

Auxiliary selection is Agree: person-driven and argument-structure-based splits

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Abstract

In this paper, I address the problem of auxiliary selection in Southern Italo-Romance and in Standard Italian. In the former, the perfect auxiliary depends on the person feature of the subject, in the latter on the argument structure. I propose that auxiliary selection is the result of person Agree in both systems. Cross-linguistic variation is due to a single syntactic parameter (the ordering of the features on Perf) and to different inventories of vocabulary entries. The apparently very different systems of person-driven and argument-structure-based auxiliary selection are not as different as they seem. Not only is auxiliary selection in Italian Agree for the person feature, but also many alleged person-driven varieties (mixed systems) are indeed argument-structure-based systems. The focus of this

contribution is mainly on Italo-Romance, in particular on person-driven systems and on so-called mixed systems.

Keywords: auxiliary selection, Standard Italian, Italo-Romance varieties, Agree, person feature

1. Introduction*

The term *auxiliary selection* refers to the alternation between BE and HAVE as auxiliaries in the periphrastic perfect constructions in Romance and Germanic languages.¹ The distribution of the two auxiliaries depend either on the argument structure, as in Italian and in French (Bjorkman, 2011; Perlmutter, 1978; Sorace, 2000), or on the person feature of the subject, as in many Central and Southern Italo-Romance varieties (Ledgeway, 2019; Tuttle, 1986). In addition, number features, tense, aspect and mood can also determine the choice of the perfect auxiliary.

In this paper, I propose that auxiliary selection is the result of Agree for the person feature both in person-driven and in argument-structure-driven systems. The different types of distribution are due to different orders of features on the syntactic head *Perf*. Moreover, the fine-grained distinctions arise by means of language-specific vocabulary entries.

This contribution focuses on languages where auxiliary selection is person-driven (such as Ariellese), or it is based on argument structure with further person restrictions (such as Tufillo). The analysis is couched in Minimalism (Chomsky, 1995, 2000, 2001) and in Distributed Morphology (Halle & Marantz, 1993; Harley & Noyer, 1999).

2. Person-based auxiliary selection

In many Italo-Romance varieties, the morphological realization of the perfect auxiliary depends on the person of the subject. Languages of this type are found in particular in Central and Southern Italy, but person-driven splits are also present in some Northern varieties (for instance, some Novarese dialects of Piedmont) and in some northern Catalan dialects outside Italy (Ledgeway, 2019, p. 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 common pattern, the auxiliary corresponding to first and second person is realized differently from the auxiliary for third person. This frequently gives rise to the paradigm BE-BE-HAVE (BBH). A language where the auxiliaries are BBH is Ariellese (Abruzzo). The perfect auxiliary is BE for first and second

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1 With the labels “BE” and “HAVE” in capital letters I refer to the abstract morphemes corresponding to the roots of the verbs $\sqrt{\text{BE}}$ and $\sqrt{\text{HAVE}}$. For instance, the label HAVE stands for each possible occurrence of the auxiliary ‘have’. In addition, I use the abbreviation “B” for BE and “H” for HAVE.

person subjects, whereas a third person subject determines HAVE insertion. Example (1) shows the pattern BBH for transitive (1-a,b), unergative (1-c,d) and unaccusative predicates (1-e,f).²

(1) *Ariellese*

- a. Ji so' fatte na torte.
1 SG.NOM be.PRS.1 SG make.PRTC a cake
'I have made a cake.'
- b. Esse a fatte na torte.
3 SG.NOM have.PRS.3 SG make.PRTC a cake
'She has made a cake.'
- c. Ji so' fatijate.
1 SG.NOM be.PRS.1 SG work.PRTC
'I have worked.'
- d. Esse a fatijate.
3 SG.NOM have.PRS.3 SG worked.PRTC
'She has worked.'
- e. Ji so' cascate.
1 SG.NOM be.PRS.1 SG fall.PRTC
'I have fallen down.'
- f. Esse a cascate.
3 SG.NOM have.PRS.3 SG fall.PRTC
'She has fallen down.'
- (D'Alessandro & Roberts, 2010, pp. 43-44)

Cross-linguistically, splits that separate 1st-2nd person from 3rd person (as in (1)) are the most frequent. Nonetheless, almost all combinations are possible. For instance, there are examples where 1st and 3rd person pattern together with exclusion of 2nd person. An example is Bisceglie (HBHHH): 2nd person singular selects BE, whereas 1st and 3rd persons determine HAVE insertion (Loporcaro, 2007, p. 195). Other varieties of this type are Gioia del Colle (BHBHH) (*ibid.*, p. 196), Introdacqua (HBHHH) (*ibid.*, p. 184) and Canosa Sannita (HBHHB) (Legendre, 2010).³

Even closely related dialects may exhibit huge variation. In Table 1, I illustrate

² I assume that unergative verbs are underlyingly transitive predicates (Hale & Keyser, 1993). Unergative verbal roots merge with a covert, cognate object, thereby behaving as transitive verbs. This is also confirmed by the fact that in all Romance varieties transitive and unergative verbs behave in the same way as far as auxiliary selection is concerned (Loporcaro, 2001, p. 463, Loporcaro, 2007, p. 180).

