1st sg	B∼H	B∼H
2nd sg	B	B
3rd sg	B	H
1st pl	B∼H	B∼H
2nd pl	B∼H	B∼H
3rd pl	B	H

Table 6.4: Secinaro (Manzini and Savoia 2005: II: 691-692).

The lexical entries needed for Secinaro are in (30).

(30)　　*Secinaro*

　　　　a.

　　　　b.　/$\sqrt{\text{HAVE}}$/ ↔ Perf[π:α] / T[π:3]

　　　　c.　/$\sqrt{\text{HAVE}}$/ ↔ Perf / T[π:1]　　　　　　　　　(optional rule)

　　　　d.　/$\sqrt{\text{HAVE}}$/ ↔ Perf / T[φ:2pl]　　　　　　　(optional rule)

　　　　e.　/$\sqrt{\text{BE}}$/ ↔ Perf elsewhere

As already seen also for the dialect spoken in Pietransieri, in many mixed systems there is optionality with respect to the choice of the auxiliary in some areas of the paradigm. Further research is needed to investigate whether these are cases of free variation or if the alternation is determined by some specific factors. In this dissertation, I model free variation with the presence of optional rules in the lexicon. With optional rule, I mean that speakers have at disposal more than one single grammar at a time, so that they can generate different output depending on which grammar is used. Note that optionality affects the more complex rules that make reference to the features on T, which must be considered somehow less rooted in the grammar.[11]

Let me highlight that dialects of the mixed type provide evidence against those analyses that treat local person split as person ergativity split, as proposed by Kayne (1993); Manzini and Savoia (1998); D'Alessandro and Roberts (2010); Coon and Preminger (2012) (cf. also Loporcaro (2007) for discussion). In ergative languages, such as Dyrbal, there is an alternation between the ergative/absolutive case system and the nominative/accusative case system that distinguishes 1st and 2nd person pronouns from 3rd person pronouns and other nominal DPs (DeLancey 1981). Similarly, it has been argued that the auxiliary distribution BBH/HHB (such as in Ariellese) could also be due to a split ergativity pattern.

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[11]As I will discuss in section §6.8, free variation in person-driven systems is due to the presence of other types of rules. In person-driven systems, the information on T is, in general, redundant and plays a role only when the lexicon of a language contains vocabulary entries that spell out the same feature on Perf and on T in different ways, as in (i-a,b), leading to free variation.

(i)　　a.　/$\sqrt{\text{HAVE}}$/ ↔ Perf[π:3]
　　　　b.　/$\sqrt{\text{BE}}$/ ↔ Perf / T[π:3]

However, if this were the case, then it should be visible across all verb types. Instead, mixed varieties exhibit the split only for some verbal classes. Hence, it is not plausible that the person split BBH found in the singular of transitive verbs in Tufillo and Pietransieri is due to a person ergativity split, whereas the auxiliary for unaccusative and reflexive clauses does not follow the ergativity split. Mixed systems would simultaneously reflect both an active/inactive alignment and an absolutive/ergative split. Moreover, if mixed systems such as Tufillo and Pietransieri do not emerge for an ergativity alignment, then it is also very unlikely that a person ergativity split could be active in the closely related variety of Ariellese. In fact, languages with mixed systems and person-driven systems of auxiliary selection are very closely related, both genetically and spatially. Hence, the hypothesis of a person ergativity split only for person-driven systems but not for mixed systems is not very plausible (especially for those analyses that consider mixed systems as person-driven systems).

To sum up, I propose that auxiliary selection in mixed systems is argument-structure-based and not person-driven, although it is further constrained by the features of the subject as they appear on T.

6.5.1 The Sardinian type

I said that in mixed systems reflexive clauses behave as unaccusative clauses, as it happens for instance in Italian. To be more precise, the pattern seems not to be exactly as in Standard Italian, but rather as in Sardinian (Loporcaro 2007). In Sardinian, auxiliary selection is argument-structure-driven. In this language, not all reflexive clauses pattern as unaccusative clauses (as in Italian), but there is a split within reflexives. Indirect transitive reflexives (i.e., transitive clauses with a reflexive dative) trigger the same auxiliary as for transitive verbs, whereas the other reflexives cause the same auxiliary as for unaccusative verbs (Loporcaro 2007: 190-191). I provide here the Sardinian data, although I will deal with reflexives in section §6.6 (cf. Table 6.7).[12]

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[12]As I will discuss in section §6.6, in Sardinian there is a difference in the status of the dative reflexive pronoun, which is mirrored by the choice of the auxiliary. In indirect unergative reflexive clauses (31-c), the dative is a complement of the verb, i.e. an indirect object, presumably merged in the VP. Hence, the clause behaves similarly to a direct transitive reflexive clause, where the reflexive pronoun is the sole direct object. The unergative verbs that allow for this construction are also inherently reflexives or alternate between a transitive use with a dative PP argument and an "inherent" use with the reflexive dative argument (for instance, *rispondere a qualcuno / risponder=si* 'to answer to somebody / to answer oneself'). In indirect transitive clauses (31-d), the dative reflexive pronoun is a benefactive argument, introduced by a higher applicative head. Hence, the sentence behaves as a transitive clause. The reader may also wonder if the selection of HAVE in (31-d) is related to the inalienable possession construction, but this is not the case. Whenever there is an overt transitive object and a reflexive dative (benefactive as in (i-a) or reciprocal as in (i-b)), the auxiliary is HAVE.

(i)   a.   Juanne s=at   fraicatu   una bella   domo.
                John   REFL.DAT.3SG.M=have.PRS.3SG build.PRTC a   beautiful house
                'John has built himself a beautiful house.'
        b.   Maria e   Lukia s=an   mandatu paritzas lítteras.
                Maria and Lucia REFL.DAT.3PL=have.PRS.3PL send.PRTC several   letters
                'Maria and Lucia have sent each other several letters.'   (Jones 1993: 131)

(31)   *Sardinian*

    a.   Maria ɛs   palti:ð-a.
         Maria be.PRS.3SG leave.PRTC-SG.F
         'Maria has left.'   (unaccusative)

    b.   Maria z=ɛs   samuna:ð-a.
         Maria REFL.ACC.3SG.F=be.PRS.3SG wash.PRTC-SG.F
         'Maria has washed herself.'   (direct transitive reflexive)

    c.   Maria z=ɛr   rispɔst-a.
         Maria REFL.DAT.3SG.F=be.PRS.3SG answer.PRTC-SG.F
         'Maria has answered herself.'   (indirect unergative reflexive)

    d.   Maria z=a   ssamuna:ðu zal ma:nɔs.
         Maria REFL.DAT.3SG.F=have.PRS.3SG wash.PRTC the hands
         'Maria has washed her hands.'   (indirect transitive reflexive)

    e.   Maria a   mmaniɣaðu (za minɛstra).
         Maria have.PRS.3SG eat.PRTC   the soup
         'Maria has eaten (the soup).'   (transitive)

                                           (Loporcaro 2007: 190-191)

In mixed systems, such as Pietransieri, the same auxiliary is found for unaccusative verbs, for direct transitive reflexives and for indirect unergative reflexives. Instead, indirect transitive reflexives trigger the same auxiliaries as transitive and unergative verbs. This is represented in Table 6.5, where the symbol x stands for B B H H H H, and y for B B B B∼H B∼H B∼H

	unaccus.	dir. trans. refl.	indir. unerg. refl.	indir. trans. refl.	trans., unerg.
Italian	B	B	B	B	H
Sardinian	B	B	B	H	H
Pietransieri	x	x	x	y	y

Table 6.5: Mixed systems as "Sardinian" types.

Another example of mixed system that follows the Sardinian split is the dialect of Altamura. Here we have free variation at 1st and 2nd person, whereas at 3rd person there is alternation depending on the class (unaccusative B, transitive B∼H). Reflexives patterns as in Sardinian, as shown in Table 6.6.

The lexical entries needed for Altamura are in (32). Two elsewhere forms (32-a,b) are in competition and give rise to free variation. This is however blocked by the more specific rules for 3rd person singular in unaccusatives and reflexives (32-c), and for 3rd person plural in transitive verbs (32-d).

The present analysis implies that there is a difference in interpretation between the benefactive dative in Sardinian (introduced by a higher applicative) and in Standard Italian (introduced by a lower applicative). The hierarchy of functional heads is illustrated in (ii) (adapting Pylkkänen 2008; Nie 2020).

(ii)   [_HighApplP_ HighAppl [_vP_ v [_LowApplP_ LowAppl [_VP_ V]]]]

Further research is needed to verify this hypothesis.

unaccus.	dir. trans. refl.	indir. unerg. refl.	indir. trans. refl.	trans., unerg.
B∼H	B∼H	B∼H	B∼H	B∼H
B∼H	B∼H	B∼H	B∼H	B∼H
B	B	B	B∼H	B∼H
B∼H	B∼H	B∼H	B∼H	B∼H
B∼H	B∼H	B∼H	B∼H	B∼H
B∼H	B∼H	B∼H	$^{\%}$B∼H	H

Table 6.6: Altamura (Loporcaro 2007: 203-204).

(32) a. /$\sqrt{\text{HAVE}}$/ ↔ Perf

  b. /$\sqrt{\text{BE}}$/ ↔ Perf

  c. /$\sqrt{\text{BE}}$/ ↔ Perf[π:__] / T[φ:3sg]

  d. /$\sqrt{\text{HAVE}}$/ ↔ Perf[π:α] / T[φ:3pl]

Hence, it seems that there are just two major classes of systems with person specifications: either pure person-based systems, or argument-structure-based systems where the features of the subject do count (mixed systems). In person-driven system of the first type, such as Ariellese (i.e., not influenced by the argument structure), it should be impossible to have a split distribution according to the type of reflexive clause. As far as I know, this prediction is borne out. In argument-structure-based systems with person restrictions, such as Tufillo, the reflexive class always exhibits the same cutting point between two types of auxiliation. Unaccusatives, direct transitive reflexives and indirect unergative reflexives ask for the same auxiliary, whereas indirect transitive reflexives, transitive and unergative verbs pattern together. In the systems where auxiliary selection is dependent on argument structure and is not influenced by the person feature of the subject (Standard Italian, Sardinian), reflexives may pattern in different ways (cf. Table 6.5 in section §6.5.1, and 6.7 and 6.9 in section §6.6).

The fact that mixed systems are always of the Sardinian type, as highlighted by Loporcaro (2007), may be surprising. In this dissertation, I cannot provide new data against, or in favor of, this generalization. I also do not have a good explanation for why the cutting point within the reflexives should always be located between the indirect transitive reflexives and the other reflexives. The fact that indirect transitive reflexives pattern as transitives must be due to the syntactic structure: the reflexive must be introduced higher in the structure, thereby lying outside the domain of the person probe on *v*. I will be more specific about this issue in section §6.6.1. However, more research is needed to solve this issue.

What is important for the present discussion is the fact that in mixed systems unaccusative and (some) reflexive clauses exhibit the same perfect auxiliary (the pattern being either of the Italian type or of the Sardinian type). This constitutes evidence for treating auxiliary selection in these languages as argument-structure-driven. If in mixed systems the features of the object play a role for auxiliary selection (i.e., similarly to Italian, differently to Ariellese), we expect reflexives to pattern differently from transitives,

as is the case.

6.6 Reflexive clauses in argument-structure-driven auxiliary selection

An advantage of treating argument-structure-based splits as the result of Agree for person is the possibility to model the distribution of the two auxiliaries in reflexives clauses. It is exactly the area of reflexive clauses that exhibits much cross-linguistic variation for auxiliary selection when a language has an argument-structure-based split (cf. section §6.6.1). Moreover, if there is optional free variation within a language (B, H or B∼H), this is restricted to the area of reflexive clauses (cf. section §6.6.2) (Loporcaro 2007, 2016).

I think this is expected under the proposal developed in this dissertation. In argument-structure-based systems, the auxiliary not only depends on the type of v, but also on the features of the object as they appear on v after Agree. In particular, there can be different dimensions of variation, both within a language and across languages. Firstly, it could be that reflexive pronouns are merged in different positions (for instance, inside a big VP in a double object construction, or introduced by different applicative heads at different level of attachment, and so on). Secondly, they could be more or less heavy as far as the syntactic layers are concerned (KP vs. DP/D). Thirdly, they could acquire the features via binding at different stages of the derivation. Fourthly, they could enter the syntactic structure with already valued features (recall that binding is the establishment of a co-referentiality relation, and valuation is only a consequence of binding, cf. section §3.2.4.1 in chapter3).

These factors have an effect on Agree on v (and, consequently, on Perf): either the reflexive pronoun is a valued matching goal or it is not as such. The unavailability of the reflexive pronoun for successful valuation via Agree is due to different factors. Either the matching feature on the reflexive pronoun is not a reachable goal because of its position outside the domain of the probe, or the matching feature is not visible because of the presence of further structure, or the matching feature is not valued, as we saw for Italian (cf. section §3.3.2 in chapter 3). I cannot enter now into details about these different possibilities, which deserve a wider investigation for every language. The crucial point is that languages can differ with respect to one or more of these factors, when they treat reflexive clauses in different ways. In addition, languages that show optionality of auxiliaries with reflexive pronouns may have different strategies at disposal within the same grammar.

6.6.1 Cross-linguistic variation

The types of reflexive clauses under consideration are direct transitive reflexive, indirect unergative reflexive, indirect transitive reflexive (Loporcaro 2007: 187). These are exemplified in (33) for Standard Italian and similar examples have been shown for Sardinian in (31) in section §6.5.1.

(33) a. Maria è   partit-a.
         Maria be.PRS.3SG leave.PRTC-SG.F
         'Maria has left.'   (unaccusative)

      b. Maria si=è   lavat-a.
         Maria REFL.ACC.3SG.F=be.PRS.3SG wash.PRTC-SG.F
         'Maria has washed herself.'   (direct transitive reflexive)

      c. Maria si=è   rispost-a.
         Maria REFL.DAT.3SG.F=be.PRS.3SG answer.PRTC-SG.F
         'Maria has answered herself.'   (indirect unergative reflexive)

      d. Maria si=è   lavat-a   le mani.
         Maria REFL.DAT.3SG.F=be.PRS.3SG wash.PRTC-SG.F the hands
         'Maria has washed her hands.'   (indirect transitive reflexive)

      e. Maria ha   mangiato (la minestra).
         Maria have.PRS.3SG eat.PRTC the soup
         'Maria has eaten (the soup).'   (transitive)

In this section, I adopt the categorization of reflexives used by Loporcaro (2007) (within the framework of Relational Grammar), shown on the right of the examples in (33). In Minimalism, and under the present assumptions, the relevant structures of the clauses in (33) are as follows.[13]
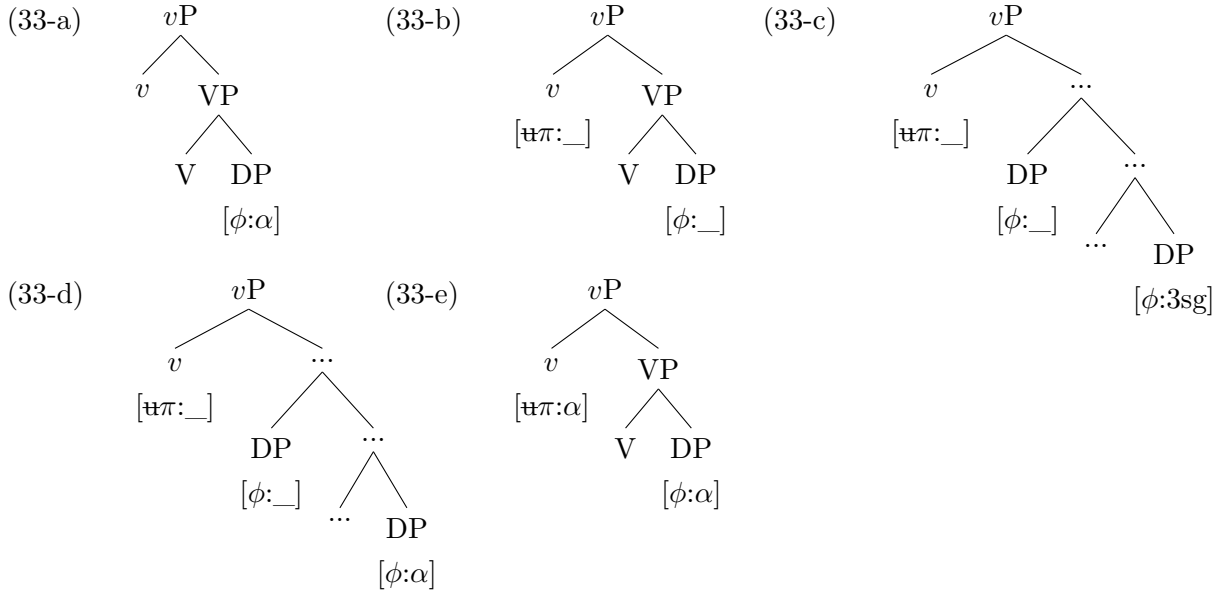
As the examples in (33) show, in Standard Italian the perfect auxiliary for all reflexive clauses is BE. Instead, in Sardinian the perfect auxiliary of indirect transitive reflexive clauses is the same as in transitive clauses (cf. (31-d)). Here below I repeat the two relevant examples.

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[13]The following discussion about the different realizations of the perfect auxiliary in reflexive clauses is based on the assumption that the reflexive clitic bears unvalued ϕ-features when v probes, as is the case in Standard Italian. This leads to the feature [$u\pi$:__] on v_{trans}, as shown in trees (33-b), (33-c) and (33-d). Instead, if one admits that the reflexive pronoun can enter the derivation with valued features, then the structure is not relevant anymore and the auxiliary is always the same as with transitive verbs (because in this case the reflexive pronoun behaves as a canonical transitive object).

(34) a. Maria si=è   lavat-a   le   mani.
          Maria REFL.DAT.3SG.F=be.PRS.3SG wash.PRTC-SG.F the hands
          'Maria has washed her hands.'   (Standard Italian)

      b. Maria z=a   ssamuna:ðu zal ma:nɔs.
          Maria REFL.DAT.3SG.F=have.PRS.3SG wash.PRTC   the hands
          'Maria has washed her hands.'   (Logudorese Sardinian)

For argument-structure-driven systems, many distinct distributions of auxiliaries within the reflexive class are possible. Table 6.7 shows the different cutting points for the distribution of BE and HAVE between unaccusative and transitive verbs.

		unaccus. =(33-a)	dir. trans. refl. =(33-b)	indir. unerg. refl. =(33-c)	indir. trans. refl. =(33-d)	trans., unerg. =(33-e)
(a)	Italian	**B**	**B**	**B**	**B**	H
(b)	Sardinian	**B**	**B**	**B**	H	H
(c)	Picernese	**B**	**B**	H	H	H
(d)	Engadinian	**B**	H	H	H	H
(e)	*variety x	H	**B**	H	**B**	H
(f)	*variety y	**B**	**B**	**B**	H	**B**
(g)	*variety z	**B**	H	**B**	H	H

Table 6.7: Split in auxiliary selection (data from Loporcaro 2007: 189,193, Loporcaro 2016: 814).

If the reflexives are ordered as in Table 6.7, it is not possible to have non-continuous patterns of auxiliary selection. The distribution of the auxiliaries pattern accordingly to a cline that determines the cross-linguistic and intra-linguistic variation (Loporcaro 2007: 193). Moreover, Table 6.7 also illustrates that some patterns of auxiliary selection are impossible. In particular, the cutting point between the two auxiliaries within the category of reflexives can be as in the rows (a), (b), (c), (d), but not as in rows (e), (f), (g).

The difference in auxiliary selection represented in Table 6.7 is accounted for by this dissertation. In Minimalism, different argument structures involve different feature specifications: a full argument structure v is featurally different from defective v (Chomsky 2001). Hence, it is expected that the opposite poles of the cline (unaccusative and transitive verbs) may exhibit different auxiliaries. The features of the reflexive argument plays a role with a full argument structure v, which is exactly the type of v involved in reflexive clauses (transitive or unergative). Hence, variation within the transitive/unergative argument structure (whose v bears a person probe) is expected if auxiliary selection is due to Agree for person.