³ Admittedly, this overview is only a tiny picture of the actual variation in auxiliary selection. For more information, I refer the reader to Manzini & Savoia (2005). It should also be acknowledged that the data presented by Manzini & Savoia are different from what I have reported here above. According to the authors, Bisceglie belongs to the standard type BBH (*ibid.*, II: 721), and Canosa Sannita too (*ibid.*, II: 687). For Introdacqua and Gioia del Colle there is no documentation there. Manzini & Savoia (*ibid.*, II: 728) also provide a list of varieties where 2nd person patterns differently from other persons: Vastogirardi, Sassinoro, Ruvo, Bitetto. In these languages, there is optional alternation between HAVE and BE with 1st and 3rd person: H~B B H~B. Clearly, a more precise picture requires new linguistic data. My intention here is only to give the reader a rough idea of the cross-linguistic variation in auxiliary selection.

the distribution of the perfect auxiliaries for the varieties of L'Aquila, Vasto, Introdacqua and Notaresco (Abruzzo). The data are originally provided by Giammarco (1973, pp. 162-6), and discussed by Loporcaro (2001).

Table 1: Cross-linguistic variation in auxiliary selection in Abruzzo (Loporcaro, 2001).

	1 st sg	2 nd sg	3 rd sg	1 st pl	2 nd pl	3 rd 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

In addition, auxiliary selection can be constrained by other factors. For instance, in some varieties the alternation is only attested in the singular, but not in the plural (examples are the varieties spoken in Bisceglie and in Vasto). 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, p. 124, Manzini & Savoia, 2005, II: 682-683, Ledgeway, 2019, p. 356).

To sum up, the splits according to the person feature of the subject range from the classical pattern BBH to the mirror distribution HHB, to splits that single out just second person or first person (for references, cf. Ledgeway, 2019; Legendre, 2010; Loporcaro, 2001, 2007, 2016; Manzini & Savoia, 2007; Manzini & Savoia, 2005).

2.1. Person-based systems as person Agree

In section 2, we saw that even closely related varieties show impressing cross-linguistic variation in auxiliary selection (cf. Table 1). The syntax of closely related varieties should be considered as much uniform as possible, since these languages are genetically and areally related. For this reason, I consider the specific realizations of the perfect auxiliary to be due to the language-specific vocabulary entries (as also claimed for Abruzzese by D'Alessandro, 2017, pp. 15-16). Nonetheless, the dependency on the person feature that is realized by the vocabulary entries must be determined in syntax, since it is encoded in the morpho-syntactic feature of person $[\pi]$.⁴ Hence, I argue that auxiliary selection is the result of Agree for the person feature, spelled out by language-specific vocabulary entries.

Following Bjorkman (2011) and D'Alessandro & Roberts (2010), I assume the syntactic structure in (2) for perfect periphrastic constructions.

$$(2) \quad [_{TP} T [_{PerfP} Perf [_{vP} v [_{VP} VP]]]]$$

The allomorphs HAVE and BE both realize the syntactic node Perf. This is a functional head located between v and T, which brings in the perfective semantics via an inflectional feature [Infl] valued as *perf* (Adger, 2003; Bjorkman, 2011). I propose that this feature

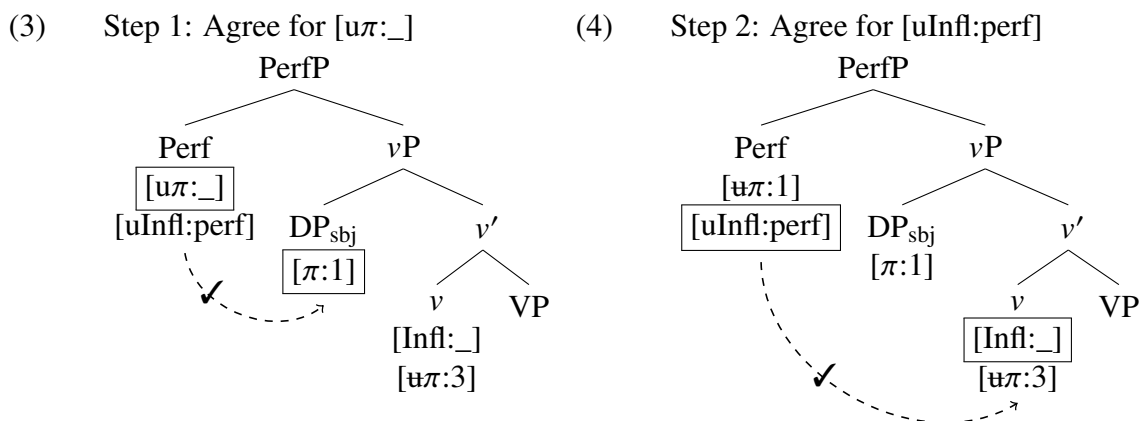
⁴ The symbol π stands for person, # for number, γ for gender, and ϕ for these features together.

is a valued probe of the form $[uInfl:perf]$.⁵ A probe (here marked with the prefix $[u-]$) is any feature that is able to initiate a search operation. A probe can be either unvalued, as is the case for ϕ -probes ($[u\phi:]$), or valued, as case assigners are ($[ucase:acc]$). The valued probe $[uInfl:perf]$ agrees downwards with the matching feature $[Infl:]$ on v . Agree involving already valued probes consists of finding a matching feature of the same type, which can receive a value from the probe if it is unvalued. The goal feature $[Infl:]$ on v acquires the value *perf*, which causes the lexical verb to be spelled out with participle morphology.⁶ I also propose that the head Perf bears an unvalued probe for the person feature $[u\pi:]$, which is responsible for auxiliary selection.⁷ The syntactic operations carried out by the two probes on Perf are represented in (3) and (4).

5 Let me clarify what I consider to be a *probe*. I adopt the original definition proposed by Chomsky (2000): being a probe feature means being uninterpretable, but not necessarily unvalued. The function of Agree is to delete uninterpretable features. I also follow here Pesetsky & Torrego (2007) in assuming that valuation and interpretability are independent conditions. The existence of uninterpretable, valued features is considered by Pesetsky & Torrego (*ibid.*, p. 269). However, they take probes to be interpretable unvalued as well as uninterpretable unvalued features. Differently from Pesetsky & Torrego (*ibid.*), I think that probes can be either valued or unvalued. The crucial characteristic of probes is linked to uninterpretability, as in Chomsky (2000) and differently from Pesetsky & Torrego (2007). Importantly, 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 $[u-]$, means that the feature can trigger an operation and has not done it yet. Hence, I consider uninterpretability not to be a semantic property, but rather a syntactic one.

6 In the perfect construction, the lexical verb is morphologically realized as a past participle, which may also exhibit agreement for ϕ -feature (mainly number and gender). Past participle agreement can be due to different sources, sometimes available at the same time in the very same language, as also proposed for French by Georgi & Stark (2020). Cross-linguistically, past participle agreement may arise because of an edge feature (Italian), a ϕ -probe on v (Neapolitan), a relativized probe on a higher head (Ariellese), a clitic pronoun (Catanzarese). In each of these cases, past participle agreement and auxiliary selection are independent from each other. I refer the reader to Amato (2021) for discussion.

7 In some languages, the auxiliary also depends on number. This can be modeled by means of a different or a more complex probe on Perf, such as $[u\phi:]$ or $[u\pi:], [u\#:]$. Alternatively, the ϕ -features on T may provide this further dependency (cf. section 4 for clarification). More generally, I assume the presence of a π -probe only on those functional heads that show some sensitiveness to the person feature of the arguments. The head involved in the perfect tense is as such: this is clear in those varieties where its Spell-out depends on the person feature of the subject (Ariellese) and in those languages where there is a distinction between reflexive and impersonal versus non-reflexive and non-impersonal argument (Standard Italian). Other periphrastic forms such as the imperfective one (cf. Italian *sto mangiando* ‘I am eating’) are left for future research.



The present derivation illustrates the analysis for a sentence with a transitive verb such as (1-a), characterized by the presence of a DP subject in $Spec, v$. In (3), the head Perf discharges its probe for person $[u\pi: _]$. This targets the highest possible matching goal in its c-command domain, namely the DP_{subj} . Perf successfully copies its person feature. At Spell-out, Perf will be substituted by an allomorph that is inserted in the context of that particular person feature, if there is one in the lexicon. After π -Agree has been carried out (as indicated by the crossed prefix \mathfrak{u}), Perf discharges its second feature [Infl], as shown in (4). $[uInfl: perf]$ targets v , which acquires the value *perf*. Consequently, v will be spelled out as past participle morphology. The configuration in (3)–(4) also occurs with unaccusative predicates, as in (1-e). In fact, the internal argument of an unaccusative verb is promoted to the subject position, and moves to $Spec, v$.⁸ Hence, Perf probes for person the unaccusative object in the same way as it probes the transitive subject in (3).

The present analysis can be applied to the concrete case of Ariellese, presented in section 2. In Ariellese, auxiliary selection is person-driven and the pattern is BBH (cf. example (1)). As I have just said, the head Perf bears the two probes $[u\pi: _]$, $[uInfl: perf]$, which are discharged in this order. As exemplified in (3), the head Perf ends up bearing the person feature of the subject (it being the transitive or the unaccusative subject). The lexical entries are given in (5).

- (5) *Ariellese*
- a. $/\sqrt{HAVE}/ \leftrightarrow Perf[\pi: 3]$
 - b. $/\sqrt{BE}/ \leftrightarrow Perf$ elsewhere

In (5), the π -feature on Perf is realized as root selection (and not as inflection). The elsewhere form is BE, and HAVE is the more specific allomorph, which can only be inserted in the presence of a 3rd person feature on Perf. The resulting distribution is BBH.