When the lexicon of a language has two vocabulary entries for the perfect head, the two opposite poles of the scale in Table 6.7 are distinguished by the two auxiliaries, as in row (a), (b), (c) and (d). The cutting point across the class of reflexives is language specific. However, it is impossible to find HAVE (or BE) both with unaccusatives and transitives, and BE (or HAVE) with reflexives, as shown by the impossibility of varieties x and y in Table 6.7. This fact is predicted by my analysis: if unaccusative verbs pattern as transitives, then also reflexives must pattern in the same way. In fact, after Agree a transitive v bears

a probe of the form [$u\pi{:}\alpha$]. In contrast, unaccusative v is characterized by the absence of a π-probe. When a transitive/unergative verb takes a reflexive pronoun as its argument, the result of Agree on v can be either [$u\pi{:}\alpha$], if the reflexive pronouns bear valued features, or [$u\pi{:}\_$], if it bears unvalued features. As far as auxiliary selection is concerned, in the former case reflexive clauses pattern with canonical transitive clauses, while in the latter they behave as unaccusative clauses. Agree on v with reflexives may result either in successful valuation or in the lack of valuation, and this variation is language-specific.

In a language where transitive and unaccusative verbs have the same auxiliary, it is the case that v_{unacc} is equal to $v_{\text{trans}}[u\pi{:}\alpha]$. In fact, in transitive clauses v_{trans} bears [$u\pi{:}\alpha$], determining [$u\pi{:}\alpha$] on Perf as well, while in unaccusative clauses v_{unacc} does not bear any person probe, determining [$u\pi{:}\_$] on Perf. If in these different contexts the perfect auxiliary is realized in the same way, it means that both morpho-syntactic environments map to a vocabulary entry that is insensitive to the presence or absence of a person feature on Perf. Then, also $v_{\text{trans}}[u\pi{:}\_]$ must map to the same vocabulary entry, since this is not sensitive to the person feature. In other words, $v_{\text{trans}}[u\pi{:}\_]$ counts as the other two instances of v: $v=v[\pi{:}\_]=v[\pi{:}\alpha]$. Therefore, reflexive verbs must have the same auxiliary as unaccusative and transitive verbs.

On the basis of this discussion, we can predict the impossibility of varieties x and y. These languages show the same auxiliary for the two extremities of the scale (unaccusative and transitive), but a different one for reflexive clauses. For varieties x and y, $v_{\text{trans}}[u\pi{:}\alpha]$ must count as v_{unacc} for the purpose of vocabulary insertion. This means that the lexical entry for Perf is not sensitive to the presence or absence of a person feature. Since v_{trans} in reflexive clauses bears either [$u\pi{:}\alpha$] or [$u\pi{:}\_$] (and no other options are possible), it must also lead to the insertion of the same allomorph as $v_{\text{trans}}[u\pi{:}\alpha]$ and v_{unacc} do. Hence, varieties x and y are impossible.

Given these premises, the present analysis can exclude the impossible varieties in Table 6.7. Let us look at the possible structures of reflexive clauses in (35), (36), and (37).

(35)   Direct transitive reflexive (33-b)

structure: $[_{vP}\ v_{\text{trans}}[u\pi{:}\_]\ [_{VP}\ V\ DP_{\text{refl}}\ ]\ ]$
auxiliary: if $DP_{\text{refl}}[\pi{:}\_]$, then BE; if $DP_{\text{refl}}[\pi{:}\alpha]$, then HAVE.

(36)   Indirect unergative reflexive (33-c)

a.   structure: $[_{vP}\ v_{\text{trans}}[u\pi{:}\_]\ [_{VP}\ DP_{\text{refl}}\ V\ DP_{\text{covert}}\ ]\ ]$
auxiliary: if $DP_{\text{refl}}[\pi{:}\_]$, then BE; if $DP_{\text{refl}}[\pi{:}\alpha]$, then HAVE.

b.   structure: $[_{vP}\ v_{\text{trans}}[u\pi{:}\_]\ [_{\text{ApplP}}\ DP_{\text{refl}}\ \text{Appl}\ [_{VP}\ V\ DP_{\text{covert}}\ ]\ ]\ ]$
auxiliary: if $DP_{\text{refl}}[\pi{:}\_]$, then BE; if $DP_{\text{refl}}[\pi{:}\alpha]$, then HAVE.

c.   structure: $[_{\text{ApplP}}\ DP_{\text{refl}}\ \text{Appl}\ [_{vP}\ v_{\text{trans}}[u\pi{:}\_]\ [_{VP}\ V\ DP_{\text{covert}}\ ]\ ]\ ]$
auxiliary: HAVE.

(37)   Indirect transitive reflexive (33-d)

        Same possibilities as in (36) (difference: DP$_{obj}$ is not covert).

Direct transitive reflexives (35) are reflexive clauses where the reflexive pronoun is merged in the internal argument position. There are two possibilities. If the clitic has an unvalued person feature, as in Italian, the verb patterns as an unaccusative verb and BE is inserted (Perf[ʉπ:_]). Instead, if it bears a valued feature, then the verb behaves as a canonical transitive verb and the auxiliary is HAVE (Perf[ʉπ:α]). This is what happens in Engadinian (row (d) in Table 6.7).

Indirect unergative reflexives (36) have a covert cognate object. The reflexive dative argument is either introduced in the VP as an indirect object (option (a) in (36)), or by an Applicative head, either lower or higher than v (option (b) and (c) in (36)). If the reflexive is in a position lower than v, then the verb must behave as in (35). In fact, recall that an unvalued person feature on a reflexive DP stops the probe from going on searching (leading to a subcase of defective intervention). If it is higher than v, then the clause patterns as a transitive one and the auxiliary is HAVE, since v successfully probes the covert object that bears ϕ-features valued as default.

The same can be said for indirect transitive reflexive clauses (37), where the object is instead overt and can bear different ϕ-features.

This analysis seems to predict that indirect unergative reflexive clauses and indirect transitive reflexive clauses always pattern together, since the only difference is the phonological status of the direct object. However, we saw that in Sardinian the two types of clauses contain different perfect auxiliaries (row (b) in Table 6.7, cf. also examples (31) and examples in footnote 12). How is this possible? I think that a difference in the perfect auxiliary hints at a different syntactic structure. In Sardinian, indirect unergative reflexive clauses and indirect transitive reflexive clauses could correspond to different syntactic structures: the former to (36-a), the latter to (36-c). In particular, indirect unergative clauses are double object constructions with a reflexive indirect object, where both objects are part of the same VP: [$_{VP}$ IO$_{refl}$ V DO]. The dative is an argument of the verb in the VP-internal indirect object position.[14] Instead, in indirect transitive clauses the dative

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[14]With indirect unergative reflexive clauses, the auxiliary is BE both in Sardinian and in Italian (cf. (31-c), (33-c)). I have just said that these clauses are constructed with a complex VP in Sardinian, with an applicative head in Italian. Another possibility is that in both languages these sentences are not built with an applicative head, but rather only with a quirky v that assigns dative case, under the assumption that the covert object does not need case. In the original formulation of the *Case filter*, due to Vergnaud (1976) (Vergnaud 2006) and developed by Chomsky (1980), only lexically realized NP must be assigned abstract case. This means that case is a requirement only of overt NPs. If the unergative object does not require case (because it is a covert cognate object, or for other characteristics related to its argumenthood), then a single case on v suffices to value the case feature of the other argument (the reflexive indirect object). Instead, if the second object is overt, and thus needs case, another functional head is needed. This explains why indirect unergative reflexive clauses (36) and indirect transitive reflexive clauses (37) may correspond to different structure and may determine different perfect auxiliaries. This also clarifies why the switched variant of Sardinian B B H B H is excluded. In fact, direct transitive reflexives and indirect unergative reflexives can pattern in the same way, as I have just explained for Italian and Sardinian, or the latter can be more complex since it has two arguments, as in Picernese. However, if indirect unergative reflexives

argument must be introduced higher in the structure by an Applicative head: [$_{\text{ApplP}}$ IO$_{\text{refl}}$ Appl [$_{v\text{P}}$ v_{trans}[uπ:__] [$_{\text{VP}}$ V DO]]]. Here, the dative has a benefactive function that is given by the presence of an Applicative head. This means that the reflexive dative arguments have different functions in the two types of clauses (31-c) and (31-d).

Under this proposal, the benefactive argument in indirect transitive clauses is introduced by a high ApplP in Sardinian, and by a low ApplP in Standard Italian (cf. clauses (31-d), (33-d)). Hence, I predict that the dative is interpreted differently in the two languages. This hypothesis is confirmed by participle agreement. If the inflection on the participle is related to edge features as in Standard Italian, it should be realized when the reflexive pronoun is merged below v, but not when it is base-merged in a position higher than v. As example (31) shows, the reflexive pronoun controls participle agreement in direct transitive reflexive clauses (31-b) and indirect unergative reflexive clauses (31-c), but it does not in indirect transitive reflexive clauses (31-d). I repeat here in (38) the relevant examples.

(38)   *Sardinian*

    a.   Maria z=ɛs   samuna:ð-a.
          Maria REFL.ACC.3SG.F=be.PRS.3SG wash.PRTC-SG.F
          'Maria has washed herself.'   (direct transitive reflexive)

    b.   Maria z=ɛr   rispɔst-a.
          Maria REFL.DAT.3SG.F=be.PRS.3SG answer.PRTC-SG.F
          'Maria has answered herself.'   (indirect unergative reflexive)

    c.   Maria z=a   ssamuna:ðu zal ma:nɔs.
          Maria REFL.DAT.3SG.F=have.PRS.3SG wash.PRTC the hands
          'Maria has washed her hands.'   (indirect transitive reflexive)

Participle agreement constitutes some evidence in favor of a higher position of the reflexive pronoun in indirect transitive reflexive clauses. However, I could not find any clear difference in the Sardinian and Italian datives. The only context where there seems to be a difference is with verbs such as *tenere* 'to hold'. In Italian, the clauses with benefactive dative or without it are equivalent (39-a,b). In Logudorese, the verb in the clause with the reflexive dative means 'to wear' (39-c), the verb without it 'to hold' (39-d).

(39)   a.   Mario ha   tenuto   il berretto.
               Mario have.PRS.3SG hold.PRTC the cap

        b.   Mario si=è   tenuto   il berretto.
               Mario REFL.DAT.3SG=be.PRS.3SG hold.PRTC the cap
            'Mario kept the cap (either wearing it or holding it in his hands).'

        c.   Mario s=at   muntesu sa zizia.
               Mario REFL.DAT.3SG=have.PRS.3SG hold.PRTC the cap
            'Mario kept wearing the cap.'

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behave differently, then also the version with two overt arguments (indirect transitive reflexives) must behave in the same way (leading to Picernese B B H H H, and excluding "inverted-Sardinian" B B H B H). I thank F. Heck for this discussion.

    d.   Mario at   muntesu sa zizia.

         Mario have.PRS.3SG hold.PRTC the cap

         'Mario kept the cap in his hands.'   (L. Molinu, p.c.)

Further work needs to establish whether the reflexive dative pronouns in Standard Italian and in Logudorese Sardinian occupy different syntactic positions.[15] If this turns out not to be the case, an alternative analysis could be the following. In Italian, the head Appl assigns accusative case and is selected by a quirky v (cf. analysis in section §3.3.7 of chapter 3). In contrast, the Sardinian Appl head does not assign accusative but rather dative case, and it is selected by transitive v that assigns accusative. This would generate the pattern of auxiliary selection that we see in the data. In Italian, represented in tree (40), quirky v assigns dative to the reflexive pronoun in Spec,v. Successively, it probes it for person, leading to BE insertion because of agreement with the ϕ-defective reflexive dative pronoun. In Sardinian, illustrated in tree (41), the Appl head assigns dative to the reflexive pronoun in its specifier, leaving the DO with unvalued case. Then, transitive v assigns accusative to the DO across the reflexive IO (assuming that there is no defective intervention for case). Given Nested Agree, v agrees for person with the DO, thereby skipping the reflexive IO, leading to HAVE insertion because of agreement with the direct object.

(40)   Italian   (41)   Sardinian
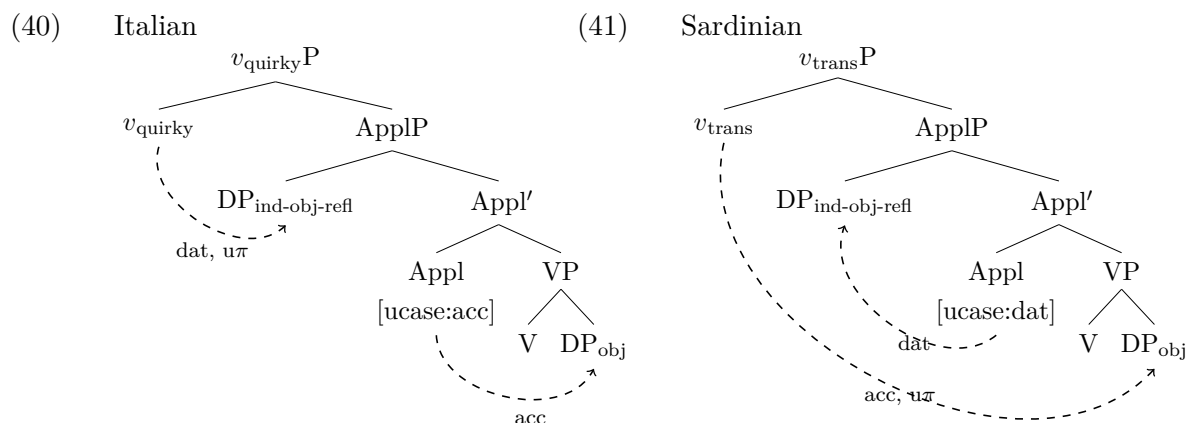
To sum up, in Standard Italian the auxiliary in the structures in examples (35), (36),

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[15]Another possibility to explore is whether the reflexive pronouns in Italian and in Sardinian bear different features. This has been proposed, for instance, by Remberger (2012: 241): in Sardinian, the dative reflexive clitic lacks a *strong* D feature, differently from the accusative pronoun.

(i)   a.   *si* ↔ D$_{st}$, acc
        b.   *si* ↔ D, dat

Such a proposal cannot be easily incorporated into the present analysis because it makes use of assumptions that I do not adopt. Moreover, we saw that the Sardinian dative pronoun, when merged in an unergative structure, behaves as in Italian (ie., triggering BE). In any case, investigating the structure of the reflexive pronouns in the two languages could be worth. Cf. also section §6.6.2 for ideas along this line.

and (37) is always BE. This configuration is generated if the reflexive pronoun has unvalued features, and it is always introduced lower than v. In Sardinian, reflexives have unvalued feature, too, since they trigger BE insertion in direct transitive reflexive clauses. In the case of an overt object and a reflexive pronoun (indirect transitive reflexives), the auxiliary is HAVE: this means that the reflexive is pretty high in the structure (in the specifier of a high Applicative phrase), so that it cannot intervene with its unvalued ϕ-features. In contrast, in the case of unergative direct reflexive clauses there is a lower applicative or a big VP. In Picernese, HAVE is inserted for both indirect unergative reflexives and indirect transitive reflexives, whereas BE is inserted for direct transitive reflexives. This means that reflexive pronouns have unvalued features and are always merged high in the structure, when they are not the direct object. Participle agreement cannot confirm this hypothesis, since in Picernese it is not present.

Coming back to the impossible languages, variety z is excluded because of a contradiction. Assuming that in a given language reflexives are consistently merged with the same featural specification across all cases in (35), (36) and (37) (i.e., excluding the possibility of multiple structures where we do not see free variation), if the direct transitive clause (35) has HAVE, it means that the clitic has valued features, since it behaves as a canonical transitive direct object. If it has valued features, according to (36) it must lead to HAVE insertion there as well, no matter in which position of the clause the reflexive is inserted. The configuration for variety z of Table 6.7 is schematized here below.

(42)   Direct transitive reflexive
        structure: $[_{vP} \, v_{\text{trans}}[\text{u}\pi\text{:\_\_}] \, [_{VP} \, \text{V} \, \text{DP}_{\text{refl}} \,] \,]$
        auxiliary: HAVE $\rightarrow$ DP$_{\text{refl}}[\pi\text{:}\alpha]$

(43)   Indirect unergative reflexive
        a.   structure: $[_{vP} \, v_{\text{trans}}[\text{u}\pi\text{:\_\_}] \, [_{VP} \, \text{DP}_{\text{refl}} \, \text{V} \, \text{DP}_{\text{covert}} \,] \,]$
              auxiliary: DP$_{\text{refl}}[\pi\text{:}\alpha]$ $\rightarrow$ HAVE.
        b.   structure: $[_{vP} \, v_{\text{trans}}[\text{u}\pi\text{:\_\_}] \, [_{\text{ApplP}} \, \text{DP}_{\text{refl}} \, \text{Appl} \, [_{VP} \, \text{V} \, \text{DP}_{\text{covert}} \,] \,] \,]$
              auxiliary: DP$_{\text{refl}}[\pi\text{:}\alpha]$ $\rightarrow$ HAVE.
        c.   structure: $[_{\text{ApplP}} \, \text{DP}_{\text{refl}} \, \text{Appl} \, [_{vP} \, v_{\text{trans}}[\text{u}\pi\text{:\_\_}] \, [_{VP} \, \text{V} \, \text{DP}_{\text{covert}} \,] \,] \,]$
              auxiliary: HAVE.

(44)   Indirect transitive reflexive
        Same possibilities as in (43)

Hence, it is not possible that the perfect auxiliary is realized as HAVE in (42), but as BE in (43) and/or (44). The prediction is that variety z does not exist.

To sum up, as already recognized by Loporcaro (2007, 2016), the distribution of the perfect auxiliaries among different reflexive clauses is organized in accordance with the implicational hierarchy shown in Table 6.8.

If a language with argument-structure-driven auxiliary selection has two perfect aux-

unaccusative	BE
direct transitive reflexive	
indirect unergative reflexive	
indirect transitive reflexive	
transitive, unergative	HAVE

Table 6.8: Hierarchy of reflexive clauses for languages with two auxiliaries.

iliaries, BE is associated with unaccusative verbs and HAVE with transitive predicates. Reflexive clauses may pattern in different ways, but they conform to the implicational relationships represented in Table 6.8. For instance, if in a certain language the auxiliary of indirect unergative reflexives is HAVE, then the auxiliary of indirect transitive reflexives must also be HAVE (whereas the auxiliary of direct transitive reflexives can be either HAVE or BE). With the present analysis, I provide an explicit answer to the question why that should be the case. I also correctly predict the possible and impossible distribution of auxiliaries represented in Table 6.7.

6.6.2 Triple auxiliation

So far we have seen cases of alternation between BE and HAVE. However, in some varieties where auxiliary selection is argument-structure-driven, the two allomorphs stand in free variation. Consequently, there are three different possibilities: HAVE, BE or HAVE~BE. Crucially, free variation does not occur across all cells of the paradigm, but it only affects the clauses that contain a reflexive pronoun (Loporcaro 2007: 202). The dialects where there is free variation for the perfect auxiliary in reflexive clauses have an argument-structure-driven system as in Italian, where transitives show HAVE and unaccusatives BE. The fact that free variation is found only with reflexives confirms that it must be due to the particular features of the reflexive DP. This is expected under a system of auxiliary selection that depends on the features of v.

Varieties of this type can be mostly found in Northern Italy, in particular in Piemonte (Castelletto Merli, Castellazzo Bormida, Felizzano), Veneto (Molina di Ledro, Velo, Cazzano), and Friuli (Grizzo, Montereale), but also in Southern Italy (Stigliano, Altomonte) (Manzini and Savoia 2005: II: 649-650). Some examples are represented in Table 6.9.

	unaccus. =(33-a)	dir. trans. refl. =(33-b)	indir. unerg. refl. =(33-c)	indir. trans. refl. =(33-d)	trans., unerg. =(33-e)
Castrovillari	B	H~B	H~B	H	H
Veneto	B	H~B	H~B	H~B	H
Genova	B	B	H~B	H~B	H
Macerata	B	B	B	H~B	H
Sardinian	B	B	B	H	H
Italian	B	B	B	B	H

Table 6.9: Free variation in reflexive clauses (Loporcaro 2016: 817).

The varieties in Table 6.9 exhibit different splits. In some of them, the split within reflexives is as in Sardinian. This is the case of Castrovillari (Calabria) and Macerata (Marche): indirect transitive reflexives behave differently from other reflexives. In Macerata there is free variation (not dependent on the person) only in the category of indirect transitive reflexives. Although the dialect of Macerata makes use of three different auxiliaries (HAVE, BE and HAVE∼BE), differently from Sardinian, it belongs to the Sardinian type in making a distinction between indirect transitive reflexives and other reflexives. Other languages that belong to the Sardinian group are the mixed systems discussed in section 6.6.1.