One prediction stems from the analysis just outlined: person-driven systems are never sensitive to the person feature of the transitive object. As shown in (3), the person probe on Perf targets the subject and can never reach either v or the transitive object. This is due to minimality: the person probe on Perf must target the highest matching

8 This is consequence of the assumption that every v , including unaccusative v , is a phase (Abels, 2012; Heck, 2016; Legate, 2003; Müller, 2010). If unaccusative v is a phase, the unaccusative object must move to $Spec, v$ in order to remain accessible for the higher case assigner T.

with transitive and unergative verbs (12-a,b), BE with unaccusative predicates (12-c).¹⁰

- (12) a. Maria ha lavato la mela.
 Maria have.PRS.3SG wash.PRTC the apple
 ‘Maria has washed the apple.’
 b. Maria ha lavorato.
 Maria have.PRS.3SG work.PRTC
 ‘Maria has worked.’
 c. Maria è caduta.
 Maria be.PRS.3SG fall.PRTC
 ‘Maria has fallen down.’

Crucially, the features of the arguments also play an important role for the choice of the auxiliary. If the clause contains a reflexive clitic pronoun, the perfect auxiliary is BE. The reflexive clitic can be the direct object of a transitive verb, as in (13-a), or the indirect object of a transitive or unergative verb, as in (13-b).¹¹

- (13) a. Maria si=è lavata.
 Maria REFL.ACC.3SG=be.PRS.3SG wash.PRTC
 ‘Maria has washed herself.’
 b. Maria si=è lavata la mela.
 Maria REFL.DAT.3SG=be.PRS.3SG washed.PRTC the apple
 ‘Maria has washed her apple.’

The dependency of the perfect auxiliary both on the argument structure (cf. (12)) and on the type of arguments (cf. (13)) can be modeled as the result of Agree for the person feature between Perf and the object via v (Amato, 2020, 2021). In Minimalism, the type of argument structure is determined by the syntactic head v . Transitive v assigns accusative case, introduces the external argument and bears a person probe (Chomsky, 2001). Unaccusative v is defective and it does not bear any probe (ibid.). The different features on v (in particular, the presence or absence of a person probe) explain the distribution of the auxiliaries in (12). In order to derive the contrast between HAVE in (12-a) and BE in (13-a,b), Perf must access the person information of a lower argument (the direct or indirect reflexive object). This is achieved if the person probe on Perf agrees with v , which has previously agreed with the object.¹² In other words, Perf ends up targeting

10 Some verbs, such as the motion verb *correre* ‘to run’, may pattern with both classes, depending on some syntactic and semantic factors, as shown by Sorace (2000). I assume that these hybrid verbs are constructed as unergative verbs when they combine with the perfect auxiliary HAVE, and as unaccusative verbs when they combine with BE.

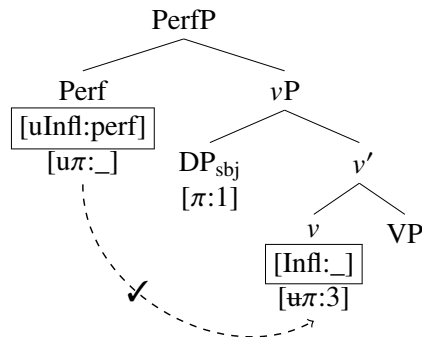
11 Even though an unaccusative analysis has been proposed for direct reflexive clauses as (13-a), this cannot be applied to indirect reflexive clauses as (13-b), which also exhibit an overt non-reflexive direct object. Hence, I reject the unaccusative analysis of reflexive clauses, following de Alencar & Kelling (2005), Alexiadou, Anagnostopoulou, & Schäfer (2015), and Sportiche (2014), among others. I consider the argument structure of reflexive clauses to be transitive.

12 This analysis relies on the assumption that Italian has object Agree, even though this is not visible on the surface. 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. Moreover, the presence of person-related phenomena involving the object, such as the PCC (Person Case

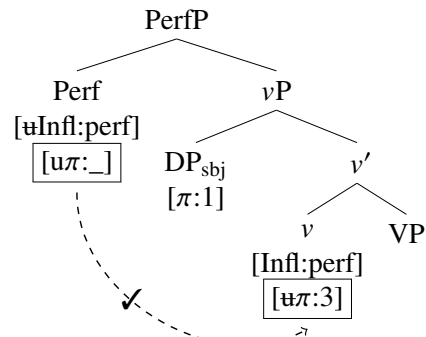
the π -feature of the object as it appears on v . This Agree configuration is enabled by the order of features on Perf $[u\text{Infl:perf}] > [u\pi:_]$ (cf. (11-b)).

The derivation for a transitive clause is given in (14), (15).

(14) Step 1: Agree for $[u\text{Infl:perf}]$



(15) Step 2: Agree for $[u\pi:_]$



In (14), Perf successfully agrees with v for $[\text{Infl}]$. Thereafter, Perf probes for person, as shown in (15). Given the previous operation in (14), Perf can exploit the already established Agree relation between Perf and v , thereby skipping the subject. Hence, Perf also targets v for $[\pi]$.¹³ As shown in (15), auxiliary selection in languages as Italian depends on person Agree between Perf and v , which bears a person feature given a prior Agree relation with the internal argument.

If a valued person feature is present on v (namely, in transitive clauses, where the π -probe on transitive v targets the object), the result on Perf will be a valued person feature as well. The same analysis is also proposed for unergative verbs, assuming that they select a covert cognate object with syntactic features valued as default. If v does not inherently contain any person feature (namely, in unaccusative clauses), then the person probe on Perf remains unvalued. In fact, since unaccusative v is not a probe for the π -feature (Chomsky, 2001), Perf cannot find any matching person feature on v . Therefore, Agree on v , and consequently on Perf, fails. Similarly, if v contains an unvalued person feature (namely, in reflexive clauses), the person probe on Perf remains unvalued, too. In fact, I assume that the reflexive pronoun, which is merged as direct or indirect object, enters the derivation with unvalued ϕ -features and acquires them via binding by the external argument (Heinatz, 2006; Reuland, 2001, 2005). When v probes for person, the reflexive object bears unvalued ϕ -features, because the external argument has not been introduced yet by v . Hence, transitive v fails to copy a person value. Given the derivation in (15), an unvalued person feature on v also determines an unvalued feature on Perf.

To sum up, in transitive/unergative clauses the result is $\text{Perf}[\pi:\alpha]$ (where α rep-

Constraint), may show that there is indeed object Agree in Italian (cf. for instance the analysis of PCC effects by Coon & Keine 2020).

13 Agree for person between Perf and v across the subject is possible because of *Nested Agree* (Amato, 2021), which is a principle on ordered instances of Agree, defined as follows.

- (i) 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 .
 - (a) 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 .
 - (b) 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).

resents any person value), in unaccusative/reflexive clauses Perf[π :_]. The vocabulary entries for Italian are given in (16).

- (16) a. / $\sqrt{\text{HAVE}}$ / \leftrightarrow Perf[π : α]
 b. / $\sqrt{\text{BE}}$ / \leftrightarrow Perf elsewhere

According to these lexical entries, HAVE is inserted anytime Perf has successfully agreed with v . This happens in transitive and unergative clauses. The unmarked BE is inserted when Agree has failed to return a value for the person feature. This is the case of unaccusative and reflexive clauses.

The present analysis derives the whole distribution of auxiliary selection in Italian.¹⁴ It also predicts that there could be languages where the perfect auxiliary depends on specific values of the person feature of the transitive object. In such a language, the auxiliary for the sentence *Maria lo ha lavato* ‘Maria has washed it’ and *Maria ti ha lavato* ‘Maria has washed you’ could be spelled out differently. This would be possible under two conditions: the syntactic derivation must be as in (14)–(15), and the Vocabulary Items must refer to specific values of the person feature, as in (5), and differently from (16). As far as I know, there are no Romance languages of this type. Unfortunately, I do not have any explanation for this gap in the typology and I leave this issue for future research.

4. Mixed systems

There are also languages where the perfect auxiliary follows a person split only in a particular type of argument structure. I call this type of languages *mixed systems*. An example is the variety spoken in Tufillo (Abruzzo). As shown in (17), the person split BBH is only found with transitive and unergative verbs (17-a,b,c), but not with unaccusative verbs (17-d,e,f). In addition, the perfect auxiliary is sensitive to the argument structure only for 3rd person, while 1st and 2nd person show the same auxiliary with every type of verb.

- (17) *Tufillo*
- a. S \textcirc par'læ:tə.
 be.PRS.1SG talk.PRTC
 ‘I have talked’ (transitives, unergatives: BBH)
- b. Si par'læ:tə.
 be.PRS.2SG talk.PRTC

14 The reader may think of an alternative analysis based on the parametric option person-driven vs. argument-structure-driven (where the relevant distinction is between verbs that assign accusative case and verbs that do not), as proposed for instance by D’Alessandro & Roberts (2010). I think that such an approach faces many problems. Firstly, it cannot derive the actual distribution of auxiliaries in argument-structure-driven systems. As shown in (13), transitive predicates require BE with reflexive direct and indirect object, and the same happens with impersonal arguments. Nonetheless, they assign accusative case to their internal argument, as in canonical transitive clause. Secondly, this approach is hard to implement in syntax: at the point where Perf should be sensitive to the accusative status of the predicate, accusative case has already been assigned by v , and this feature on v should not be visible anymore by the higher head Perf. Thirdly, the two systems of auxiliary selection (person-driven and argument-structure-driven) remain completely unrelated, and the analysis of mixed systems is also problematic (cf. section 4).

- c. *ya* *par'la:ɾə.*
have.PRS.3SG talk.PRTC
- d. *Sɔ* *mmə'eutə.*
be.PRS.1SG come.PRTC
'I have come' (unaccusatives: BBB)
- e. *Si* *mmə'eutə.*
be.PRS.2SG come.PRTC
- f. *ɛ* *mmə'eutə.*
be.PRS.3SG come.PRTC

(Manzini & Savoia, 2005, II: 690)

Whenever there is a dependency on the argument structure, even if it is confined to some cells of the paradigms (or to a single cell), auxiliary selection must be argument-structure-driven. In fact, the head Perf must be able to reach the featural information on *v*. Hence, I propose that auxiliary selection in mixed systems is argument-structure-based, rather than person-driven. In addition, it is further constrained by the features of the subject as they appear on the syntactic head T. I adopt here the standard assumption that in Romance languages the head T contains a ϕ -probe that is controlled by the subject. In addition, the head Perf moves to T in order to combine with finite inflection, thereby forming the complex head Perf + T. When the argument-structure-based split is limited to some persons, the vocabulary entries in the lexicon are specified for the person feature of the subject that is present on T after ϕ -Agree.