Some other varieties behave as Italian, where all reflexive clauses pattern together. The dialects spoken in Veneto belong to this type. In addition, there are also examples that belong neither to the Sardinian type, nor to the Italian type, such as the dialect of Genova. Here the split is between direct transitive reflexives and other reflexives.

I suggest that this free variation can be derived if reflexive pronouns may enter the derivation either with unvalued features, leading to BE insertion as in Italian, or with already valued features. Next to the series of ϕ-unvalued reflexive clitics, there is a series of reflexives already marked with valued ϕ-features, as I have proposed for the Italian reflexive phrase *se stess-o/-a/-i/-e*.[16] These pronouns determine HAVE insertion as in canonical transitive clauses, if the lexical entries for the perfect auxiliary in these dialects are as in Standard Italian.

Hence, free variation depends on the features of the clitics, which must come in two versions, one with a valued person feature and one with an unvalued one. If the reflexive is not valued for ϕ-features, Agree on v fails and the perfect auxiliary is the same as for unaccusative clauses; if its ϕ-features are already valued, then the clause behaves as a transitive one. Optionality in the featural make-up of the reflexive clitic leads to free variation in the perfect auxiliary. The language-specific distribution of free variation represented in Table 6.9 is the effect of some other factors, such as the exact featural specification of these clitics and their locus of Merge. Further research should investigate the factors that influence this free variation in each language.

Free variation with reflexives can also be restricted to some particular person features. Some examples are the dialects spoken in Canton Ticino and Valsugana, shown in Table 6.10. As the symbol % indicates, these data are subject to idiolectal variation. Here, we find BE in unaccusatives, HAVE in transitives/unergatives and free variation when the transitive/unergative clause contains a reflexive pronoun. This free variation is not equally distributed across all persons of the paradigm.[17]

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[16]I consider binding to be the co-indexation relation that ensures that the reflexive phrase and the c-commanding DP bear the same index. Binding consists of the valuation of an index on the reflexive by the index on the antecedent (or, following Hicks (2009), of the feature [var:_] by the feature [uvar:i]). This is independent of ϕ-valuation, which is a consequence of binding if the bindee bears unvalued features. If the reflexive bears already valued ϕ-features, binding does not have the further consequence of enabling ϕ-valuation. Instead, if the reflexive has unvalued ϕ-features, ϕ-valuation applies parasitically on binding: the reflexive DP can copy them from the c-commanding co-referential DP, once binding has taken place.

[17]Free variation tends not to be present in the 3rd person, as Table 6.10 shows. Free variation only in 1st, 2nd person and not in 3rd person reminds of the case of personal pronouns in Standard Italian as far as

	unaccus.	refl. 1sg	refl. 2sg	refl. 3sg	refl. 1pl	refl. 2pl	refl. 3pl	trans., unerg.
Telve, Torcegno, Borgo	B	$^{\%}$H∼B	$^{\%}$H∼B	H	$^{\%}$H∼B	$^{\%}$H∼B	H	H
Serso, Susà, Nogaré	B	H∼B	H∼B	H	H∼B	H∼B	H	H
Pergine	B	$^{\%}$H∼B	$^{\%}$H∼B	H∼B	$^{\%}$H∼B	$^{\%}$H∼B	H∼B	H

Table 6.10: Free variation with reflexives according to person (Loporcaro 2007: 201).

An example is the dialect spoken in Valdobbiadene, in (45).

(45)   *Valdobbiadene*
       B∼H B∼H H H B∼H H

   a.   Mi=me=son   petena-da   /
        NOM.1SG=REFL.ACC.1SG.F=be.PRS.1SG comb.PRTC-SG.F
        mi=me=ho   petenà.
        NOM.1SG=SELF.1SG=have.PRS.1SG comb.PRTC
        'I have combed my hair.'

   b.   Ti=tu=te=se   petena-da   /
        2SG=NOM.2SG=REFL.ACC.2SG.F=be.PRS.2SG comb.PRTC-SG.F
        ti=tu=te=ha   petenà.
        2SG=NOM.2SG=SELF.2SG=have.PRS.2SG comb.PRTC

   c.   Ela=la=s=ha   petenà.
        NOM.3SG.F=REFL.ACC.3SG.F=have.PRS.3SG comb.PRTC

   d.   Noialtre   s=aven   petenà.
        NOM.1PL.F REFL.ACC.1PL.F=have.PRS.1PL comb.PRTC

   e.   Voialtre   v=avè   petenà   / voialtre
        NOM.2PL.F REFL.ACC.2PL.F=have.PRS.2PL comb.PRTC   NOM.2PL.F
        ve=se   petena-de.
        SELF.2PL=be.PRS.2PL comb.PRTC-PL.F

---

participle agreement is concerned. When the direct object is a 1st, 2nd clitic (i-a), participle agreement is optional; when it is 3rd person (i-b), the participle must agree with it.

(i)   a.   Ci/vi=ha   vist-o/e/i.
            ACC.1PL/ACC.2PL=have.PRS.3SG see.PRTC-DEFAULT/PL.F/M.PL
            'S/he has seen us/you.'
      b.   Li=ha   vist-i/*visto.
            ACC.3PL=have.PRS.3SG see.PRTC-M.PL/DEFAULT
            'S/he has seen us/you.'

The distribution of participle agreement in (i) has found some tentative explanation in the literature. Manzini (2019) considers 1st, 2nd person clitics as oblique, indirect objects, encapsulated into a KP shell. Due to this KP layer, they occupy a different position in the string and they cannot undergo Agree. The KP is optional, leading to the pattern in (i). Cardinaletti (2008) divides the pronouns in two classes, extending Kayne's (1994)'s proposal: person pronouns and non-person pronouns. 1st, 2nd person clitics belong to the former class, while 3rd person clitics are actually non-person pronouns: they are marked for number and gender only. For this reason, they trigger obligatory participle agreement. Since person clitics are not specified for number (and gender), past participle agreement with them is not syntactic Agree but, rather semantic agreement, which is optional.

Ideally, the optionality of participle agreement with 1st, 2nd person clitics and the free variation in auxiliary selection with 1st, 2nd person reflexive clitics should be given the same (or a similar) explanation. Manzini's (2019) approach seems to be more compatible with the present analysis than Cardinaletti's (2008). However, further research is needed to clarify this issue.

    f.   Lore   le=s=ha   petenà.
        NOM.3PL.F NOM.3PL=REFL.ACC.3PL.F=have.PRS.3PL comb.PRTC

<div align="right">(C. Benetti, p.c.)</div>

Variation within reflexives depending on the person feature may also lead to different auxiliaries, without necessarily causing free variation. In Paduan, first and second person singular and second person plural select BE, whereas third person and optionally second person plural select HAVE.

(46)   *Padova*
        B B H H B∼H H

    a.   Me=so   petenà.
       REFL.ACC.1SG=be.PRS.1SG comb.PRTC
       'I have combed my hair.'

    b.   Te=te=sì   petenà.
       REFL.ACC.2SG=SELF.2SG=be.PRS.2SG comb.PRTC

    c.   El=se=gà   petenà.
       REFL.ACC.3SG=SELF.3SG=have.PRS.3SG comb.PRTC

    d.   Se=ghemo   petenà.
       REFL.ACC.1PL=have.PRS.1PL comb.PRTC

    e.   Ve=sì/ghì(gavì)   petenà.
       REFL.ACC.2PL=be.PRS.2PL/have.PRS.2PL comb.PRTC

    f.   I=se=gà   petenà.
       NOM.3PL=REFL.ACC.3PL=have.PRS.3PL comb.PRTC

<div align="right">(Benincà, Parry, and Pescarini 2016: 204)</div>

For the varieties in Table 6.10, Valdobbiadene (45) and Paduan (46), the presence of a split between unaccusative and transitive verbs indicates an argument-structure-driven system of auxiliary selection. The fact that free variation arises only with reflexives means that it has to do with the reflexive itself, as we saw here above and in section §6.6.1. The uneven distribution of free variation among the different persons may depend on different factors. As I have proposed above, there can be different series of reflexive pronouns, one with unvalued features, one with lexically valued features. In particular, reflexive pronouns may exhibit some lexical idiosyncrasies: the valued series of reflexive clitics might contain items that are valued only for some person specifications. For instance, in Pergine it might be the case that some speakers have a grammar where the ϕ-features of reflexive clitics are either unvalued, or valued, but this latter possibility is restricted only to 3rd person. Similarly, in Paduan reflexives for first and second person bear unvalued features. Instead, the reflexive for third person is already marked for person. How the possibility of reflexive pronouns with valued ϕ-features is restricted to certain person specifications remains a fact to explore in details. The present discussion does not constitute an exhaustive analysis, but only a suggestion for future work.

    An important point concerns participle agreement. In the Valdobbiadene examples

in (45), the auxiliary BE correlates with the presence of participle agreement, whereas HAVE correlates with lack of participle agreement. Since all reflexive clitics must move to T, we expect participle agreement to be always present. I think that these data can be explained with an impoverishment rule (Bonet 1991; Halle 1997; Harley and Noyer 1999). This deletes the gender and number features on v when Perf bears a valued π-feature.

(47) $[\gamma{:}\alpha], [\#{:}\alpha] \rightarrow \emptyset \ / \ \mathrm{Perf}[\pi{:}\beta]$

This means that the reflexive clitics always give rise to the insertion of an edge feature, which causes v to bear gender and number features. However, at Spell-out these are not realized as past participle agreement because of the rule in (47).[18]

The past participle in Paduan (46) does not exhibit overt agreement, so it cannot be used to show that the reflexive pronouns that determine BE insertion may have features different from the pronouns that trigger HAVE insertion. However, in other varieties of Veneto and Friuli there is variation in the auxiliary and in the agreement on the past participle, providing (some) confirmation of the hypothesis about two distinct versions of reflexive pronouns. We already saw the example of Valdobbiadene (45). In other varieties spoken in Veneto and in Friuli, reflexive clauses may exhibit HAVE or BE. The former comes without participle agreement, the latter with participle agreement (Benincà and Vanelli 1984; Kayne 1993). Example (48) shows the case of direct transitive reflexives, (49) of indirect transitive reflexives.

(48)   *Central Veneto*

    a. La Maria se=zé   vestì-a   in presa.
        the Maria REFL.ACC.3SG.F=be.PRS.3SG dress.PRTC-SG.F in hurry

    b. La Maria se=ga   vestìo   in presa.
        the Maria REFL.ACC.3SG.F=have.PRS.3SG dress.PRTC in hurry
        'Maria has dressed herself in a hurry.'   (Loporcaro 1998: 89)

(49)   *Central Veneto*

    a. La Maria se=zé   finì-a   le paste.
        the Maria REFL.DAT.3SG.F=be.PRS.3SG finish.PRTC-SG.F the pastries

    b. La Maria se=ga   finìo   le paste.
        the Maria REFL.DAT.3SG.F=have.PRS.3SG finish.PRTC the pastries
        'Maria has finished the pastries.'   (Loporcaro 1998: 89)

Similar facts can be observed in Algherese, which is a variety of Catalan spoken in the Sardinian enclave of Alghero.

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[18]Another possible analysis could consider the cases without overt participle agreement as cases of default agreement. This is possible if the reflexive pronoun of the valued series does not bear the same ϕ-features value as its antecedent, but rather default features (3rd person). This default reflexive DP is possible with antecedents of any persons and obligatory with 3rd person and 1st person plural. With this default-valued reflexive pronoun, Perf is spelled out as HAVE and participle agreement is realized as default.

(50)　　*Alghero*

    a.　Akeʎaz miɲonas sa=son　　　　　　　daɾas　　　　la ma.
       those　girls　　REFL.DAT.3PL.F=be.PRS.3PL give.PRTC.SG.F the hand

    b.　Akeʎaz miɲonas s=an　　　　　　　　dati　　la ma.
       those　girls　　REFL.DAT.3PL.F=have.PRS.3PL give.PRTC the hand
       'Those girls have shaken hands.'

    c.　Luz miɲóntsi sa=son　　　　　　　　manğátsi　luz aspagéts.
       the boys　　REFL.DAT.3PL.M=be.PRS.3PL eat.PRTC.PL.M the spaghetti

    d.　Luz miɲóntsi s=am　　　　　　　　　manğáti luz aspagéts.
       the boys　　REFL.DAT.3PL.M=have.PRS.3PL eat.PRTC the spaghetti
       'The boys have eaten the spaghetti.'　　　　　　　　(Loporcaro 1998: 120)

This is possible if the clitics are categorized differently: either with valued ϕ-features, or with unvalued features.

One may wonder if there are languages where these two series of pronouns map to different exponents, differently from the above cases, where the different reflexive pronouns are homophonous.[19] In the dialect of Conegliano (Veneto), reflexive pronouns exhibit two distinct forms, which correlate with the presence/absence of participle agreement and with the form of the auxiliary (Kayne 1993: 15). In particular, for 2ⁿᵈ person plural, we can find either the clitic morphologically marked for 2ⁿᵈ person plural *ve* and in this case the auxiliary is BE with participle agreement, or the default form *se* that is used for third person, and now we get HAVE without participle agreement. Hence, Conegliano shows that there are indeed two possible series of reflexive clitics.[20]

To sum up, on the top of the argument-structure-based split there can be some further distinctions depending on the features of the object, exactly as is the case for Standard

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[19]Under the framework of Distributed Morphology, which I assume, morphological realization is post-syntactic. Hence, there cannot be a morphological reflex of the lack of a person feature on the reflexive pronoun (correlating with the selection of BE) given that the realization of the pronoun applies after the syntax, while the reflexive pronoun will, in any event, end up with a person value (either because it is lexically valued or because it receives its person value in the syntax). In fact, a reflexive pronoun that enters the derivation with a non-valued person feature will have its person feature ultimately valued by its antecedent in the syntax. A morphological distinction could be possible if there is an impoverishment rule that removes the person feature that has been assigned in the syntax (in the context of a certain person value on T, which comes from the subject).

[20]Unfortunately, I could not collect any data concerning this point of variation. The observation is reported by Kayne (1993: 15) and is based on his communication with Graziella Saccon. Kayne (1993: 27) also notes that in Northern Italy the third person reflexive *se* tends to allow for a wider range of antecedents than in Italian. Anna Cardinaletti (p.c.) has pointed out that the reflexive pronoun for 3ʳᵈ person often appears with 1ˢᵗ person antecedents. This happens, for instance, in Venetian, shown in (i), but it is also found in many Southern Italian varieties as well (Benincà and Poletto 2005: 270).

(i)　a.　El　　　　se=ga　　　　　　　　　meso　i　calzeti.
      NOM.3SG.M REFL.DAT.3SG.M=have.PRS.3SG put.PRTC the socks
      'He has put his socks on.'

    b.　Se=gavamo　　　　　　meso　i　calzeti.
      REFL.DAT.3SG=have.PRS.1PL put.PRTC the socks
      'We have put our socks on.'　　　　　　　　(Benincà and Poletto 2005: 270)

Italian in the presence of a reflexive or an impersonal clitic. Under the present analysis of auxiliary selection, it is expected that variation concerns reflexives, both cross-linguistically (cf. Table 6.7) and within a language (cf. tables 6.9 and 6.10). Hence, the alternation between the two auxiliaries is not only determined by the structure of the clause, its projections or features, but also by the way in which the reflexive pronouns enter the structure. A language can have at disposal two distinct series of reflexives, as is the case for the varieties mentioned in Table 6.9. The optionality can be restricted to some specific person values, as for the dialects in Table 6.10, or it can be resolved in favor of one or the other clitic type depending on the person, as in the case of Paduan in (46).

6.7 Interaction with clitic pronouns

The morpho-phonological realization of the perfect auxiliary can also interact with clitic pronouns. Kayne (1993) discusses the dialect spoken in Novara, originally described by Turri (1973). In Novarese, auxiliary selection depends on the person of the subject and leads to the distribution BBH. In BBH, the auxiliary is spelled out as HAVE in the presence of a third person subject. Interestingly, HAVE also shows up whenever the structure contains a clitic pronoun, which is spelled out in proclisis on the finite auxiliary. This is shown in (51).[21]

(51)   *Novara*

    a. Mi=i=son   mia parlà.
         1SG=1SG=be.PRS.1SG not speak.PRTC
         'I have not spoken.'

    b. Mi=i=t=ò   mai   parlà.
         1SG=1SG=DAT.2SG=have.PRS.1SG never speak.PRTC
         'I have never spoken to you.'   (Kayne 1993: 14)

In general, the interaction with clitics is very difficult to model. An analysis of this complex alternation lies outside the scope of this dissertation. However, I would like to suggest a possible way to account for this interaction via simple contextually-sensitive vocabulary entries.

There are many languages where the perfect auxiliary is influenced by the presence of a clitic (some examples can be found in Manzini and Savoia (2005: II, III)). I propose to look at the variety spoken in Olivone (Switzerland) (Manzini and Savoia 2005: II: 598). Here below I present the data and I summarize the distribution of the auxiliaries in Table 6.11.

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[21]Very often, the data concerning the interaction with clitics are not very clear, even in the basic alternations. For Novarese, it is said that the auxiliaries tend to be BBH (quoting Kayne 1993: 14: "BE seems to be the somewhat more usual auxiliary with transitives and unergatives in the first and second person, while in the third person HAVE is preferred"). Hence, an analysis of this pattern requires new, exhaustive data that clarify the exact distribution of the two auxiliaries.

(52) Unaccusatives

    a.   A=som   nit/nida.
        NOM.1SG=be.PRS.1SG come.PRTC/PRTC.F
        'I came.'   1sg: BE

    b.   T=ei   nit   / tu sei nit.
        NOM.2SG=be.PRS.2SG come.PRTC
        'You came.'   2sg: BE

    c.   Tu=g=sei   nit   int.
        NOM.2SG=there=be.PRS.2SG come.PRTC inside
        'You came there inside.'   2sg + cl: BE

    d.   L=e   nou   via.
        NOM.3SG=be.PRS.3SG go.PRTC away
        'He went away.'   3sg: BE

    e.   U=g=a   nou   int.
        NOM.3SG=there=have.PRS.3SG come.PRTC inside
        'He came there inside.'   3sg + cl: HAVE

    f.   A=sem   nit.
        NOM.1PL=be.PRS.1PL come.PRTC inside
        'We came inside.'   1pl: BE

    g.   A=sei   nit.
        NOM.2PL be.PRS.2PL come.PRTC inside
        'You came inside.'   2pl: BE

    h.   I=e   nai   via.
        NOM.3PL be.PRS.3PL go.PRTC away
        'They went away.'   3pl: BE

    i.   I=g=a   ai   int.
        NOM.3PL=there=have.PRS.3PL come.PRTC inside
        'They came inside.'   3pl + cl: HAVE

                                  (Manzini and Savoia 2005: II: 598)

(53) Transitives, unergatives

    a.   U   drumit.
        have.PRS.1SG sleep.PRTC
        'I slept.'   1sg: HAVE

    b.   A=l=u   camou.
        NOM.1SG=ACC.3SG=have.PRS.1SG call.PRTC
        'I called him.'   1sg + cl: HAVE

    c.   Tu=es   camou   to   fradil.
        NOM.2SG=be.PRS.2SG call.PRTC your brother
        'You called your brother.'   2sg: BE

    d.   Tu=l=ai   camou.
        NOM.2SG=ACC.3SG=have.PRS.2SG call.PRTC
        'You called him.'   2sg + cl: HAVE

    e.   L=e   camou   to   fradil.
        NOM.3SG=be.PRS.3SG call.PRTC your brother
        'He called your brother.'   3sg: BE

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    f.   U=r=a   camou.
        NOM.3SG=ACC.3SG=have.PRS.3SG call.PRTC
        'He called him.'   3sg + cl: HAVE

    g.   L=e   drumit.
        NOM.3SG=be.PRS.3SG sleep.PRTC
        'He slept.'   3sg: BE

    h.   U=g=a   drumit   int.
        NOM.3SG=there=have.PRS.3SG sleep.PRTC inside
        'He slept there inside.'   3sg + cl: HAVE

    i.   Em   drumit.
        have.PRS.1PL sleep.PRTC
        'We slept.'   1pl: HAVE

    j.   A=g=em   drumit   int.
        NOM.1PL=there=have.PRS.1PL sleep.PRTC
        'We slept there inside.'   1pl + cl: HAVE

    k.   Ei   camou   me fradil.
        have.PRS.2PL call.PRTC my brother
        You called my brother   2pl: HAVE

    l.   A=m=ei   camou.
        NOM.2PL=ACC.1SG=have.PRS.2PL call.PRTC
        'You called me.'   2pl + cl: HAVE

    m.   I=e   camou   to   fradil.
        NOM.3PL=be.PRS.3PL call.PRTC your brother
        'They have called your brother.'   3pl: BE

    n.   I=r=a   camou.
        NOM.3PL=ACC.3SG=have.PRS.3PL call.PRTC
        'They have called him.'   3pl + cl: HAVE
        (Manzini and Savoia 2005: II: 598)

(54)   Reflexives

    a.   A=m=som   lavou.
        NOM.1SG=REFL.ACC.1SG=be.PRS.1SG wash.PRTC

    b.   Tu=i=sei   lavou.
        NOM.2SG=REFL.ACC.2SG=be.PRS.2SG wash.PRTC

    c.   U=s=a   lavou.
        NOM.3SG=REFL.ACC.3SG=have.PRS.3SG wash.PRTC

    d.   A=(m)=sem   lavai.
        NOM.1PL=REFL.ACC.1PL=be.PRS.1PL wash.PRTC

    e.   A=u=sei   lavai.
        NOM.2PL=REFL.ACC.2PL=be.PRS.2PL wash.PRTC

    f.   I=s=a   lavai.
        NOM.3PL=REFL.ACC.3PL=have.PRS.3PL wash.PRTC
        (Manzini and Savoia 2005: II: 599)

First of all, it should be noted that auxiliary selection in Olivone is argument-structure-based: the distribution of the auxiliaries is BBBBBBB with unaccusative verbs, and

subject	unaccusative	reflexives	transitive, unergatives
1st sg	B	B	H
2nd sg	B	B	B (but H if clitic)
3rd sg	B (but H if clitic)	H	B (but H if clitic)
1st pl	B	B	H
2nd pl	B	B	H
3rd pl	B (but H if clitic)	H	B (but H if clitic)

Table 6.11: Distribution of auxiliaries in Olivone (Manzini and Savoia 2005: II: 598-9).