Let me now present the analysis for the data in (17). I consider auxiliary selection in Tufillo to be argument-structure-driven. The features on the complex head T + Perf are represented in (18).

(18) Complex head Perf + T in argument-structure-based auxiliary selection

- | | |
|---|--|
| <p>(i) Unaccusative, reflexive</p> <div style="text-align: center;"> $\begin{array}{c} \text{T} \\ \diagdown \quad \diagup \\ \text{Perf} \quad \text{T} \\ [\text{u}\pi:_] \quad [\text{u}\phi:\beta] \end{array}$ </div> | <p>(ii) Transitive, unergative</p> <div style="text-align: center;"> $\begin{array}{c} \text{T} \\ \diagdown \quad \diagup \\ \text{Perf} \quad \text{T} \\ [\text{u}\pi:\alpha] \quad [\text{u}\phi:\beta] \end{array}$ </div> |
|---|--|

As briefly explained for Standard Italian in section 3, in argument-structure-based systems the probe on Perf remains unvalued in unaccusative and reflexive clauses, as shown in (18)-(i). 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). As for the T head, this contains a $[\text{u}\phi:_]$ probe that always targets the DP_{subj} in Spec,v . In transitive and unergative clauses, instead, Perf successfully agrees with *v* (which has agreed with the object), while T agrees with the subject. The features on the complex head T + Perf are given in (18)-(ii), where the symbols α and β indicate that the features can be different. Given the syntactic structures in (18), the Tufillo data in (17) can be derived with the following Vocabulary Items.

- (19) *Tufillo*
- a. $/\sqrt{\text{HAVE}}/ \leftrightarrow \text{Perf}[\pi:\alpha] / \text{T}[\pi:3]$
- b. $/\sqrt{\text{BE}}/ \leftrightarrow \text{Perf elsewhere}$

The rule (19-a) states that the head Perf is substituted by the exponent HAVE when it bears a person feature of any value and in the context of a 3rd person feature on the head T.¹⁵ Vocabulary entries such as these in (19) are typical of argument-structure-driven systems (the person feature on Perf is not specified for any particular value), but in addition they refer to a specific person feature on another subpart of the complex head, namely T. Mixed systems are the result of such Vocabulary Items together with the feature ordering [uInfl:perf] > [uπ:_] on Perf (as in argument-structure-driven auxiliary selection).

Further evidence for considering 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 (18)-(i). In person-driven systems, the auxiliary in reflexive clauses is the same as in canonical transitive clauses (cf. for instance Ariellese, examples (6) and (7)). In argument-structure-driven systems, the auxiliary in reflexive clauses is not the same as in transitive clauses (cf. example (13) for Italian). In mixed systems, transitive verbs with reflexive objects pattern as unaccusative verbs, similarly to Italian. As shown in (20), in Tufillo the auxiliary of transitive reflexive verbs is BBB, as with unaccusative verbs.

- (20)
- | | | | | |
|----|------------------------|------------|--------------|-------------------|
| a. | Mə | sə | arra'væ:tə. | |
| | REFL.ACC.1SG | be.PRS.1SG | wash.PRTC.SG | |
| | 'I have washed myself' | | | (reflexives: BBB) |
| b. | Tə | si | arra'væ:tə. | |
| | REFL.ACC.2SG | be.PRS.2SG | wash.PRTC.SG | |
| c. | Ts | ε | arra'væ:tə. | |
| | REFL.ACC.3SG | be.PRS.3SG | wash.PRTC.SG | (ibid., II: 690) |

The data in (20) can be accounted for if in this language auxiliary selection is argument-structure-driven, despite the fact that it may appear to be person-driven.

Note, again, that there are many other possible different distribution of auxiliaries in other languages, as reported by Manzini & Savoia (ibid., II: 728). Some other examples are found in the dialects of Lanciano, Scanno, and Pietransieri (Abruzzo) (Giammarco, 1973; Loporcaro, 2001). In Pietransieri, the distribution of the perfect 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 data are schematized in Table 2.

The vocabulary entries that explain the pattern in Pietransieri are given in (21).

- (21) *Pietransieri*
- | | | |
|----|-------------------------------|-----------------|
| a. | /√HAVE/ ↔ Perf[π:α] / T[#:pl] | |
| b. | /√HAVE/ ↔ Perf[π:α] / T[π:3] | |
| c. | /√HAVE/ ↔ Perf / T[#:pl] | (optional rule) |
| d. | /√BE/ ↔ Perf elsewhere | |

The more specific allomorph HAVE is inserted when Perf has successfully agreed, and in

15 The slash in the rules indicates the local conditioning environment in terms of c-command. The features following the slash are not substituted by the inserted exponent, which spells out only the morpheme preceding the slash.