HBBHHB with transitive/unergative verbs. In particular, Olivone is a mixed system (cf. section §6.7). Hence, this is a case of influence of clitics on an argument-structure-based system (and not on a person-driven one).

As the data shows, whenever there is a clitic argument (a direct or indirect object), the perfect auxiliary is realized as HAVE. Crucially, this also depends on the person feature of the subject and on the type of clause. For unaccusative and reflexive verbs, the auxiliary for 3rd person is realized as HAVE if there is a clitic in the structure, but the auxiliary for 1st and 2nd remains BE even in the presence of a clitic pronoun. Instead, with transitive verbs the presence of a clitic provokes the change to HAVE for all persons. In addition, the change of the auxiliary to HAVE does not depend on the features of the clitic (it is not the case that a 3rd person clitic causes HAVE insertion, whereas a 1st person clitic does not).

The easiest way to model these facts is by means of vocabulary entries that refer to the clitic pronoun incorporated into the T head. Recall that clitics are considered to be head and phrase at the same time (D and DP) (cf. section §3.2.4 in chapter 3). The last step of cliticization consists of head movement of the clitic to its host T. Assuming that Perf head-moves to T (cf. section §3.2.1 in chapter 3), the vocabulary entries can make reference to the [D] feature in the complex head Perf + T + D, created after cliticization and head movement. In (55), I show the VIs needed for Olivone.

(55)   *Olivone*

   a.   /$\sqrt{\text{HAVE}}$/ $\leftrightarrow$ Perf[π:α] / T[ϕ:1sg]
   b.   /$\sqrt{\text{HAVE}}$/ $\leftrightarrow$ Perf[π:α] / T[ϕ:1pl]
   c.   /$\sqrt{\text{HAVE}}$/ $\leftrightarrow$ Perf[π:α] / T[ϕ:2pl]
   d.   /$\sqrt{\text{HAVE}}$/ $\leftrightarrow$ Perf[π:α] / T[ϕ:2sg], D   cliticization
   e.   /$\sqrt{\text{HAVE}}$/ $\leftrightarrow$ Perf / T[ϕ:3], D   cliticization
   f.   /$\sqrt{\text{BE}}$/ $\leftrightarrow$ Perf elsewhere

Analyses along these lines can be adopted also for person-driven systems. If there is an interaction with clitics (eventually restricted to the context of some specific features of the subject), the lexicon contains a more specific vocabulary entry specified for the [D] feature within the complex head Perf + T + D (signaling the presence of a clitic). For instance,

we saw in (51) that in Novarese the auxiliary distribution is BBH, but in the presence of a clitic pronoun the auxiliary shows up as HAVE. The lexical entries for Novarese are as follows.

(56) *Novara*
    a. /$\sqrt{\text{HAVE}}$/ ↔ Perf[π:-part]
    b. /$\sqrt{\text{HAVE}}$/ ↔ Perf / D   cliticization
    c. /$\sqrt{\text{BE}}$/ ↔ Perf elsewhere

If in a language the form of the perfect auxiliary depends on the features of the clitic itself, this dependency can be specified again in the vocabulary entry as a more restricted context of insertion. For instance, if the more specific allomorph HAVE shows up only in correspondence of a 1st person clitic, the vocabulary entry must be as follows: /$\sqrt{\text{HAVE}}$/ ↔ Perf / D[π:+auth]. Another possibility is that Perf probes the clitic instead of the subject, if the clitic is located in an outer specifier of v when Perf probes for person. I leave this issue to future work.

6.8 Relations between person-driven and argument-structure-driven systems

We have seen in section §6.5 that in some languages auxiliary selection is argument-structure-driven, but it is also influenced by the features of the subject (mixed systems). Argument-structure-based splits can involve person asymmetries, next to modal and temporal restrictions. It is noteworthy that person-based systems may be influenced by modal and temporal restrictions, but not by argument structure-related restrictions (Ledgeway 2019: 352-353). This is represented in the schema in (57).

(57) Restrictions

auxiliary selection

person-based   argument-structure-based

TAM restrictions   *(arg. str. restrictions)   TAM restrictions person restrictions
                                                              (mixed systems)
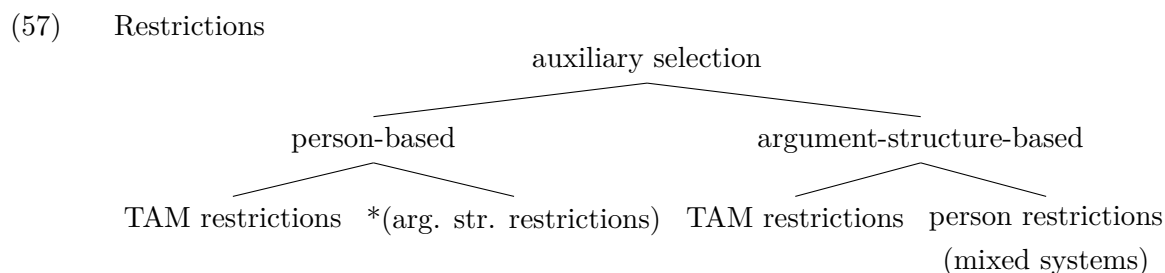
This is expected under a theory where the person probe on Perf can exclusively target either the DP in the external argument position, which is the higher possible matching goal, or the lower v, due to Nested Agree. If the DP is targeted, the information on v and on the object is not accessible anymore because of minimality. For this reason, person-driven systems are not compatible with argument structure restrictions. In contrast, argument structure-systems may also be sensitive to the features of the subject: if Perf π-agrees

with v, thereby skipping the DP_{sbj}, the information about the DP_{sbj} is still available on T, to which Perf head-moves. Hence, there is a further possible point of variation for argument-structure-driven varieties, as we have already seen for mixed systems (cf. section §6.5).

Under the present analysis, it is possible to explain the relations between the different systems, schematized in (57). The head Perf moves to T, with which it combines in order to get person and number inflection. In fact, T contains a $[\phi]$ probe that targets the DP in Spec,v, invariably leading to subject agreement. This is due to Nested Agree that forces T to Agree for $[\phi]$ with the nominative argument across the intervening head Perf (assuming that case assignment precedes ϕ-probing, cf. section §2.6.3 in chapter 2, and derivations in chapter 3 for discussion of subject agreement on the finite verb). Head movement leads to complex heads in trees (58) and (59).[22]

(58)   Argument structure split

          T
         /\
    Perf   T
   [uπ:α] [uφ:β]

(59)   Person split

          T
         /\
    Perf   T
   [uπ:β] [uφ:β]
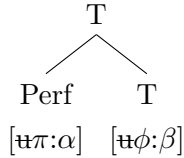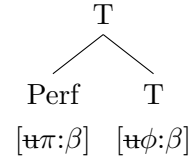
In argument-structure-driven systems (58), Perf has agreed with v (and, consequently, with the object), whereas T copies the features of the subject. Therefore, Perf and T may end up bearing different person features. This happens even if the clause is unaccusative or reflexive: v does not contain any person value, whereas T contains the person feature of the subject. When the complex head contains different person features, as in (58), it is possible to achieve further distinctions if the lexical entries that can substitute the terminal node Perf make reference to the featural content of another subpart of the complex head (i.e., T). This possibility is excluded in person-based splits, since the complex head contains two instances of the same value of person feature in the terminal nodes Perf and T. In fact, in person-driven splits (59) both Perf and T bear the same person feature.

Let me provide some details. If a language has the order [uInfl:perf] ≻ [uπ:__] on Perf, it is an argument-structure-based system of auxiliary selection, which results in a complex head as in (58). If the vocabulary entries do not make any reference to T, we have a pure argument-structure-based system (60). Instead, if the vocabulary entries refer to T, we have a mixed system, which is an argument-structure-based system with additional person restrictions (61).

(60)   Argument-structure-based system

        a. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi{:}\alpha]$
        b. $/\sqrt{\text{BE}}/ \leftrightarrow \text{Perf elsewhere}$

---

[22]Trees (58) and (59) represent the case of transitive/unergative verbs. For unaccusative and reflexive clauses, in the case of argument-structure-based auxiliary selection the complex head is as in (26). In contrast, in the case of person-driven auxiliary selection the complex head for unaccusative and reflexive verbs is the same as in (59).

(61)   Mixed system

    a. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi:\alpha]$

    b. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf} \ / \ \text{T}[\pi:3]$

    c. $/\sqrt{\text{BE}}/ \leftrightarrow \text{Perf elsewhere}$

If a language has the order $[\text{u}\pi:\_] \succ [\text{uInfl:perf}]$ on Perf, the result of Agree is as in tree (59). Such a language is a person-driven system, both if the vocabulary entries make reference to T and if they do not refer to it. In fact, if the lexical entries were of the type in (60) or (61) (with a generic α value on Perf), auxiliary selection would always result in the same allomorph (for example, HAVE), since Agree for $[\text{u}\pi:\_]$ on Perf always succeeds in finding a value on the DP in Spec,v. Instead, if the vocabulary entries realize specific person values, as is generally the case for person-driven systems, then the additional information on T cannot add any new information for realizing more fine-grained distinctions via the VIs. I illustrate this point with the vocabulary entries in (62).

(62)   Person-driven system

    a. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi:3]$

    b. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf} \ / \ \text{T}[\pi:3]$

    c. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi:2] \ / \ \text{T}[\pi:3]$

    d. $/\sqrt{\text{BE}}/ \leftrightarrow \text{Perf} \ / \ \text{T}[\pi:3]$

    e. $/\sqrt{\text{BE}}/ \leftrightarrow \text{Perf elsewhere}$

In the structure in (59), T and Perf bear the same person value (because both heads have targeted the DP_{sbj} for π-Agree). The VI in (62-a) simply states that the auxiliary HAVE must be inserted when the subject is 3rd person. We have already seen many examples of vocabulary entries of this type (cf. Ariellese (11)). A VI such as (62-b) makes reference to the same person value as (62-a), but on a different subpart of the complex head. This rule is as specific as (62-a) and corresponds to the same context of insertion. Hence, (62-b) is redundant. The condition of insertion of a VI such as (62-c) are never met, since Perf and T bear the same value for the feature $[\pi]$ (because they both probe the DP_{sbj} if the feature ordering on Perf is $[\text{u}\pi:\_] \succ [\text{uInfl:perf}]$).[23]

The status of (62-d) with respect to (62-a) is quite different. The VI (62-d) is in competition with (62-a) since they refer to two subparts of the same context ($\text{Perf}[\pi:3]$ / $\text{T}[\pi:3]$), but they map to two different allomorphs. I see two possible scenarios here. The competition between (62-a) and (62-d) can give rise to free variation. The result is a person-driven system with free variation according to some person value, without any argument structure restrictions. In the example in (62), the resulting auxiliary distribution is B B B~H (found, for instance, for the plural persons in Poggio Imperiale, Castelpetroso,

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[23]Having two different person features on T and Perf would only become possible with a particular person probe on Perf, which is insatiable and probes both the subject and v, so that more than one feature can be represented on Perf. Further research is needed to address this factor of variation.

Gallo Matese, Manzini and Savoia 2005: II: 728). Another possibility is that the VI that realizes the feature of the terminal node itself (here, (62-a)) is more specific than the one referring to other parts of the complex head (here, (62-d)), which are less local to the node to be substituted. In this case, the VI in (62-a) is chosen over (62-d). The result is a pure person-driven system.

As a summary, in Table 6.12, I represent the different types of auxiliary selection as a function of the feature ordering on Perf and of the different types of Vocabulary Items (VIs).

VIs make reference to:	Perf: $[\text{uInfl}] \succ [\text{u}\pi]$	Perf: $[\text{u}\pi] \succ [\text{uInfl}]$
underspecified π on Perf	argument-structure-driven	single auxiliary
specific π on Perf	✗	person-driven
underspecified π on Perf + ϕ on T	mixed systems	person-driven
specific π on Perf + ϕ on T	✗	person-driven
Tense/Aspect/Mood on T	TAM-restricted	TAM-restricted
not important: only one entry	single auxiliary	single auxiliary

Table 6.12: Systems of auxiliary selection.

Argument-structure-driven systems derive from the order $[\text{uInfl}] \succ [\text{u}\pi]$ and a Lexicon where there is a distinction between the lack vs. the presence of a person feature, independently of its specific value. Argument-structure-driven systems where the Vocabulary Items refer to specific values of the person feature do not seem to be attested. In such languages, the auxiliary would depend on the particular value of the person feature of the transitive object. Unfortunately, I do not have any explanation for this gap in the typology.

Mixed systems are languages that exhibit an argument-structure-based split with additional person restrictions related to the features of the subject (for instance, the variety spoken in Tufillo). Under the present analysis, whenever a language shows a dependency on argument structure, the head Perf must have the feature ordering $[\text{uInfl}] \succ [\text{u}\pi]$. In addition, the Vocabulary Items refer to the person feature of the subject expressed on the head T.

Person-driven systems arise from the ordering $[\text{u}\pi] \succ [\text{uInfl}]$. Whenever a particular value of the person feature is specified in the Vocabulary Items, either on Perf or on T (which both agree with the subject), the person-based split emerges. In this case, the person feature on T can never affect the auxiliary, since it constitutes a redundant information. If the lexicon of such a language contains vocabulary entries that spell out differently the same feature on Perf and on T (as (62-a) and (62-d)), either the VIs are hierarchically organized, so that the information on T is not considered in case of competition, or they give rise to free variation, which is actually widely attested in person-driven systems. In addition, no further restrictions based on argument structure are possible, because Agree is constrained by minimality: Perf agrees with the subject and cannot reach v. Moreover, I also predict that there cannot be any person-driven system that makes reference to

the person feature of the object, because of minimality. This seems to be borne out, since in these languages transitive clauses and reflexive clauses show the same auxiliary distribution, differently from what happens in argument-structure-driven systems and mixed systems.

Languages that are sensitive to tense/aspect/mood (TAM) restrictions have Vocabulary Items that make reference to these features on the T head.

Languages exhibit a single auxiliary either if they have a single Vocabulary Item for Perf, or if the ordering of features is as in person-driven systems and the Vocabulary Items are not specified for a particular value of the person feature.

6.9 Other argument-structure-driven systems

In this dissertation, I have focused on Italian, thereby providing an explicit analysis for all cases of auxiliary selection in root clauses, and in restructuring in accordance with participle agreement. In the present chapter, I have accounted for the existing typology, and I have applied my proposal to a sample of different systems of auxiliary selection. Next to the person-driven systems and mixed systems, there are of course many varieties where auxiliary selection is argument-structure-driven as in Italian. In this section I will briefly discuss the case of German and French. A complete analysis of the facts lies outside the scope of this dissertation.

First of all, it should be noted that the same verb may receive different analyses in different languages. For all languages with argument-structure-driven auxiliary selection, if core unaccusative and unergative verbs pattern as in Italian (BE and HAVE, respectively), each intransitive verb along the gradient of unaccusativity can be categorized with a different argument structure than the Italian counterpart (cf. discussion of Sorace's (2000) hierarchy in chapter 3). Given this premise, let us see how the system of other languages (Romance and non) differ from Italian.

In German, auxiliary selection is argument-structure-driven: BE is found with unaccusative, HAVE with transitive/unergative predicates.

(63)   a.   Der Zug ist   spät angekommen.
            the train be.PRS.3SG late arrive.PRTC
            'The train arrived late.'   (Sorace 2000: 864)

       b.   Kurt hat   den   ganzen   Sonntag
            Kurt have.PRS.3SG the.ACC.SG.M whole.ACC.SG.M sunday.ACC.SG.M
            gearbeitet.
            work.PRTC
            'Kurt worked all day Sunday'   (Sorace 2000: 874)

The main differences with Italian arise in reflexive and impersonal clauses. In German, reflexive clauses are normal transitive clauses, with the perfect auxiliary HAVE.

(64)   a.   Ich   habe   mich   gewaschen.
            NOM.1SG have.PRS.1SG ACC.1SG wash.PRTC
            'I have washed myself.'

       b.   Ich   habe   mir   die Antwort gegeben.
            NOM.1SG have.PRS.1SG DAT.1SG the answer   give.PRTC
            'I have washed myself.'

Note also that the reflexive pronoun *sich* is not a clitic, but it is a weak pronoun. Clitic pronouns need to be adjacent to the verb, whereas weak pronouns occur in a position higher than strong pronouns and DPs (Cardinaletti and Starke 1996, 1999; Cardinaletti 2004). German *sich* has the distribution of weak pronouns: *ich habe mich gestern gewaschen* 'I have washed myself yesterday' vs. *ich habe gestern den Hund gewaschen* 'I have washed the dog yesterday' (A. Cardinaletti, p.c.). It also inflects for case, person and number, but not for gender.

The difference between Italian and German (and Dutch) in auxiliary selection for reflexive clauses has been analyzed in connection to the fact that German does not have cliticization (Haider and Rindler-Schjerve 1987). I argue that the reason for this contrast is not the status of the argument (full DP vs. clitic pronoun), but rather its featural inventory (valued ϕ-features vs. unvalued ϕ-features). HAVE insertion in (64) can be explained if reflexive pronouns in German behave like the Italian reflexive phrases *se stess-o/-a/-i/-e*: they enter the derivation with valued ϕ-features.

The same can be said for German impersonal clauses. With the impersonal pronoun *man*, we find the same auxiliary as with other canonical DPs (BE with unaccusative, HAVE with transitive/unergative verbs, as shown in (63)), meaning that the impersonal pronoun bears valued ϕ-features (in particular, default features [ϕ:3sg]).

(65)   a.   Man   ist   spät angekommen.
            IMPERS be.PRS.3SG late arrive.PRTC
            'One arrived late.'

       b.   Man   hat   den   ganzen   Sonntag
            IMPERS have.PRS.3SG the.ACC.SG.M whole.ACC.SG.M sunday.ACC.SG.M
            gearbeitet.
            work.PRTC
            'One worked all day Sunday'

As a final remark, note that German lacks participle agreement. Under my analysis, this is a consequence of the lack of a gender and number probe on the edge feature.

Let us now move to French. In this Romance language, BE is found with a smaller subset of verbs than in Italian, but the general pattern for auxiliary selection is the same, as shown in (66).

(66)   a.   Anne a   pris/*-e   la clé.
            Anne have.PRS.3SG take.PRTC/PRTC-SG.F the key
            'Anne has taken the key.'

b. Marie est   allé-e/*allé   au   cinéma.
    Marie be.PRS.3SG go.PRTC-SG.F/PRTC to.the cinema
    'Maria has gone to the cinema'

c. (La clé) Jean l=a   *pris/pris-e   .
    the key Jean ACC.3SG.F=have.PRS.3SG take.PRTC/PRTC-SG.F
    'The key, Jean has taken it.'   (Loporcaro 2016: 802)

In example (66) we can see that participle agreement patterns similarly to Italian. However, it does not behave exactly in the same way. In fact, the participle also agrees when a constituent undergoes some types of Ā-movement, such as relativization (Kayne 1975, 1989a). This can be explained by means of a different inventory of edge features: some EFs$_{\bar{A}}$ contain a ϕ-probe, while other EFs do. Alternatively, the analysis proposed by Georgi and Stark (2020) can be adopted for French (which in this case would receive a completely different analysis as Italian). I refer the reader to sections §4.1, §4.3.5, §4.5.1 in chapter 4 for discussion.

In the case of reflexives, in French the auxiliary is BE as in Italian. Participle agreement is present with direct transitive reflexives (67-a), but not in indirect unergative reflexives (67-b) and in indirect transitive reflexives (67-c).

(67) a. Marie s=est   *dépeint/dépeint-e   come l'unique
     Marie ACC.3SG=be.PRS.3SG depict.PRTC/PRTC-SG.F as   the.sole
     candidate possible.
     candidate possible
     'Marie depicted herself as the only possible candidate.'

b. Marie et   Jeanne se=sont   longuement
     Marie and Jeanne REFL.DAT.3PL=be.PRS.3PL for.long.time
     écrit/*écrit-es.
     write.PRTC/PRTC-PL.F
     'Marie and Jeanne wrote to each other for a long time.'

c. La   veuve s=était   écrit/*écrit-e/*'ecrit-es
     the widow REFL.DAT.3SG=be.PST.3SG write.PRTC/PRTC-SG.F/PRTC-PL.F
     de fausses lettres.
     of false   letters
     'The widow had written herself some fake letters.'   (Loporcaro 2016: 808)

As far as auxiliary selection is concerned, in (67) BE emerges if the reflexive pronouns bear unvalued ϕ-features at the time when v probes for person, as is the case in Italian. The distribution of participle agreement in reflexive clauses can be explained if datives are never a (possible) goal for ϕ-Agree in French. When the reflexive pronoun bears dative case (67-b,c), its features are not accessible for the probe that determines participle agreement. When it is an accusative direct object, it is a visible goal (67-a). In other words, the difference between a transitive and an unergative reflexive is that in the former the reflexive is an accusative object that can control agreement, whereas in the latter the reflexive is a dative object, and in French there is no agreement with datives. This is

different from Italian, where dative DPs cannot control agreement as in French, but dative reflexive DPs can: *Teresa si=è fatt-a i panini* 'Teresa has made the sandwiches for herself' (cf. section §3.3.7 in chapter 3).

Impersonal clauses work as in German. The impersonal pronoun *on* behaves as a canonical DP with ϕ-features valued as default (as is clear by default participle agreement in (68)).

(68) a. On   est   arrivé.
          IMPERS be.PRS.3SG   arrive.PRTC
          'One arrived.'

      b. On   a   mangé.
          IMPERS have.PRS.3SG   eat.PRTC
          'One ate'

To conclude, within similar systems for auxiliary selection we can see some differences in auxiliation and in participle agreement that may emerge either from the featural specification (reflexives in German), from the syntactic structure (Ā-movement agreement in French) or from other independent facts of the language (lack of agreement with indirect object in French).

6.10 Participle agreement

In chapter 4, I have developed an analysis for participle agreement in Standard Italian. I have also sketched a solution for the difference in participle agreement in Old Italian and Standard Italian by resorting to different sources: in the former, participle agreement was due both to ϕ-probing on v and to edge features, in the latter only to edge features. A similar approach can be used to explain the variation in the Italian dialects.

In the Italo-Romance varieties, participle agreement exhibits vast variation. We find four main patterns of participle agreement, which constitute the most frequent types: (i) the edge feature-agreement type, (ii) the object-agreement type, with some further variation that eventually gives rise to subject agreement, (iii) the clitic-agreement type, (iv) the non-agreement type. Note that all these categories are crossed with all types of auxiliary selection, as I will summarize in Table 6.14 in section §6.12. I will now briefly discuss these types.

First of all, there are languages where participle agreement behaves as in Italian: it is related to unchecked features. In this case, participle agreement is due to the presence of an edge feature, which is spelled out as gender and number agreement (cf. chapter 4 for details). Among the languages where auxiliary selection is argument-structure-driven, languages of this type are Standard Italian and French (for French, cf. also an alternative analysis by Georgi and Stark 2020). Another example is the dialect of Soazza (Switzerland) (Manzini and Savoia 2005: II: 620, Manzini and Savoia 2007: 182). This variety differs from Italian in the behavior of reflexives: the auxiliary is obligatory HAVE and participle

agreement is optional. Similar varieties are found in Veneto.

Examples of mixed systems (argument-structure-driven systems with additional person restrictions) with participle agreement as in Italian are the varieties of Ortezzano (Marche) (Manzini and Savoia 2005: II: 682) and Servigliano (Marche) (Loporcaro 1998: 103-108). Here, the auxiliary is BE for unaccusatives and reflexives, but BBH for transitive and unergative verbs. Participle agreement goes exactly as in Italian: with the unaccusative subject, with reflexive pronouns, with clitics, but not with non-clitic arguments of transitive verbs. Note that in this variety (as in many others with person-based splits) overt participle agreement does not always correlate with BE: for transitive verbs with 1st and 2nd person subject, the auxiliary is BE, but the participle does not agree with any argument (unless the direct object is a clitic or a reflexive pronoun).

We also find examples of varieties where auxiliary selection is person-driven and participle agreement conforms to the Italian type. For instance, the dialect of Sonnino (Lazio) presents a BBH pattern for the perfect auxiliary, and the participle agrees with the unaccusative subject but not with the transitive subject (Manzini and Savoia 2007: 199).

(69)   *Sonnino*

    a. Sɔ   mmeˈnuto / mmeˈnut-a   / pparˈlato / llaˈvato   la
        be.PRS.1SG come.PRTC   come.PRTC-SG.F speak.PRTC wash.PRTC the
        ˈmakena.
        car
        'I(fem) have come / spoken / washed the car.'

    b. A   mmeˈnuto / mmeˈnut-a   / pparˈlato / llaˈvato   la
        have.PRS.3SG come.PRTC   come.PRTC-SG.F speak.PRTC wash.PRTC the
        ˈmakena.
        car
        'She has come / spoken / washed the car.'

Note, however, that it is not clear whether agreement with the transitive object is excluded. Although Manzini and Savoia (2007: 199) present the data in (69), where the participle does not agree with the object, Manzini and Savoia (2005: II: 701) provide examples of optional agreement with the transitive object.

(70)   *Sonnino*

        Sɔ   llaˈvato   / llaˈvat-a   la ˈmakena.
        be.PRS.1SG wash.PRTC   wash.PRTC-SG.F the car
        'I have washed the car.'

Another alleged example of the Italian type of participle agreement in the context of person-driven auxiliary selection is found in Carmiano (Puglia), where the auxiliary is always HAVE and the participle seems to pattern as Italian. For this language, I cannot state anything precise about participle agreement with transitive canonical object (the only examples of transitive clauses that I found contain clitic pronouns, which trigger

participle agreement) (Manzini and Savoia 2005: II: 560,795,796).[24] Again, Carmiano is another variety where participle agreement does not co-occur with BE, but rather with HAVE (in unaccusative clauses).

In general, it is very difficult to find person-driven varieties where the participle patterns exactly as Italian. In fact, I could only find the dialect of Pescocostanzo (Abruzzo) as a language where the auxiliary distribution is person-driven (BBH) and the participle agrees with unaccusative objects, but not with transitive objects.

(71)   *Pescocostanzo*

    a.   Sɔ   dərˈmi:tə / məˈnu:tə / rlaˈva:tə   (la ˈmakina).
        be.PRS.1SG sleep.PRTC come.PRTC wash.PRTC-SG.F the car
        'I have slept / come / washed the car.'

    b.   A   dərˈmi:tə / məˈnu:tə / rlaˈva:tə   (la ˈmakina).
        be.PRS.3SG sleep.PRTC come.PRTC wash.PRTC-SG.F the car
        'He has slept / come / washed the car.'

    c.   Semmə   dərˈmi:tə / məˈny:tə / rlaˈva:tə   (la ˈmakina).
        be.PRS.1PL sleep.PRTC come.PRTC.PL wash.PRTC-SG.F the car
        'We have slept / come / washed the car.' (Manzini and Savoia 2005: II: 698)

Past participle agreement with the transitive object seems to be possible in almost every language where auxiliary selection is person-driven. Apparently, these varieties allow for more possibilities for participle agreement than Italian, as it was the case for Old Italian. The Italian type of participle agreement is present in mixed systems such Ortezzano, but it is rare in person-driven varieties, where instead there is agreement also with the transitive object.[25]

Hence, the Italian type of participle agreement can be mostly found in argument-structure-based systems (they being canonical as Italian, mixed as Ortezzano, neutralized with a single auxiliary as Carmiano). In person-driven splits, if the participle agrees according to the edge feature type, then it also tends to agree with the transitive object. Just to make an example, among the seven person-driven (i.e., with no argument-structure-driven restrictions and with no free alternations) BBH varieties mentioned by Manzini and Savoia (2005: II: 728), only Pescocostanzo exhibits the Italian pattern of participle agreement. There is no participle agreement in S. Benedetto del Tronto, Campli and

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[24]The presence of participle agreement with a direct object marked with the preposition *a* (differential object marking) makes me think that object agreement takes place in this variety.

(i)   E   bbiʃt-i   a tˈtutti.
        have.PRS.3SG see.PRTC-PL.M to all
        'He has seen everyone.'   (Manzini and Savoia 2005: II: 795)

The reader may also wonder if the auxiliary *e* in (i) could actually be an instance of BE. Manzini and Savoia (2005: II: 779) argue that the only auxiliary in Carmiano is HAVE. For third person, they mention that the form *e* differs from the copula *je*.

[25]This distribution of the Italian participle agreement type can be considered further evidence for treating mixed systems as argument-structure-driven varieties rather than as person-driven varieties, as I have explained in section §6.5.

Pontecorvo, there is agreement with the plural object or subject in Canosa Sannita (as in Arielli, as we will see below), and agreement with the transitive object in Bellante and Sonnino (as in Old Italian).

(72)   Participle agreement in person-driven BBH varieties

    a.   edge feature-agreement type: Pescocostanzo

    b.   object-agreement type: Bellante, Sonnino, Canosa Sannita

    c.   non-agreement type: S. Benedetto del Tronto, Campli, Pontecorvo.

Turning to the second class, i.e. the object-agreement type, there are varieties where the participle agrees with different arguments without following the edge feature pattern. The participle can agree with the transitive object and the unaccusative subject. Among argument-structure-driven systems, I have already discussed the case of Old Italian (cf. section §4.7 in chapter 4). Other examples of this type are found in Friuli, although there object agreement is optional.

(73)   *Friuli*

    a.   O ai   comprade   / comprât una biele giachete.
        have.PRS.1SG buy.PRTC.SG.F buy.PRTC a   nice jacket
        'I have bought a nice jacket.'

    b.   Si=son   vidûs   / si=an
        REFL.ACC.3PL=be.PRS.3PL see.PRTC.PL.M   REFL.ACC.3PL=have.PRS.3PL
        vidût   tal spieli.
        see.PRTC in mirror
        'They have seen themselves in the mirror.'   (Loporcaro 1998: 80-81)

Another example is the dialect of Trepuzzi (Puglia, Loporcaro 1998: 72), and Neapolitan, although in its more conservative version (Loporcaro 1998: 68-9, Ledgeway 2000: 306, Loporcaro 2010: 226).[26]

(74)   *Neapolitan*

        Addʒə   kɔttə   / *kwottə a   pastə.
        have.PRS.1SG cook.PRTC.SG.F   cook.PRTC the pasta
        'I have cooked the pasta.'   (Loporcaro 2010: 226)

In (74), participle agreement is not realized via a suffix, but rather through metaphony, which is a type of root allomorphy involving alternations of the stressed root vowel. Examples are the forms [kwot:ə] 'cooked.sg.m' / [kɔt:ə] 'cooked.sg.f', [rut:ə] 'broken.sg.m' / [rot:ə] 'broken.sg.f', [vip:ətə] 'drunk.sg.m' / [vep:ətə] 'drunk.sg.f' (Loporcaro 2010: 235).

    There are other languages where the past participle agrees with the transitive object and auxiliary selection is person-driven. I have already mentioned above some languages

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[26]The object systematically controls agreement on the participle in Old Neapolitan (Formentin 2001: 420-423). In Modern Neapolitan the situation is more complicated: we find object agreement, lack of object agreement, and even subject agreement (Guasti and Rizzi 2002; Loporcaro 2010).

of the first group that might instead belong to this second set of languages. In addition, some dialects of Lazio show this distribution of participle agreement: Piglio, Genzano (Tufi 2003; Bentley 2003), Cori (Chiominto 1984: 179, Kayne 1993: 11,13). The dialect of Cori exhibits the auxiliaries BBBBBH, and the participle agrees with the unaccusative subject, with the transitive object, but not with the transitive subject.

(75)   *Cori*

    a.   Jésse   èo   it-e   a vedè.
         3PL.F have.PRS.3PL come.PRTC-PL.F to see.INF
         'They have gone to see.'   (Kayne 1993: 11)

    b.   Ntonio è   rott-a   la brocca.
         Antonio be.PRS.3SG break.PRTC-SG.F the jug
         'Antonio has broken the jug.'   (Kayne 1993: 13)

We have also cases with a single auxiliary: Morano Calabro, Trebisacce (Calabria, Loporcaro 1998: 74-76), San Leucio del Sannio (Campania, Iannace 1983: 72-80, 88-89, Ledgeway 2019: 350), although the auxiliary there depends on mood. Object agreement on the past participle is also found in many Occitan, Gascon and Catalan dialects (Loporcaro 2016: 806-807).

I explain object agreement with a ϕ-probe on transitive v (differently from Standard Italian, where transitive v only bears a π-probe). If the participle agrees with both the unaccusative subject and the transitive object, there are two strategies available at the same time: the edge feature system and the ϕ-probe on transitive v, exactly as for Old Italian. EF-insertion on v for clitics and for the unaccusative argument gives rise to participle agreement as in Standard Italian. Moreover, the presence of a ϕ-probe on transitive v, instead of a π-probe, leads to object agreement in the case of transitive clauses. These two strategies are also compatible with every type of auxiliary selection.[27] If this is argument-structure-driven, the different types of v remain distinguished by the presence and the absence of a person probe: transitive v is [uϕ:_], whereas unaccusative v does not contain any ϕ-probe. If it is person-driven, the relevant feature for auxiliary selection is located in Spec,v, so that the featural specification of v does not matter at all. The important point is that object agreement must be due to an independent probe on v.[28]

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[27]Alternatively, the presence of an independent ϕ-probe on every type of v is enough to ensure participle agreement with both the unaccusative subject and the transitive object, without resorting to an edge feature associated with a gender and number probe. However, this is possible only for languages where auxiliary selection is person-driven. In argument-structure-based systems, the featural specification of transitive v and unaccusative v must be kept distinct. Given the fact that EFs are independently needed for successive cyclic movement, I prefer to use these two co-existing strategies for participle agreement. Further research is needed to establish whether there exist person-driven languages where the participle agrees with the non-clitic transitive object, but not with the non-clitic unaccusative subject. This pattern would constitute evidence for the simultaneous presence of these two strategies. If this is not the case, person-driven languages might have a ϕ-probe on every type of v, differently from argument-structure-driven systems. This featural make-up asks for an explanation, as well as the general fact that person-driven systems strongly tend to have participle agreement with transitive non-clitic objects (due to a ϕ-probe rather than a π-probe on transitive v). I leave this issue for further research.

[28]Another possibility consists of the presence of a higher participial head Part that invariably bears

If the probe is located in a higher position or if it is relativized to a specific feature value, we can find more complicated patterns. In the former case, the participle can agree with the external argument, against Belletti's generalization (Belletti 2005b, 2017). In the latter case, the participle agrees only when the argument bears a particular feature value, for instance [#:−sg]. A language where these two configurations coexist is Ariellese. Here it is possible to have participle agreement with the internal or external argument as long as this is plural (D'Alessandro and Roberts 2010). In Ariellese, the controller is always the plural DP, if any, without considering its syntactic position (object or subject). The example in (76) shows a case of agreement with the plural subject in the presence of a singular direct object.

(76)   *Ariellese*

Giuwanne e   Mmarije a   *pittate   / pittite   nu
John   and Mary   have.PRS.3SG paint.PRTC.SG   paint.PRTC.PL a
mure.
wall
'John and Mary have painted a wall.'   (D'Alessandro and Roberts 2010: 58)

I will provide a more detailed description of this dialect in section §6.10.1.

In the third group of languages, participle agreement is found only with clitic pronouns. An example outside Italy is modern Catalan: the participle agrees with clitic pronouns, but not with the unaccusative or reflexive argument (Loporcaro 2016: 807). Among the Italo-Romance varieties, we can mention the dialect of Viticuso (Lazio). Here the participle does not agree with unaccusative or transitive verbs, but instead it does with object clitic pronouns and reflexive clitics (Manzini and Savoia 2005: II: 704-705). In particular, agreement with an accusative clitic is obligatory (77-b), whereas agreement with the reflexive pronoun is optional (77-c). For the latter, cf. section §6.11.

(77)   *Viticuso*

a.   A   parlˈlatə   / məˈnutə.
      have.PRS.3SG speak.PRTC   come.PRTC
      'S/he has come / spoken.'

b.   ʎ=a   caˈmatə/ l=a
      ACC.3SG.M=have.PRS.3SG call.PRTC ACC.3SG.F=have.PRS.3SG
      caˈmat-a.
      call.PRTC-SG.F
      'S/he has called him / her.'

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a φ-probe. However, this solution is very complex. Firstly, the probe on Part must be able to undergo Multiple Agree in order not to stop after it has probed the subject. Secondly, transitive *v* must bear a complete φ-probe (otherwise the φ-features of the direct object cannot be reached by the probe on Part because *v* is a phase). Thirdly, an overwriting mechanism is needed, since the features that are spelled out on the participle are those that are copied last (the one of the object).

    c.   Ts=a   laˈva:tə/-a.
           REFL.ACC.3SG=have.PRS.3SG wash.PRTC/PRTC-SG.F
           'He/she has washed himself/herself.'

Another example is the dialect of Catanzaro (Calabria). As shown in (78-a,b), participle agreement is normally excluded as in Spanish and in Sicilian, but it is possible (although optional) with a clitic pronoun, both with doubling clitics (78-c) and with direct object clitics (78-d) (Loporcaro 1998: 164-167, Loporcaro 2010: 238).[29]

(78)   *Catanzaro*

    a.   Maria avía   ǧǧa   ju:tu/*-a   a la ka:sa.
           Maria have.PST.3SG already go.PRCT/PRTC-SG.F to the house
           'Maria had already gone home.'

    b.   Anna s=avía   ǧǧa   lava:tu/*-a.
           Anna REFL.ACC.3SG.F=have.PST.3SG already wash.PRCT/PRTC-SG.F
           'Anna had already washed herself.'

    c.   A li   činku l=avíanu   ǧǧa   kučina:tu/-a   a
           at the five   ACC.3SG.F=have.PST.3PL already cook.PRCT/PRTC-SG.F the
           pasta.
           pasta
           'At five o'clock they had already cooked, the pasta.'

    d.   Ki:ʤi dɔlči   si=l=avíanu   ǧǧa
           these sweets REFL.DAT.3PL=ACC.3PL.M=have.PST.3PL already
           manča:tu/-i.
           eat.PRCT/PRTC-SG.F
           'These sweets, they had already eaten them.'   (Loporcaro 1998: 164)

For these varieties, I think that agreement can be due to cliticization and not to a syntactic ϕ-probe (neither on EF, nor inherently on v). It is a case of clitic reduplication: the inflection on the participle is a clitic rather than the result of syntactic Agree (Preminger 2009; Nevins 2011; Kramer 2014; Yuan 2018).[30] This case is a bit different from canonical clitic doubling, where there is a clitic that doubles the information of a full DP. Here, there are two clitic pronouns: one is the argument of the verb, one is the copied one, incorporated into the participle. Moreover, the inflection on the participle is the expected one, rather than a morpho-phonological form that is similar to a clitic in proclisis or enclisis on the participle. Despite these facts, I think that an analysis in terms of clitic reduplication can account for these data.