Table 2: Auxiliary selection in Pietransieri (Loporcaro, 2007, p. 198).

	unaccusatives	transitives, unergatives
1 st sg	B	B
2 nd sg	B	B
3 rd sg	B	H
1 st pl	B~H	H
2 nd pl	B~H	H
3 rd pl	B~H	H

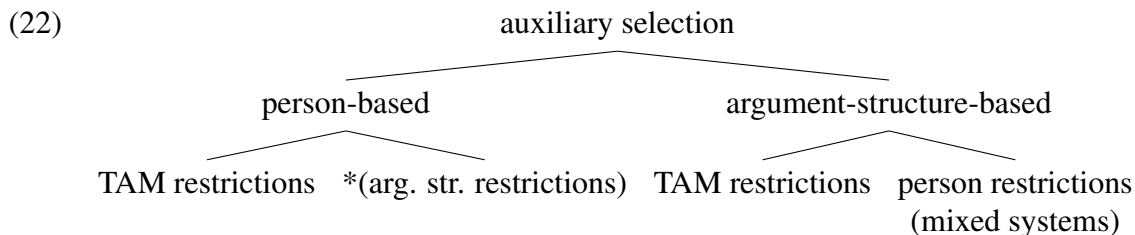
the context of a plural number feature on T (21-a) or of a 3rd person feature on T (21-b). These rules determine the distribution of HAVE with transitive and unergative verbs. The optional presence of HAVE in unaccusative clauses with plural subjects is obtained with the optional rule (21-c): HAVE can optionally be used when T bears a plural number feature, independently of the person feature on Perf.¹⁶ Rule (21-c) is blocked in transitive clauses by the obligatory rule (21-a), which is more specific.

5. Person-driven systems are not restricted by argument structure

We have just seen 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 restrictions, and also temporal, aspectual and modal (TAM) restrictions. In contrast, it has been noticed that person-based systems may be influenced by modal and temporal information, but not by argument structure (Ledgeway, 2019, pp. 352-353). These relations are represented in (22).¹⁷

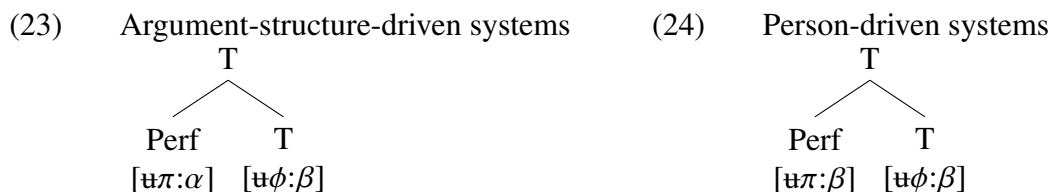
16 As shown in (21), optional alternations are modeled with optional vocabulary entries. Optionality occurs when the speaker has more than one grammar at disposal, which may be the result of diachronic change or language contact. In the specific case above, the speaker has access to two inventories of vocabulary entries: one containing the rule (21-c), and one without it.

17 This setup certainly depends on how empirical data are analyzed. A good example of different categorizations is the case of mixed systems, discussed in section 4. I consider languages such as Tufillo to be argument-structure based systems with further person restrictions, since this approach allows for an explicit analysis and leads to the right predictions (cf. reflexive clauses). However, Loporcaro (2007) treats these languages as person-driven varieties. According to his analysis, it is not true that person-based systems cannot be characterized by further restrictions based on argument structure. Indeed, this is the case of mixed systems. Among all possible different approaches, I present here the descriptive generalizations proposed by Ledgeway (2019) because they are independently predicted by my analysis. In other words, Ledgeway's analysis and mine independently point at the same system, represented in (22). However, the relations described here are not theory-independent, and ultimately need further empirical confirmation.



Importantly, the present analysis provides an explanation for the relations schematized in (22), described by Ledgeway (*ibid.*). In fact, the setup in (22) is expected if the person probe on Perf can exclusively target either the DP_{subj} in Spec,ν , or the head ν . If the DP_{subj} is targeted (i.e., in person-driven systems), the information on ν and on the object is not accessible anymore because of minimality (cf. also discussion above example (6) in section 2). For this reason, argument structure restrictions cannot constrain person-driven systems. In contrast, argument-structure-driven systems may also be sensitive to the features of the subject. If Perf π -agrees with ν (i.e., in argument-structure-driven systems), the information about the DP_{subj} is still available on T, to which Perf head-moves (cf. also section 4).

Let me illustrate this point with more details. I said that the head Perf moves to T, with which it combines in order to get person and number inflection. In (23) and (24), I represent the complex heads in transitive/unergative clauses.