Participle agreement is considered to be a similar process to clitic doubling also in

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[29]In (78-c) we see a case of right dislocation, whereas (78-d) is a left dislocation. In both cases, there is a resumptive clitic that controls participle agreement.

[30]The difference in the status of reflexives as controllers for agreement (cf. Viticuso and Catanzarese) could be due to different reasons. For instance, in Catanzarese reflexive pronouns could always bear default 3rd person (cf. section §6.6.2 for a similar proposal). Another possibility is that in Catanzarese the reflexive clitic is morphologically realized as a null exponent when it is enclitic to the participle. Instead, in Viticuso the clitic is bound by the external argument and its features are always realized on the participle.

the analysis of Catalan provided by Vilanova (2018): participle inflection is due to the grammaticalization of ϕ-features from doubled semantic features. A similar analysis in terms of clitic resumption has also been proposed for French by Georgi and Stark (2020). According to Georgi and Stark (2020), French participle agreement with clitic pronouns is a case of resumption, although the inflection exactly looks like the one on unaccusative participles (which is instead due to a ϕ-probe on v). I adopt a similar view for those languages where the past participle agrees only with clitic arguments, but I leave the specific analysis to future work.

An alternative possibility would be that participle agreement is indeed due to edge features, but that in these languages the only EFs equipped with a ϕ-probe are the one specified for the features of the clitic pronoun. Hence, the EF responsible for participle agreement is EF[•T•], whereas EF[case:__] cannot trigger participle agreement because it lacks the ϕ-probe.

Finally, there are also languages without participle agreement, such as many varieties spoken in Sicily. One of these Sicilian varieties is spoken in Calascibetta (Manzini and Savoia 2005: II: 802). Here, the participle never agrees with anything (and the auxiliary is invariably HAVE). Outside Sicily, we can mention the dialect of Terracina (no participle agreement, and only BE as auxiliary); outside Italo-Romance varieties, the case of Spanish (no participle agreement, and only HAVE as auxiliary).[31] We also find languages without participle agreement and with free variation in the auxiliary, such as in Montebello Ionico (Calabria) (Manzini and Savoia 2005: II: 800).

It is noteworthy that languages that lack participle agreement tend to have a single auxiliary (HAVE, BE or free alternation). We find, however, also person-driven dialects without participle agreement. An example is the dialect of Acquafondata (Lazio): it has a classical BBH pattern, and the participle never agrees with any argument (Loporcaro 2007: 182-183). Even though there is a tendency for the correlation between lack of participle agreement and lack of auxiliary alternation (cf. also discussion in section §6.12), it is not always the case.

The lack of participle agreement can be due to different reasons. Either the lexicon does not contain any specific vocabulary entry for participle inflection, or the EFs come without a probe and there is no ϕ-probe on v. According to the former hypothesis, there is a vocabulary entry that is not specified for gender and number and that is inserted in case the language lacks a specialized VI-entry for participle agreement. Under the latter approach, participle agreement can never show up if the language lacks the probe to begin with. The presence of cases of metaphony favors the idea that in these varieties the participle does agree, but the result of Agree is simply not realized with morpho-phonological inflection. In fact, in many Southern dialects participle agreement is not realized via a suffix that encodes gender and number specifications, but rather via metaphony (as we have already seen for Neapolitan (74)). The result of this process is not always visible because not

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[31]Spanish has participle agreement with passives, which must be due to a ϕ-probe on Voice_{pass}.

every single verbal root allows for metaphony (Loporcaro 2016: 805-806). Since the right morpho-syntactic context is required to triggers root allomorphy, these cases are not compatible with an analysis where there is no ϕ-probe at all. In addition, in other dialects without participle agreement the participle ends with the vowel [ə], which is an underspecified vowel. This ending could be indeed different from the default ending masculine singular, and it could be an underspecified exponent for the inflection of an agreeing past participle. Hence, even though not all verbal participles exhibit a suffix or a metaphonic alternation, it could be the case that all have undergone syntactic Agree.

6.10.1 Participle agreement in Ariellese

We saw that in Ariellese the participle agrees with a plural argument, it being either the object or the subject. In this language, the participle exhibits only overt number inflection, with the exclusion of person and gender. Agreement is morphologically realized as root allomorphy with metaphony. In examples (79), the controller of participle agreement is always the plural argument, if there is a plural DP: the internal argument in (79-b), the external argument in (79-c), none of them in (79-a), any (or both) of them in (79-d).

(79)   a.   Giuwanne a   pittate   nu mure.
            John   have.PRS.3SG paint.PRTC.SG a   wall
            'John has painted a wall.'
       b.   Giuwanne a   pittite   ddu mure.
            John   have.PRS.3SG paint.PRTC.PL two wall
            'John has painted two walls.'
       c.   Giuwanne e   Mmarije a   *pittate   / pittite   nu
            John   and Mary   have.PRS.3PL paint.PRTC.SG   paint.PRTC.PL a
            mure.
            wall
            'John and Mary have painted a wall.'
       d.   Giuwanne e   Mmarije a   *pittate   / pittite   ddu
            John   and Mary   have.PRS.3PL paint.PRTC.SG   paint.PRTC.PL two
            mure.
            wall
            'John and Mary have painted two walls.'

(D'Alessandro and Roberts 2010: 58)

This distribution of participle agreement can be explained if v contains a probe for number that can be satisfied only by a plural value. The sensitivity of a probe to a particular value has been analyzed through the notion of *Relativized probing* (Béjar 2003; Nevins 2007; Béjar and Rezac 2009; Preminger 2014). A DP is a potential goal for a probe only if it bears the matching value of the feature that the probe is looking for (and not just the matching feature). Hence, the pattern in (79) can be derived if v bears a relativized probe of the form [u(#:−sg):_]. If the search domain of this probe contains a higher singular DP and a lower plural DP, the probe can skip the higher DP and keep on searching, until

it finds the lower plural DP, with which it agrees. This is possible if the probe does not simply look for the feature [#], but also for the particular value [#:−sg].

Relativizing probing with respect to plural number is cross-linguistically not uncommon. A similar, although distinct, phenomenon is *omnivorous number agreement*: verbal morphemes of plurality are realized when one or more than one argument is plural (Nevins 2011). In omnivorous number agreement, a single plural marker can correspond to more than one plural argument.

Both the external and the internal argument can be targeted by a probe on v either by means of *Multiple Agree* (Hiraiwa 2005; Nevins 2007, 2011) or via *Cyclic Agree* (Béjar and Rezac 2009). In the case of Multiple Agree, there is only one Agree operation (subject to c-command, minimality, and so on) that can result in as many valuations as possible. In the case of Cyclic Agree, there are two distinct, ordered applications of Agree. First of all, the probe searches downwards. If it does not find any goal in its c-command domain, cyclic expansion takes place when the external argument is merged: now the probe on v projects onto the v'-level and targets the subject under c-command. Note that Cyclic Agree in itself is not incompatible with Nested Agree: Nested Agree always applies to ordered operations, but it does not exclude different cycles of operations.[32]

For Ariellese, since the past participle can agree with the external argument, as shown in (79-c), one should resort either to cyclic expansion or to a probe located in a higher position. In the former scenario, the probe on v [u(#:−sg):_] searches the direct object. If it is not satisfied by it, then it can probe again when the specifier is built. However, there are some problems in applying Cyclic Agree to the present analysis. First of all, the possibility of failed Agree, adopted in this dissertation, requires a further assumption concerning the domain of Agree. In fact, if the successful completion of Agree is not dependent on successful valuation, then one might think that the probe will always stop after one cycle of Agree, simply because Agree has been carried out. Cyclic expansion is indeed possible if Agree counts as failed once all the search space of the probe, including both first and second cycle, are exhausted (and no goal has been found).

In addition, even though it seems that cyclic expansion plays a role in Ariellese, it is not active in Standard Italian. If cyclic expansion was possible in Italian, the person probe on Perf would be valued more often than it actually is. For example, in the case of reflexives the auxiliary would be HAVE instead of BE: ***Teresa si=ha lavata* instead of ***Teresa si=è lavata* 'Teresa has washed herself'. This output is generated if Agree on v fails in the first cycle when the reflexive pronoun still bears unvalued ϕ-features, but it is successful in the second cycle after the external argument has been introduced. Therefore, either cyclic

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[32]Cyclic Agree requires an ordering of different steps, but not necessarily two distinct Agree operations. The order of the different Agree steps under cyclic expansion follows from the order of Merge and Agree (under the assumption of strict cyclicity) (F. Heck, p.c.). If Agree is ordered before Merge, the object is probed for first; if Merge applies first, then the subject is targeted (assuming that targeting the object then is blocked by the Strict Cycle Condition). This latter ordering is not consistent with the derivations of Standard Italian proposed in this dissertation, where the π-probe on v must be discharged before the [•D•] feature. However, let me highlight that also this view of Cyclic Agree is compatible with Nested Agree.

expansion is parametrized and not available for all languages (it being a licit operation for Ariellese but not for Standard Italian), or it is specific to relativized probing and is not generally available for standard probes.

As I mentioned above, there is another possibility that does not make use of cyclic expansion. The probe responsible for participle agreement in Ariellese can be located in a higher position than v. A high position for the locus of participle agreement is a problem for Belletti's generalization, which states that past participle agreement cannot involve external arguments. For instance, in Italian the participle never agrees with the transitive subject. However, this generalization does not hold for Ariellese, where the external argument can control participle agreement. Personally, I think that this is the right way to go. Such a position could be a Part head that takes the vP as its complement (D'Alessandro and Roberts 2010). For this head, the subject is the first possible goal due to minimality. If it is not satisfied by the subject, Part probes the features of the object on v (without incurring into a PIC violation by assuming a probe [uϕ:_] on transitive v, whereas for unaccusative verbs the object in Spec,v is accessible for Part).[33] The syntactic structure is represented in (80).

(80) $[_{\text{PerfP}} \text{Perf} [_{\text{PartP}} \text{Part}[\text{u}(\#:-\text{sg}):\_] [_{v\text{P}} v [_{\text{VP}} \text{VP}]]]]$

Assuming the structure in (80), in the four scenarios in (81), corresponding to the examples in (79), the relativized probe [u(#:−sg):_] causes the insertion of the plural marker in all and only the cases where there is a plural argument.

(81)   a. $\text{DP}_{\text{sbj}}[\#:+\text{sg}] \ \text{DP}_{\text{obj}}[\#:+\text{sg}] \rightarrow$ default agreement
        b. $\text{DP}_{\text{sbj}}[\#:+\text{sg}] \ \text{DP}_{\text{obj}}[\#:-\text{sg}] \rightarrow$ plural agreement
        c. $\text{DP}_{\text{sbj}}[\#:-\text{sg}] \ \text{DP}_{\text{obj}}[\#:+\text{sg}] \rightarrow$ plural agreement
        d. $\text{DP}_{\text{sbj}}[\#:-\text{sg}] \ \text{DP}_{\text{obj}}[\#:-\text{sg}] \rightarrow$ plural agreement

In (81-a), there is no possible matching goal in the structure: Agree fails and participle agreement is not realized. In (81-b), Part skips the DP_{sbj} because it is not a matching goal for the relativized probe, and it reaches the features of the object on v (assuming that transitive v contains a ϕ-probe). Participle agreement is realized as a plural marker because the probe on Part is valued by v. In (81-c) and (81-d), Part successfully probes the subject and then it stops.

Given the fact that the inflection on the participle is the same in (81-c,d), we can say that in Ariellese the plural marker corresponds to just a single plural argument. In other words, in (81-d) the probe has agreed only with the external argument, and not with

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[33]There is a further difference with Standard Italian: in Ariellese transitive v contains a probe for ϕ, rather than for π. As I have already pointed out in section §6.10, this featural specification on v should be assumed for many Southern Italo-Romance varieties that have participle agreement with the transitive object. Hence, Ariellese belongs to this group of languages. Differently from languages where participle agreement is simply controlled by the object, in Ariellese the participle can agree either with the object or with the subject because of the higher position of the probe (on Part, rather than on v).

both arguments. This means that Multiple Agree is not needed for the scenario in (81-d), but just a relativized probe on the Part head. This solution is also simpler than the complex-probe-approach proposed by D'Alessandro (2017b) because it does not make use of feature sharing across different heads. According to D'Alessandro (2017b), the structure contains an extra head called π that is a probe and targets the subject; π forms a complex head with v, which probes instead the object. Hence, the head v, which is realized by participle agreement, contains the features of both the object and the subject.[34]

As far as the vocabulary entries for participle agreement are concerned, they spell out v as in any other varieties. The additional features on Part are visible in the complex head after v head-moves to Part. In (82-a), I repeat the general vocabulary entry that I have proposed for participle agreement in Standard Italian in section §4.4.1 of chapter 4. In (82-b) I show the general vocabulary entry needed for Ariellese.[35] In (82), the symbol α stands for the gender and number values of the DP, whose feature geometry is called α. This representation is adopted for the sake of simplicity, and it allows to generalize over the single, different vocabulary entries for the specific gender and number values.

(82)   a.   /participle agreement for α/ $\leftrightarrow$ v[Infl:perf],[γ:α],[#:α]   Standard Italian
        b.   /participle agreement for α/ $\leftrightarrow$ v[Infl:perf] / Part[#:$-$sg]   Arielli

Given this analysis, in Ariellese participle agreement is not related to EF-insertion. This does not imply that the language does not make use of edge features: EFs can still be inserted for triggering successive cyclic movement. However, it might be the case that EFs are not equipped with any ϕ-probe, in order not to cause any conflict with the number value on v and Part. Instead, if the EFs are equipped with the gender and number probes as in Italian, then the participle ending must spell out the head Part instead of v, differently from (82-b). In any case, participle agreement in Ariellese is unrelated to the presence of unchecked features and does not correlate with the choice of the perfect auxiliary, as is expected if it does not mirror the defectiveness of the structure.

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[34]Ariellese does not exhibit a dedicated marker when both arguments bear identical features or different ones. Therefore, there is no evidence for assuming Multiple Agree. However, there are other closely related languages where there is a specific allomorph for agreement mismatches. In Ripano, a dedicated marker appears on the verb whenever the external and the internal argument exhibit conflicting feature specifications (D'Alessandro 2017b, and references therein). This variety shows morphologically realized omnivorous number, which requires either a Multiple Agree analysis with a higher probe on a Part head that undergoes multiple valuation (Nevins 2011), or a complex probe scattered on more heads (D'Alessandro 2017b).

The aim of this chapter is to offer an overview of the different types of participle agreement that can be found in Italo-Romance and to suggest how these can be accounted for in accordance with auxiliary selection. The precise analysis of these data lies outside the scope of this dissertation.

[35]Note, however, that this is a simplification. In fact, in Arielli participle inflection is not expressed via a suffix, but via a metaphonetic change of the verbal root. For instance, the vocabulary entries for examples (79) should be specified as follows.

(i)   a.   /pit:ite/ $\leftrightarrow$ V[$\sqrt{\text{PAINT}}$] / v[Infl:perf], Part[#:$-$sg]
        b.   /pit:ate/ $\leftrightarrow$ V[$\sqrt{\text{PAINT}}$] / v[Infl:perf]

6.11 Participle agreement with reflexives

As a final remark, let me highlight that among those varieties where participle agreement is related to EF-insertion (as in Standard Italian), there is variation for agreement with reflexive pronouns. I have already said that exactly in this area there is variation in auxiliary selection (section §6.6). I explained this fact as a consequence either of the Merge position of the reflexive pronoun, or of its featural specification. The same explanations can account for participle agreement. Different patterns of participle agreement are due to different features on the reflexive pronouns or to different syntactic structures. In Table 6.13 I show the distribution of participle agreement according to different reflexive structures (cf. section §6.6.1 for auxiliary selection). I refer the reader to section §6.6 for further discussion of the different types of reflexive clauses.

	unaccus.	dir. trans. refl.	indir. unerg. refl.	indir. trans. refl.	trans., unerg.
Old Italian	+	+	+	+	+
Italian	+	+	+	+	−
Logudorese	+	+	+	−	−
French	+	+	−	−	−
Catalan	+	−	−	−	−

Table 6.13: Participle agreement (based on data from Loporcaro 2016: 810).

I have already discussed in chapter 4 the case of Old Italian and Standard Italian. Looking now at Logudorese (Sardinian), the situation is similar to Italian, but indirect transitive reflexive clauses select HAVE and lack participle agreement. This is expected if the benefactive clitic is introduced in a position higher than v. If this is the case, the reflexive clitic pronoun cannot trigger EF-insertion on v. Instead, when the reflexive pronoun is base-merged in a lower position, as in the case of direct transitive reflexive clauses, it causes EF-insertion and, consequently, participle agreement.

In French, participle agreement does not take place when the clitic is an indirect object. Hence, it is possible to resort to the unavailability of dative DPs for Agree (differently from Italian, where dative DPs are not controller for agreement, but reflexive dative DPs are).

For Catalan, I have suggested that participle agreement is a case of clitic doubling. As Table 6.13 shows, reflexive pronouns do not cause participle agreement in Catalan. This is possible if, for instance, reflexive clitics do not trigger reduplication (for reasons that I do not explore here).

Moreover, in some dialects there is free variation between BE with participle agreement, and HAVE and no participle agreement. An example is Paduan (Kayne 1993), but also Friulan (Benincà 1985). I repeat here again the data presented in section §6.6.2.

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(83)   *Central Veneto*

   a. La Maria se=zé   vestì-a   in presa.
       the Maria REFL.ACC.3SG.F=be.PRS.3SG dress.PRTC-SG.F in hurry

   b. La Maria se=ga   vestìo   in presa.
       the Maria REFL.ACC.3SG.F=have.PRS.3SG dress.PRTC in hurry
       'Maria has dressed herself in a hurry.'   (Loporcaro 1998: 89)

The optionality with respect to participle agreement within a single language, next to the correlation between participle agreement and auxiliary selection, can be neatly explained by means of two series of reflexive pronouns in the lexicon, one with default features, one with unvalued features.[36] The two possibilities are represented in trees (84) and (85). In (84), the reflexive pronoun in the object position is invariantly marked as default 3rd person masculine. In (85), the reflexive pronouns enter the derivation with unvalued ϕ-features, as we saw for Standard Italian (where the derivation in (84) is excluded).

(84)   Default reflexive DP   (85)   Unvalued reflexive DP
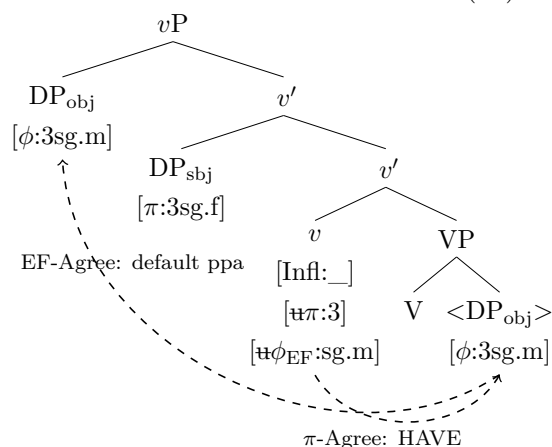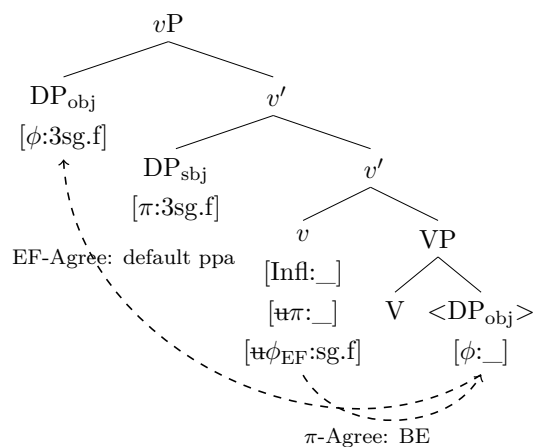
In the former option, represented in tree (84), Agree on v and, consequently, on Perf succeeds, leading to HAVE insertion. As far as participle agreement is concerned, the clitic is raised via EF-insertion. Its gender and number features are successfully copied by the EF on v. However, participle agreement is not realized at vocabulary insertion because there is no vocabulary entry specified for default features. Instead, the elsewhere form is inserted, as if v would have not copied any features. In the latter (which is the only case in Standard Italian), the clitic bears unvalued ϕ-features when it enters the derivation. Hence, Agree fails, leading to BE insertion. When the clitic escapes the phase domain it has been bound by the external argument, so that participle agreement realizes the ϕ-features that the reflexive pronoun has newly acquired via binding.