In argument-structure-driven systems, the complex head Perf + T may contain different person features. In (23), Perf agrees with ν (and, consequently, with the object), whereas T agrees with the DP_{subj} . Hence, Perf and T may end up bearing different person features. Similarly, if the verb is unaccusative or reflexive, the person feature on Perf is not valued, whereas T contains the person feature of the subject (the complex head in this case was given in (18)-(i)). At Spell-out, if the Vocabulary Items that can substitute Perf do not refer to the π -feature on T, as in (25), we have a pure argument-structure-based system. Instead, if some of the vocabulary entries must be inserted in the context of a specific π -feature expressed on the head T, as in (26), we have a mixed system.

(25) Argument-structure-based systems (cf. Standard Italian)

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

(26) Mixed systems (cf. Tufillo)

- 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

In person-driven systems (24), the person probe on Perf always finds a π -value on the DP_{subj} in Spec,ν . Since T agrees with the subject as well, the person feature of the DP_{subj}

is independently copied both by Perf and by T. In such a language, auxiliary selection is invariably person-driven, independently of the type of vocabulary entries available. In other words, no distinctions as those represented in (25) and (26) may arise. In fact, given that both T and Perf invariably bears two instances of the same person feature, the context expressed by the rules in (25-a), (26-a) and (26-b) coincides.¹⁸ The person feature on T cannot add any new information for realizing more fine-grained distinctions, even when the vocabulary entries realize specific person values, as in (27).

- (27) Person-driven systems
- 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 (24), T and Perf bear the same person value (because both heads have agreed with the DP_{subj}). The vocabulary entry in (27-a) simply states that the auxiliary HAVE must be inserted when the subject is 3rd person (cf. Ariellese (5-a)). A rule such as (27-b) refers to the same person value as (27-a), but on a different subpart of the complex head. This rule corresponds to the same context of insertion as (27-a). Therefore, (27-b) is redundant. The condition of insertion of an entry such as (27-c) are never met, since Perf and T always bear the same value for the feature $[\pi]$. Instead, the status of (27-d) with respect to (27-a) is quite different. The Vocabulary Items in (27-d) and (27-a) are in competition, since they refer to two subparts of the same context ($\text{Perf}[\pi:3] / \text{T}[\pi:3]$), but they map it to two different allomorphs. Interestingly, the competition between two rules such as (27-a) and (27-d) gives rise to free variation. The result of a lexicon such as (27) is a person-driven system with optionality according to some specific person values, without any argument structure restrictions. This is a welcome result, since free variation is actually widely attested among person-driven systems. For example, the auxiliary distribution that results from the lexicon in (27) (B B B~H) is found for plural persons in Poggio Imperiale, Castelpetroso, Gallo Matese (Manzini & Savoia, 2005, II: 728).

To conclude, person-driven systems can never be affected by any restrictions based on the argument structure. In addition, optional alternations can be modeled with lexical entries that map the same context of insertion (once specified for a person value on Perf, once specified for Perf in the context of a person value on T) to different exponents.¹⁹

18 It is noteworthy that a language where auxiliary selection is person-driven (i.e., the feature ordering on Perf is $[\text{u}\pi: _] > [\text{uInfl:perf}]$) and where the lexicon is as in (25) turns out to be a language with a single auxiliary, such as Spanish or many Sicilian dialects. In fact, in person-driven systems Agree on Perf always succeeds because it targets the subject. If the lexical entry for one of the allomorph is inserted anytime that Agree succeeds (as in (25-a)), then this exponent will always be inserted. Hence, a language with a single auxiliary can be modeled as a person-driven system with a lexicon such as (25). Alternatively, it can result from any type of auxiliary selection as long as its lexicon only contains a single vocabulary entry for Perf.

19 Optionality in argument-structure-driven systems and in mixed systems can be modeled in a similar way. In section 4, I have provided an example for the variety spoken in Pietransieri. For this language, the alternation B~H with plural persons for unaccusative verbs is modeled by means of an optional vocabulary entry (21-c) that is in competition with the elsewhere form (21-d). The

6. Concluding remarks

In this paper, I have addressed the cross-linguistic variation for auxiliary selection in Italo-Romance. I have distinguished two main types of auxiliary selection: person-driven, which depends on the features of the subject without any influence of the type of clause, and argument-structure-based, where the determining factor is the type of predicate. I have proposed that these two systems are the result of Agree for the person feature. The cross-linguistic variation can be accounted for with a single syntactic parameter (the ordering of the features on Perf), and with different inventories of vocabulary entries.

I have also shown that those languages where the person splits are influenced by the argument structure (mixed systems) are argument-structure-driven systems, although at first sight they might seem person-driven systems. The more fine-grained distinctions dependent on person are given by the person feature of the subject, which is located on T. Hence, the apparently very different systems of Standard Italian and of person-driven Italo-Romance varieties are not as different as they seem. Not only is auxiliary selection in Italian Agree for person in the same way as is Agree for person in person-driven systems, but also many alleged person-driven varieties are indeed argument-structure-based systems.

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rule (21-c) must be optional only because it competes with the elsewhere form. In the case of two equally specific rules, as (27-a) and (27-d), the two rules do not need to be optional. Regardless of these details, the rationale behind optional alternations is the same both in person-driven and in argument-structure-based systems: competition between different vocabulary entries.

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