To sum up, the behavior of participle agreement with reflexives and the behavior of auxiliary selection with reflexives do not necessarily co-vary. The source of variation with

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[36]A prediction of this analysis concerns the existence of languages where the participle in reflexive clauses always shows overt default agreement (for instance, 3sg.m). Further research is needed to verify this expectation.

reflexives is twofold: locus of Merge, as in Sardinian, and featural specification, as in French and in Veneto.

6.12 Participle agreement and auxiliary selection

In the previous chapters, I have argued that auxiliary selection and participle agreement are independent syntactic phenomena. In Standard Italian, they happen to correlate because they both depend on the feature of the v head and on the features of the arguments. The former dependency is due to the distinction between two types of v. A defective v lacks a person probe, determining the realization of Perf as BE. Moreover, it cannot assign case, so that an EF must be inserted, leading to participle agreement. As far as the features of the arguments are concerned, a defective DP (i.e., with an unchecked feature) causes EF-insertion on v and, consequently, participle agreement. This is the case of clitics, for instance. In addition, if the DP is ϕ-defective, it leads to failed Agree on v, with the consequence that BE must be inserted.

In this section, I would like to stress that the attempt to generally correlate auxiliary selection and participle agreement turns out to be a mistake when one considers other Italo-Romance varieties.

In Italo-Romance varieties, it seems that almost every combination of auxiliaries and participle inflection is attested. In this chapter, I have dealt only with a subset of the possibilities found cross-linguistically (for data, cf. the collection by Manzini and Savoia (2005), and the literature quoted in the present chapter). Some of the possible combinations are shown in Table 6.14, which summarizes the distribution of participle agreement and auxiliary selection together (and their sources, according to the analysis developed in this dissertation).

language	participle	why	auxiliary	why
Italian	with DP_{unacc}, clitics	$EF[u\#,u\gamma]$	arg. str. split	$[uInfl] \succ [u\pi]$
Ortezzano, Servigliano	with DP_{unacc}, clitics	$EF[u\#,u\gamma]$	mixed split	$[uInfl] \succ [u\pi] + [\phi]$
Pescocostanzo	with DP_{unacc}, clitics	$EF[u\#,u\gamma]$	pers. split	$[u\pi] \succ [uInfl]$
Carmiano?	with DP_{unacc}, clitics	$EF[u\#,u\gamma]$	1 aux or free variation	lexicon
Old Italian	with DP_{obj} or others	$[u\phi]$	arg. str. split	$[uInfl] \succ [u\pi]$
Tufillo	with DP_{obj} or others	$[u\phi]$	mixed split	$[uInfl] \succ [u\pi] + [\phi]$
Arielli, Genzano	with DP_{obj} or others	$[u\phi]$	pers. split	$[u\pi] \succ [uInfl]$
Trebisacce, Castrovillari	with DP_{obj} or others	$[u\phi]$	1 aux or free variation	lexicon
	with clitics	clitic doubling	arg. str. split	$[uInfl] \succ [u\pi]$
	with clitics	clitic doubling	mixed split	$[uInfl] \succ [u\pi] + [\phi]$
Viticuso?	with clitics	clitic doubling	pers. split	$[u\pi] \succ [uInfl]$
Catanzaro, Catalan	with clitics	clitic doubling	1 aux or free variation	lexicon
Ranrupt (Gallo-Romance)?	no	no	arg. str. split	$[uInfl] \succ [u\pi]$
Secinaro, Colledimacine	no	no	mixed split	$[uInfl] \succ [u\pi] + [\phi]$
Acquafondata	no	no	pers. split	$[u\pi] \succ [uInfl]$
Calascibetta, Montebello Ionico	no	no	1 aux or free variation	lexicon

Table 6.14: Participle agreement and auxiliary selection.

Hence, even in other varieties auxiliary selection and participle agreement should be thought as separate, independent operations, as is the case for Italian. Similar conclusions

have been drawn by Loporcaro (1998); Bentley and Eythórsson (2004); Manzini and Savoia (2005, 2007); Legendre (2010).

Let me add a final remark on the relationship between the two phenomena. It has been proposed that the participle can agree with the clitic internal argument only in languages where there are two auxiliaries at disposal (Lois 1990). I think this is not true and a counterexample comes from Catanzarese and Catalan (cf. section §6.10).

(86)   *Catalan*

    a. L'Ana   ha   pres/*pres-a   la clau.
        the Ana have.PRS.3SG take.PRTC/PRTC-SG.F the key
        'Ana has taken the key.'

    b. La Maria ha   anat/*anad-a   al   cine.
        the Maria have.PRS.3SG go.PRTC/PRTC-SG.F to.the cinema
        'Maria has gone to the cinema.'

    c. (La clau) l=ha   *pres/presa   en Joan.
        the key   3SG.F=have.PRS.3SG take.PRTC/PRTC-SG.F the Joan
        '(The key) Joan has taken it.'   (Loporcaro 2016: 802)

Catalan is a language with a single auxiliary (HAVE), where participle agreement takes place only in the presence of clitic pronouns, and with no other argument. I have suggested that these cases of participle agreement are due to cliticization. One might think that if in Catalan there is no syntactic Agree, then Lois's (1990) generalization can still hold as far as participle agreement due to syntactic Agree is concerned. However, there are also other languages where there is just a single perfect auxiliary, but the participle agrees as an effect of the ϕ-probe on v. Such an example is the dialect of Trebisacce (Calabria).

(87)   *Trebisacce*

    a. Maríi̯ a   kkɔtt   / *kkutt   a mənéstrə.
        Maria have.PRS.3SG cook.PRTC.SG.F   cook.PRTC the soup
        'Maria has cooked the soup.'

    b. Maríi̯ s=a   stɔrt   / *sturt   a
        Maria REFL.DAT.3SG.F=have.PRS.3SG twist.PRTC.SG.F   twist.PRTC the
        ma:nə.
        hand
        'Maria has twisted her hand.'

    c. Maríi̯ e Rrɔ:sə a:nə   mɔrtə   / *murtə.
        Maria and Rosa   have.PRS.3PL die.PRTC.PL.F   die.PRTC
        'Maria and Rosa died.'   (Loporcaro 1998: 75-76)

Hence, I think that Lois's (1990) generalization cannot be considered a valid description of the data. Participle agreement and auxiliary selection remain independent phenomena, as Table 6.14 shows.

6.13 Summary

In this chapter, I have addressed the cross-linguistic and intra-linguistic variation for auxiliary selection and participle agreement, with a special focus on Italo-Romance varieties. I have distinguished two main types of auxiliary selection: argument-structure-based, where the determining factor is the type of clause; person-driven, which depends on the features of the subject, but not on the type of clause. I have analyzed these two systems by using two different extrinsic orderings of features on the perfect head Perf: [uInfl:perf] ≻ [uπ:__] for the former, [uπ:__] ≻ [uInfl:perf] for the latter.

Firstly, I have proposed an explicit and coherent analysis of all types of auxiliary selection by treating it as the result of Agree for the person feature. This allows not only to give a unified explanation that keeps the syntax very similar across different languages and confines the more fine-grained distinctions to the lexicon, but also allows to account for some specific facts. It is noteworthy that argument-structure-driven systems can be subject to further restrictions: tense, aspect and mood distinctions, but also person/number distinctions (mixed systems). In contrast, further restrictions based on argument structure or on person cannot constrain person-driven auxiliary selection for reasons of minimality in Agree operations.

Secondly, I have argued that those alleged person-driven systems that make reference to the argument structure (mixed systems) are instead argument-structure-driven systems, with some further distinctions given by the person feature of the subject as it appears on T. Hence, the distance between the two apparently very different systems of Standard Italian and Italo-Romance varieties is reduced not only by the fact that auxiliary selection in Italian is Agree for person in the same way as it is Agree for person in person-driven systems, but also because many alleged person-driven varieties are indeed argument structure systems.

Finally, by treating argument-structure-driven systems as the result of π-Agree, I could clarify why the area of reflexive clauses shows so much cross-linguistic and intra-linguistic variation within argument-structure-based varieties. In fact, different languages build reflexive clauses in different ways. Moreover, within a single language there can be free variation in reflexive clauses (and only in these clauses for this group of languages). These facts can be explained if the features of the object play a role in argument-structure-driven systems, as I have argued throughout this dissertation, and in particular if reflexive pronouns involve different structures.

I have also discussed the distribution of participle agreement, arguing that the same phenomenon can have different sources in different languages. The inflection on the past participle can be the Spell-out of an edge feature, of a ϕ-probe on a functional head with different degrees of complexity, of a doubled clitic pronoun. Moreover, in many languages the participle does not agree with any argument. The type of participle agreement does not seem to correlate with any particular configuration for auxiliary selection. In particular,

almost all combinations of auxiliary selection and participle agreement are attested. Hence, the two phenomena are independent.

The data presented in this chapter provide further evidence for the analysis of auxiliary selection that constitutes the main proposal of this dissertation. If auxiliary selection is considered to be the result of Agree with respect to person, we can account for the astonishing cross-linguistic variation with simple syntactic operations that vary according to a single parameter (the ordering of the features on Perf) and that map to different inventories of vocabulary entries. The next step forward is to extend this analysis of auxiliary selection to all languages that exhibit a periphrastic perfect tense, provided that one controls for other independent factors that can explain the cross-linguistic and infra-linguistic variability (such as the structure of reflexive pronouns). This result also constitutes further evidence for the principle of Nested Agree, which constrains ordered operations and is essential to derive argument-structure-driven auxiliary selection.

7 Concluding remarks

7.1 Why this dissertation exists

In this dissertation, I have developed an analysis of auxiliary selection in Italo-Romance, couched in Minimalism. I have argued that auxiliary selection is the result of Agree for the person feature. For Standard Italian, I have illustrated in details how the analysis can derive all the relevant data. To the best of my knowledge, there is no other theory of auxiliary selection that has attempted to provide an explicit and coherent analysis of the whole distribution of auxiliaries in root clauses and in restructuring, and sketched a typology of other varieties. Previous analyses focus either on the cross-linguistic comparison (Legendre 2007; Bjorkman 2011), thereby not explaining the more basic Italian facts (and also the more complex case of restructuring), or on other varieties (D'Alessandro and Roberts 2010; D'Alessandro 2017b), leaving again the Italian data not fully explained. Other accounts are based on obsolete principles (Kayne 1993; Cocchi 1995), which are not compatible with the current minimalist assumptions. Hence, this dissertation aims at filling this gap in the literature. The successful theoretical account of empirical data constitutes a confirmation of the adequacy of the present analysis.

The problem of auxiliary selection is important because it shows impressive variation among closely related varieties, although limited to two main types: the argument-structure-driven system, and the person-driven system. It has been proposed that in person-driven systems the head Perf licenses the external argument in a split ergativity scenario in languages like Ariellese, differently from what happens in Italian and in neighbor varieties (D'Alessandro and Roberts 2010). However, given that these two systems are attested in closely related varieties, it would be surprising if the syntax responsible for them was not underlyingly the same. Therefore, I have proposed a cross-linguistically uniform syntax, where the differences between languages are due only to a syntactic parameter (the order of the features on the perfect head) and to different Vocabulary Items in the lexicon. This analysis minimizes the differences between languages in accordance with the research program of Minimalism, exemplified by the *Uniformity Principle*.

(1)   *Uniformity Principle* (Chomsky 2001: 2)
        In the absence of compelling evidence to the contrary, assume languages to be uniform, with variety restricted to easily detectable properties of utterances.

I have said that there is no previous analysis that is able to derive all the Italian data by means of the basic operations Merge and Agree. This suggests that the inventory of the principles of grammar must be somehow enlarged with new tools. Since no existing analysis really works, the theory must be slightly modified. Hence, the solution to the

problem of auxiliary selection seems extremely relevant for understanding cross-linguistic variation, but also for more theoretical and foundational issues, such as the distribution of labor between syntax, morphology and the lexicon, and the conditions on the operation Agree. In particular, this work contributes to ongoing discussion on multiple probing, locality, minimality, and Agree.

In addition, auxiliary selection is also relevant to many other syntactic issues. For instance, it is related to other morpho-syntactic phenomena, such as participle agreement, which is also not yet fully understood, despite it being a well-studied phenomenon. The morphological realization of the auxiliary is also an interesting problem in restructuring. In this context, auxiliary selection has never been specifically addressed as a question in its own right, but it is only considered as a diagnostic hallmark for restructuring.

Hence, the main motivation for this dissertation is the solution of the long-standing puzzle of auxiliary selection, which can shed light on the theoretical tools that one needs to solve it, and whose solution is relevant to many aspects of Romance linguistics and of theoretical linguistics in general.

7.2 The main results

7.2.1 Auxiliary selection

In the perfect tense, many languages exhibit an alternation between the two different forms BE and HAVE for the inflected perfect auxiliary. This alternation depends either on the type of argument structure or on the person feature of the subject. I have assumed that the auxiliary realizes a functional head Perf located between v and T. Since the operation that transmits information across the syntactic structure is Agree, the natural way to derive the dependency between Perf and another head or phrase is to model auxiliary selection as an instance of Agree. In particular, it should be Agree for person because the auxiliary is sensitive to the ϕ-features of the arguments (cf. Italian reflexive and impersonal clauses). In person-driven systems, the dependency on the person feature of the subject is realized via Agree between Perf and the DP_{sbj}, which is the highest matching goal (assuming that all types of v are phases). In argument-structure-driven systems, the dependency on argument structure and on the features of the arguments is obtained via agreement between Perf and the person feature of the lower head v (valued as a result of a prior Agree operation between v and the internal argument). Auxiliary selection is due to Cyclic Agree (Legate 2005) between Perf and a lower argument, enabled by the intermediate head v.

The difference between these two systems is achieved by different extrinsic orderings of the features on the perfect head Perf: [uInfl:perf] $\succ$ [uπ:_] for the argument-structure-driven systems, [uπ:_] $\succ$ [uInfl:perf] for person-driven systems. The fine-grained cross-linguistic differences are due to the morphological inventory of each language.

The selected allomorph spells out the result of person-Agree on the head Perf. The

person feature on the head Perf is morphologically realized as allomorph selection rather than person inflection. In Standard Italian, if Perf has successfully copied a π-feature via Agree, then the selected root is the more specific allomorph (HAVE); if Agree has failed, then the elsewhere form (BE) is inserted. The alternation between the two allomorphs depends on the result of Agree also in other varieties: in person-driven systems, the more specific allomorph is inserted in the context of a specific person value (differently from argument-structure-driven systems, where the dependency is based on the presence/absence of a person feature, rather than on its specific value). For languages that have only a single auxiliary at disposal, it is either the case that their lexicon contains just a single lexical entry for the Perf head, or that they are based on a person-driven system (where Agree on Perf always succeeds in copying a value) and their lexicon contains only one allomorph, which is inserted in the context of any person value.

If auxiliary selection is considered as agreement for the person feature, we can account for the astonishing cross-linguistic variation by means of a simple syntactic parameter (the ordering of the features on Perf) and by assuming different inventories of vocabulary entries.

7.2.2 Auxiliary selection in Italian

Standard Italian is a language where the alternation between BE and HAVE for the perfect auxiliary depends on the argument structure. However, it is clear that in such a system auxiliary selection must be sensitive both to the featural make-up of the functional heads and to the features of the arguments. Auxiliary selection depends not only on the type of argument structure (v) but also on the type of arguments (π-feature on v, valued as a result of a prior Agree relation between v and the internal argument). I have offered a detailed derivation for auxiliary selection in different types of clauses: transitive verbs, transitive verbs with a reflexive object, unergative verbs, unaccusative predicates, monoargumental verbs, passive constructions, transitive verbs with a reflexive indirect object, quirky verbs, and impersonal clauses (combined with transitive, unergative, unaccusative verbs).

Whenever there is some kind of defectiveness in the structure, either in the functional head v (unaccusatives, passives) or in the DPs (reflexives, impersonals), the elsewhere form BE emerges. In the case of defective v, Agree on Perf fails because of the absence of a matching goal in the c-commanded structure. In the case of defective arguments, Agree with ϕ-defective items leads to the failure of valuation (defective intervention or failed Agree). This explains why transitive verbs exhibit BE when they are combined with defective items (reflexives, impersonals), but unaccusative verbs can never combine with HAVE (since they always involve a defective functional head). The "switch" is only from the most specific form (HAVE) to the elsewhere form (BE).

The hypothesis that auxiliary selection is π-Agree not only in person-driven systems, but also in the less straightforward case of argument-structure-based splits finds a further confirmation in the data about restructuring and dialects, which can be derived under

this specific analysis.

7.2.3 Participle agreement in Italian

In this dissertation, I have claimed that participle agreement and auxiliary selection are independent phenomena (in accordance with much previous literature). However, in Standard Italian they happen to pattern together because of the clusters of features on the functional head v and on the arguments. Empirical facts from other languages and from restructuring in Italian clearly confirms that these two phenomena are not directly related but dependent on the same type of features. The present account not only explains why there is no full correlation between auxiliary selection and participle agreement, but also why there is a partial correlation.

In Standard Italian, participle agreement is a morphological reflex of A-movement across v. Overt morphological inflection is realized on the past participle when the internal argument has moved out of its Merge position. A constituent must move out of a phase domain if it bears a feature that has not been valued, after all the operations triggered by the phase head have been carried out. Featural defectiveness can be inherent (as in the case of reflexive pronouns), or structural (due to the presence of a defective v). The theoretical implementation makes use of edge features, which have been independently proposed as a device to trigger successive cyclic movement.

The new proposal concerns the presence of a gender and number probe on the edge feature. This probe targets the ϕ-features of the item bearing the unchecked feature that has caused the edge feature insertion. Cases that apparently do not involve overt movement, but still exhibit participle agreement, can be reduced to instances of covert A-movement.

As far as cross-linguistic variation is concerned, I have argued that participle agreement can be due to different sources in different languages. The inflection can be the Spell-out of an edge feature (Italian), of a ϕ-probe on a functional head with different degrees of complexity (Old Italian, Ariellese), or of a doubled clitic pronoun (Catanzarese). Moreover, in many languages the participle does not agree with any argument. In addition, almost all combinations of different types of participle agreement with different auxiliary distribution are attested.

7.2.4 Restructuring in Italian

To the best of my knowledge, in this dissertation I have provided the first formal analysis of auxiliary selection in restructuring. Restructuring consists of monoclausal complex sentences that are characterized by apparently optional transparency effects in the choice of the perfect auxiliary associated with the restructuring verb: it can be either HAVE, or the one corresponding to the lexical verb (auxiliary switch).

The analysis of auxiliary selection developed for root clauses is extended to restructuring:

auxiliary selection always works exactly in the same way. The special trait of restructuring is a special type of v, v_{restr}. This head acts as an intermediate agreeing head that creates a "chain of information" thanks to the presence of a double [Infl] feature. The double [Infl] feature builds the connection between the higher and the lower portion of the clause. Auxiliary selection in restructuring is the result of cyclic Agree due to the head v_{restr}: Perf agrees with v_{restr}, which agrees with the lower v.

This special v can select different types of complements: either a vP or a TP. This choice is optional and it has no semantic effect (i.e., the embedded non-finite T head does not introduce any independent semantic tense feature). Evidence in favor of complements of different sizes comes from the fact that clauses with clitic climbing and/or auxiliary switch cannot undergo some syntactic operations that are sensitive to the size of the clause.

If auxiliary selection is an instance of π-Agree, as I have proposed, and if the lower portion of the clause can be of different sizes, then the data are exactly predicted. If v_{restr} selects a vP complement, the clausal perfect auxiliary faithfully corresponds to the one that would be selected by the lower v, since v_{restr} copies the π-information from the lower v, which is successively copied by Perf. As is the case in root clauses, auxiliary switch consists of the emergence of BE due to failed Agree or Agree with ϕ-defective items. Nevertheless, this effect is optional, since it depends on the size of the complement. Different complement sizes determine different search domains for Agree. By enlarging the complement, the lower v is not anymore the decisive factor for the form of the auxiliary. Assuming head movement of v to T, the presence of a person feature on the T head neutralizes the difference between the different types of v and suppresses the transparency effect, leading to HAVE insertion with any type of lexical verb. We can conclude that there is no real optionality with respect to auxiliary selection, but rather to the selection of the type of complement of v_{restr}.

Restructuring verbs are located along a cline as far as different restructuring properties are concerned. The only verbs that exhibit auxiliary switch are modal verbs. Other restructuring verbs, such as motion and aspectual verbs, are characterized by variable transparency effects. I have proposed that these verbs are selected by a restructuring v that is different from the one found with modal verbs, and that reminds of, respectively, a transitive and an unaccusative v. This explains their resistance to auxiliary switch and sheds light on other properties that they exhibit. A new observation is that, for some aspectual verbs, auxiliary switch is possible under some particular conditions. I have tentatively explained this behavior as the result of the selection of these aspectual verbs by the same v_{restr} that select modal verbs.

7.2.5 Typology

I have also addressed the cross-linguistic variation for auxiliary selection and participle agreement. Treating auxiliary selection as the result of Agree for person allows not only to give a unified explanation that keeps the syntax very similar across different languages

and confines the more fine-grained distinctions to the lexicon but also to account for some specific facts. Firstly, argument-structure-driven systems can be subject to further restrictions: tense, aspect and mood distinctions, but also person/number distinctions (resulting in so-called mixed systems). Instead, further restrictions based on argument structure or on a different argument than the subject cannot constrain person-driven auxiliary selection, because Agree is subject to minimality.

The distance between the two apparently very different systems of Italian and of Southern Italo-Romance varieties is reduced not only by the fact that auxiliary selection in Italian is person-Agree in the same way as it is person-Agree in person-driven systems, but also because many alleged person-driven varieties are indeed argument-structure-driven systems (mixed systems).

Finally, by considering argument-structure-driven systems to be the result of π-Agree, I could explain why the area of reflexive pronouns shows so much cross-linguistic and intra-linguistic variation within argument-structure-based varieties. In fact, different languages treat reflexive clauses in different ways according to a scale that corresponds to different syntactic structures. Moreover, within a single language there can be free variation in reflexive clauses (and only in these clauses). These facts can be explained if the features of the object play a role in argument-structure-driven systems, as I have argued throughout this dissertation, and in particular if reflexive pronouns may involve different features, structures or locus of Merge.

The proposal developed in this dissertation can be applied to every language with periphrastic perfect tense, provided that one controls for other independent syntactic and morphological properties of the language (as I have just explained for the case of reflexive pronouns).

7.2.6 Theoretical contribution

In this dissertation, I have proposed a new principle called Nested Agree. Nested Agree states that, if the features on a head are ordered, the domain of each operation is reduced by the result of the previous operation triggered by the same head. Under the assumption that the features on a single head are ordered, the domain of Agree operations is dynamic in the sense that it depends both on the syntactic structure itself and on the accomplishment of previous operations. With the principle of Nested Agree, I have contributed to the debate on the conditions of Agree, and in particular on minimality and on multiple probing.

Note that the principle of Nested Agree is not new in its components. In fact, it emerges by the combination of already proposed principles of syntactic theory, which are now combined in a novel fashion for the first time. The ingredients of Nested Agree are the following: downward Agree, feature ordering, and the Agree-Link theory of Agree (Arregi and Nevins 2012) (or, alternatively to Agree-Link, a specificity-driven constraint such as Maximize Matching Effects (Chomsky 2001) and the Principle of Minimal Compliance (Richards 1998)). Nested Agree is subject to all the standard conditions on Agree (feature

matching, c-command, minimality), is not specificity-driven and is fully derivational.

Nested Agree is required in order to solve the puzzle of auxiliary selection in Standard Italian. There are at least two contexts where this principle is necessary. Firstly, the person probe on Perf must get past the subject of transitive verbs and agree with v, thereby establishing the dependency on argument structure. Secondly, the raised internal argument of unaccusative verbs must be skipped by the person probe on Perf, in order to account for BE with unaccusative verbs (and this goal cannot be achieved by any other approach, including A-over-A minimality). The principle of Nested Agree is essential to derive the full pattern of argument-structure-driven auxiliary selection.

Moreover, the present analysis has offered a new perspective on the principle of minimality in the context of multiple probing. If the operations are ordered, the domain of a subsequent operation may exclude an apparent intervener, if the previous operation has given as a result a more embedded syntactic position than the one occupied by the intervener. Minimality violations do not arise (despite superficial appearance) if the higher, alleged intervener actually lies outside the search domain of the probe, as determined by Nested Agree.

I have also suggested some further applications of Nested Agree outside auxiliary selection: subject agreement on T across Perf (Italian), subject agreement on T in SOV structures (Spanish, Italian), subject agreement on T across an intervening dative (Icelandic, Italian), absolutive case assignment across the subject in ergative languages, multiple wh-fronting with order preserving movement (Bulgarian). I leave the detailed analyses of these facts to future work.

7.3 Outlook and further research directions

7.3.1 Application of Nested Agree and of edge feature insertion

An important question concerns the different types of features and their interaction with Nested Agree and with edge feature insertion, the two main tools used in this dissertation. Which operations are subject to Nested Agree? Does this principle affect only Agree, or also case assignment and Merge features? Similarly, which features trigger edge feature insertion, when unchecked? In this concluding section, I would like to summarize the facts highlighted by this dissertation, represented in Table 7.1.

Let me start with the discussion about edge feature insertion. In general, it can be said that unchecked features on a head, which are able to trigger operations, cannot cause edge feature insertion on the same head. These features are (a) to (f) in Table 7.1. In fact, assuming that EF-insertion is the last operation performed on a phase head, it will always happen after the other operations have already been carried out, namely when unchecked probes or undischarged Merge features have previously been satisfied. In other words, features (a)-(f) will be either deleted or deprived of their uninterpretability when the edge feature should be inserted, if necessary. Moreover, a probe that remains unvalued after

		NA	EF
(a)	uϕ:__	✓	✗
(b)	ucase:acc	✓	✗
(c)	•wh• on attractor (internal Merge)	✓?	✗
(d)	•D• (external Merge)	✓?	✗
(e)	•D• (EPP, internal Merge)	✓?	✗
(f)	~~u~~ϕ:__ (unvalued probe)	✗	✗
(g)	ϕ:__ (unvalued feature)	✗	✗
(h)	case:__ (unvalued feature)	✗	✓
(i)	•T• on clitic	✗	✓
(l)	•wh• on whP	✗	✓

Table 7.1: Application of Nested Agree and edge feature insertion to different features.

Agree (f) cannot trigger EF-insertion because of the possibility of failed valuation and failed Agree. It is failed Agree that allows the computation of the phase domain to ignore the presence of an unvalued Agree feature, as long as its [u] component is erased from the structure.

As far as the features located on XPs are concerned ((g) to (l) in Table 7.1), Agree is different from case assignment and the checking of the clitic-feature [•T•] (and Merge features in general) in that the latter two can trigger the insertion of edge features while the other cannot. An unvalued ϕ-feature (g) does not trigger EF-insertion because it is "well-formed" and does not need to escape the phase domain. This might be due to the fact that the lexicon contains lexically unvalued ϕ-features (for instance, on anaphoric pronouns or impersonal pronouns). For a ϕ-feature, being unvalued is a logical possibility and it is independent of any licensing requirement. An XP can enter the derivation with unvalued ϕ-features, and can be even spelled out as such.

Features as [•T•] or [case:__] (respectively, (i)-(l) and (h) in Table 7.1) lead to edge feature insertion. This highlights a difference between Agree, Merge and case assignment. An unvalued case feature must be assigned a value, differently from a ϕ-feature. In this dissertation, I have proposed that some items may remain with unvalued case feature (the impersonal *si*). This could mean either that case assignment can ultimately fail as Agree does, or that such XPs are not marked for case to begin with. It seems that the latter option should be adopted, if it is true that unchecked case features trigger edge feature because case features must be valued. Empirically, there seem to be many cases of movement related to unchecked case features (cf. raising), while I am not aware of any movement aimed at valuation of unvalued ϕ-features. The question why [case:__] should cause a crash in the derivation, whereas [ϕ:__] is well-formed, deserves further research (also in light of default case).

A feature that triggers Merge, if not satisfied under selection, must be discharged in a different structural position than its base Merge position, thereby causing displacement. For instance, this is the case with an unchecked wh-feature on a wh-phrase (l). Until C is

merged in the derivation, there is no possible attractor for this feature. Consequently, at the point of Transfer, the feature must escape the phase domain, undergoing successive cyclic movement in order to remain visible for the relevant head (not yet introduced in the derivation). The structural conditions for an operation must be met in order for the operation to be carried out. In the case of Agree, in general the c-command requirement is automatically satisfied because the position of the probe c-commands a portion of syntactic structure (unless the probe is located in the internal argument position). In the case of Merge-features that trigger internal Merge, the mergee (i.e., the moving item) must be in the structure together with the merger (i.e., the attracting item) and must be c-commanded by it (for external Merge, it works of course differently). The feature [•T•] of clitics (i), although able to start an operation, cannot be discharged before T enters the structure, with the consequence that it is not possible to avoid EF-insertion at the vP level.

Given the above discussion about features (a)-(f), one may wonder why features (h)-(l) do not start probing, thereby causing preemption of edge feature insertion. One possible answer is that [case:__] on a DP is different from an Agree probe [uF] because [uF], due to its u-prefix, is an active feature that scans its c-command domain. In contrast, [case:__] is not active in this sense: it cannot initiate an operation. Hence, it cannot be discharged without a case assigner being in the structure, and consequently it cannot be discharged in advance, in order to avoid EF-insertion. Therefore, an unchecked case feature triggers EF-insertion. Although case assignment looks formally very much like an instance of Agree, it is not as such from the perspective of the item bearing unchecked case. However, it is from the perspective of the case assigner (b), which initiates the operation. In the case of a Merge feature [•F•], it looks as if it can initiate Merge. However, as I have discussed above, it cannot search its c-command domain. This type of feature remains inactive until an item of the right category is selected from the numeration. As is the case for selectional features involved in external Merge, they are discharged by Merge once two subtrees are put together, but they do not search the c-command domain. Therefore, [•F•] behaves as [case:__].

Let me now move on to Nested Agree. On the basis of its formulation, this principle only affects the features on a head that can trigger some operations (in Table 7.1, (a)-(f), but not (g)-(l)). Agree operations are, by definition, subject to this constraint. This is the case of ϕ-probing (a), and of case assignment on the assigner head (b) (under the assumption that case assignment requires a probing operation). The unvalued probe (f) does not trigger Nested Agree simply because it is the result of the operation (a), already carried out.

External Merge features (d) do not involve any searching operation in the tree. Instead, they target an item in the numeration. In this case, there cannot be any effect related to Nested Agree, because this feature does not consider its c-command domain. Alternatively, depending on how external Merge features are conceived, one could also assume that such

a feature firstly searches the c-command structure, in accordance with Nested Agree, and then the numeration, after the search domain has been exhausted. Another question is whether the operations following the creation of the specifier via external Merge can be subject to Nested Agree (in accordance with the Strict Cycle Condition). I think this should be the case. However, since the last stored position after external Merge is Spec,H, when H discharges the next feature, it has again the whole c-command domain at disposal. Hence, the effect of Nested Agree is not visible, even though this might well apply to external Merge features.

As far as internal Merge features are concerned ((c) and (e) in Table 7.1), I do not have have a clear answer. In general, I have proposed that Nested Agree could be extended to Merge features in section §2.6 in chapter 2. Further research should clarify this point. In the case of the EPP-feature (e), it seems that its domain should not be restricted by Nested Agree, in order for it to be able to reach the right argument. However, I think that the EPP should be subject to Nested Agree, since it is a kind of probe. Nested Agree can constrain the EPP if the derivation involves a separate workspace, and the EPP-feature is composed of an Agree part for relativized probing and a Merge component. I have discussed this issue in chapter 5, concerning the feature $[\cdot D_{case:\_}\cdot]$ on v_{restr}.

The two possibilities just sketched for EPP-features are also available for other Merge features, such as $[\cdot wh\cdot]$ (c). Either they are exempt from Nested Agree, in order to ensure that they reach their target, or they are composed of an Agree part and a Merge component, which are discharged by means of a separate workspace. Note that, if Merge features are subject to Nested Agree, they should have the effect of enlarging the search domain of the other subsequent features on the head, given that their landing position is in the specifier of that head.

Let me also add a comment on defective intervention. According to my analysis, ϕ-probing is subject to it. Independently of its value ($\phi:\_$, $\phi:\alpha$, $\bcancel{u}\phi:\_$), every ϕ-feature is a matching feature for a ϕ-probe. Consequently, an unvalued ϕ-feature $[\phi:\_]$ is a goal for Agree, resulting in defective intervention if there is a valued ϕ-feature $[\phi:\alpha]$ lower in the structure.

Case assignment is not subject to defective intervention, instead. A valued case feature, which is c-commanded by a case assigner and c-commands another (unvalued) case feature, does not intervene between the assigner and the unvalued feature. This is because the feature responsible for case assignment is a valued probe that looks for a matching *unvalued* feature, differently from unvalued probes, which simply look for a matching feature. Hence, I think that the reason why defective intervention does affect ϕ-Agree, but not case assignment, lies in the difference between valued and unvalued probes.

Future research should clarify all these issues in detail by making use of different case studies.

7.3.2 On auxiliary selection and participle agreement

The declared purpose of the present analysis was to derive auxiliary selection within a strictly derivational approach, by means of the basic operation Agree. The main alternations have been successfully derived. However, there are still many very general questions that remain open. Many of these questions stem from the cross-linguistic comparison. Why do the alternations involve only the two forms BE and HAVE, with the most extreme case of threefold alternation between HAVE, BE and free variation among the two? Why does auxiliary selection tend to be the same phenomenon everywhere, it being the realization of the perfect head according to the person feature, whereas participle agreement is a very diverse phenomenon (involving different sources, different features, different syntactic operations)? Why are there no argument-structure-driven systems where the Vocabulary Items refer to specific values of the person feature (i.e., where the perfect auxiliary depends on the particular value of the person feature of the transitive object)? Why are there no person-driven restrictions in Germanic languages, differently from Romance? Does it have to do with some other phenomena, such as pro-drop, or participle agreement? Why is the auxiliary only sensitive to person, but not to gender and/or number with the exclusion of person? Why is participle agreement only sensitive to gender and number and not to person (both when it is due to edge features, and also when it is due to other sources)? If participle agreement is due to an edge feature, why is the result of EF-insertion only realized in direct neighborhood of a Perf head that assigns the right value to the Infl-feature on v? In other words, why is gender and number inflection realized only on the participle, and not just on every verbal form?

In addition, there are also other questions that are strictly related to the present analysis. For this account, it is crucial that there is a featural distinction between different types of v and of Voice heads. In particular, v^*, and quirky v, should bear a π-probe, $\text{Voice}_{\text{impers}}$ should contain an unvalued person feature, while v and $\text{Voice}_{\text{pass}}$ do not bear any ϕ-feature. The presence or absence of the π-feature could be related to other features that the heads contain. For instance, the person probe could be related to the ability of assigning case. The examination of the featural implications between the heads, of how the features bundle together, and of any featural co-occurence that finds an independent explanation, is one of the next goals.

More technical questions are the following. About covert movement, how and under which circumstances does an XP move covertly instead of overtly? Moreover, the analysis of participle agreement in reduced clauses still requires a solution as well. With respect to restructuring, it is still quite unclear which type of T head is contained in the restructuring complement. Which are its (defective) features? Why is clitic climbing obligatory with impersonals? Can we get rid of the matching condition about v_{restr}? What is the exact structure of aspectual and motion verbs? Do they allow for both raising and control? More research is needed to explain the nature and the whole variability of the properties of restructuring, especially of pheripheric restructuring verbs.

7.3.3 Further extensions

More generally, the next step is the extension of the present analysis of auxiliary selection to all languages that exhibit a periphrastic perfect tense, provided that one controls for other independent factors that can explain the cross-linguistic and intra-linguistic variability (such as the structure of reflexive pronouns or the featural specification of the heads).

Thereafter, other aspectual splits could also be taken into account. Many studies have linked auxiliary selection in the perfect tense to other perfect-related phenomena, such as ergative case (Mahajan 1997; Coon and Preminger 2012; Bjorkman 2018). According to Bjorkman (2018), HAVE and ergative case are two effects of the same underlying syntax. In Hindi-Urdu, the ergative marker -*ne* appears on subjects only in the perfective and perfect aspect. In addition, the clause must be transitive/unergative; in unaccusative clauses, the ergative marker is not possible, as (2) shows.

(2)   *Hindi-Urdu*

    a. Raam-ne nahaayaa.
        Ram-ERG bathe.PFV

    b. *Raam nahaayaa.
        Ram   bathe.PFV
        'Ram bathed.'

    c. Raam giraa.
        Ram   fall.PFV

    d. *Raam-ne giraa.
        Ram-ERG fall.PFV
        'Ram fell.'   (Mohanan 1994: 71)

Bjorkman (2018) proposes that in Hindi-Urdu the perfective aspectual head Asp licenses ergative case on a DP that has moved to its specifier. In transitive/unergative clauses (2-a,b), Asp attracts the external argument and assigns it ergative case. In unaccusative clauses (2-c,d), Asp attracts v (which is the highest matching goal because it bears a ϕ-probe and because the unaccusative subject is still in the direct object position). Since the EPP-feature on Asp is satisfied by head movement, Asp can neither attract the subject anymore, nor assign it ergative case.

The configuration for auxiliary selection in languages as Italian is very similar (Bjorkman 2018). In transitive/unergative clauses, the head Perf (equivalent to Asp) attracts the external argument to its specifier; then, it head-moves to T and it is realized as HAVE. Instead, in unaccusative clauses, Perf attracts v (due to the presence of ϕ-features on it), which is closer to Perf than the internal argument; v head-moves to Perf and this complex head does not further move to T. Perf is not realized as HAVE because it has not moved to T; however, the auxiliary BE is inserted to realize the stranding inflection on T.

Unless resorting to further assumptions, Bjorkman's (2018) account can neither derive

auxiliary selection in the case of reflexive and impersonal clauses, nor auxiliary switch in restructuring, nor the whole typology of person-driven splits (where the same distribution of auxiliaries is attested in different types of argument structure). The analysis runs into problems also for participle agreement: this is expected with unaccusative objects because v is a probe for ϕ-features, but also with accusative objects. I believe that the present analysis scores better results, as far as auxiliary selection is concerned. However, the relation with other Perf-related phenomena should, of course, be investigated. I leave to future work the examination of different aspectual splits outside the perfect tense.

Similarly, there are other usages of the auxiliaries HAVE and BE that, ideally, should be explained as well, without resorting to homophony with the perfect auxiliaries. Such cases are, among others, existential/locative BE, and possessive HAVE. Myler (2014) has provided a recent analysis of possessive constructions, which cross-linguistically show similar alternations as those found in the perfect. In particular, possession can be expressed with transitive HAVE constructions, with copular BE constructions containing a PP possessee, and with existential BE constructions containing an oblique possessor. Examples taken from Myler (2014: 5-6) are shown in (3).

(3) a. I have a book.   (English)
                                                          Transitive HAVE verb

   b. Ég   er   með bók.
       nom.1sg be.prs.1sg with book.acc
       'I have a book.'   (Icelandic)
                                   Copular BE verb + possessee in WITH PP

   c. Noqa   libru-yoq ka-ni.
       nom.1sg with   book-yoq be-1sg
       'I have a book.'   (Cochabamba Quechua)
                              Copular BE verb + predicate nominal possessee

   d. u menja   est'   kniga.
       at 1sg.gen be.3sg book
       'I have a book.'   (Russian)
                                     Existential BE + locative PP possessor

   e. Nekem   van   könyvem.
       dat.1sg be.3sg book.3poss.nom
       'I have a book.'   (Hungarian)
                                        Existential BE + possessive DP

The analysis should also be extended to causative and anticausative alternations (Alexiadou, Anagnostopoulou, and Schäfer 2015). In (4) is an example from Italian, but this type of alternation is cross-linguistically very common. In the perfect tense, the auxiliary is realized as HAVE in the causative variant (4-a), as BE in the anticausative clauses (4-b,c).

(4)   a.   Francesca ha   rotto   la finestra.
                Francesca have.PRS.3SG break.PRTC the window
                'Francesca broke the window.'   (causative)

        b.   La finestra si=è   rott-a.
                the window REFL.ACC.3SG=be.PRS.3SG break.PRTC-SG.F
                'The window broke.'   (anticausative)

        c.   A Francesca   si=è   rott-a   la
                to Franceca.DAT.3SG.F REFL.ACC.3SG=be.PRS.3SG break.PRTC-SG.F the
                finestra.
                window
                'Francesca unintentionally caused the window to break.'   (oblique causer)

                            (adapted from Alexiadou, Anagnostopoulou, and Schäfer (2015: 45))

It remains an open question, whether all these cases might be analyzed as allomorphy based on agreement.

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