

---

# *On the role of person in the mapping of syntactic features onto their interpretable counterparts*

---

## *Abstract*

This paper argues that the traditional notion of person feature refers to two fundamentally distinct objects. One is a feature present in narrow syntax, the other one is an object created as part of labelling by the syntax-semantics interface. The latter one arises via a formal association of the syntactic feature with a semantic index. Crucially, the interface object can give rise to new values of presuppositional  $\phi$ -features (modulo Maximize Presupposition). In turn, we can identify two classes of number and gender features that differ in their locality properties and their semantic interpretability. Gender and number valued from the lexicon is present throughout the narrow syntax derivation and is not semantically interpreted. Gender and number introduced via person at the syntax-semantics interface appear only in larger syntactic domains (they become available only after a phase has been labelled by the syntax-semantics interface) and are always semantically interpreted (via their presuppositional content). The paper thus contributes to our understanding of mapping of narrow-syntax features onto the interfaces, division of labour among the modules and advances our understanding of some puzzling properties of person features cross-linguistically.

**Keywords:** person, syntax-semantic interface,  $\phi$ -features, locality, agreement

## *Résumé*

NEEDS TO BE TRANSLATED

**Mots-clés :** keyword 1, keyword 2, keyword 3

## **1. INTRODUCTION**

Person features play a role in clearly narrow-syntax processes, for instance in Case checking (e.g., [Anagnostopoulou 2003](#); [Rezac 2004](#)). Yet, person feature interacts

---

left out for anonymity

with animacy and the feature itself is often characterized as [ $\pm$ participant], [ $\pm$ author] etc., a characterization that suggests pragmatic or semantic features instead of prima facia narrow-syntax notions (Ormazabal and Romero, 1998; Nevins, 2007; Lochbihler and Oxford, 2015; Wiltschko and Ritter, 2015; Harbour, 2016). Even more strikingly, Harbour (2016), an empirically rich account of cross-linguistic variation in the domain of person, argues for person being subject to a semantic rule of composition. In addition, there is an ongoing disagreement whether 3rd person is a valued feature or an absence of a person feature altogether. Strikingly, upon a closer examination, authors who argue for person being syntactically absent (e.g., Anagnostopoulou 2005; Bobaljik 2008; Kayne 2010) only consider morpho-syntactic phenomena. In contrast, authors who argue for 3rd person having a valued person counterpart, base their argument on phenomena that target properties that interact with interpretive notions, such as animacy (e.g., Ormazabal and Romero 1998; Nevins 2007; Lochbihler and Oxford 2015).

This paper provides a programmatic argument that the disagreement in the literature has a principled underpinning. I argue that the representation of the features we identify as person changes between narrow syntax and the syntax-semantics interface. The tests give different results because they target different modules of the grammar and in turn different grammatical objects. The surprising behaviour that has become subject of much recent work on the nature of person becomes less exceptional once we take this idea seriously.

The idea that the notion of person corresponds to two different entities is not entirely new. Already Jespersen (1924) argues for the empirical necessity to distinguish between ‘notional’ and ‘grammatical’ person, and the core insights underlies much recent work on the nature of interpretability of  $\phi$ -features, as in Wechsler and Zlatić (2000), or formal and meaning dissociation in so called imposters (e.g., Collins and Postal 2012). This paper advances this core insight by providing a formal account of

why and how this dissociation arises and what diagnostics can be used to separate the two types of representation.

Several authors have recently proposed that the person feature is a special feature in that it requires ‘licensing’ at the syntax-semantics interface and that the licensing is modulated by a phase head (e.g., [Ritter and Wiltschko 2014](#); [Zubizarreta and Pancheva 2017](#); [Pancheva and Zubizarreta 2017](#); [Kučerová to appear](#)). Yet, it is not clear what ‘licensing’ means and why and how it arises. The idea pursued here is that person feature plays a special role in transferring phases to the syntax-semantics interface, more precisely within the process of labelling, i.e., identifying a phase with a set of features for the purposes of further syntactic derivation and externalization (e.g., [Chomsky 1995, 2000, 2013, 2015](#)).

There is a methodological problem in investigating person at the syntax-semantics interface. Under the Y-model we expect narrow-syntax features to undergo alternations not only when sent to the syntax-morphology interface (in the sense of the Distributed Morphology framework of [Halle and Marantz 1993](#)), but also when they are sent to the syntax-semantics interface. However, since we base our empirical generalizations on the morphological realizations of the person feature, we cannot a priori tell whether the relevant morphological realization is directly based on the narrow-syntax version of the person feature or whether the morphology might realize the person feature already licensed by the syntax-semantics interface.

If spell-out is a process that sends the complement of a phase head to the syntax-morphology interface, then it is theoretically plausible that when the label of such a phase is sent to the syntax-morphology interface as part of the next spell-out cycle, the features of the label might have or might not have yet be licensed by the syntax-semantics interface. We thus need precise diagnostics to target narrow syntax versus syntax-semantics interface. We also need to answer the question of what type of empirical phenomena lend themselves to an investigation of person at the interfaces.

It follows from the the Y-model and the theory of spell-out by phase, that for a feature to be licensed by the syntax-semantics interface, the licensing must happen only at the point of transfer as part of labelling by the interface (Narita, 2011; Chomsky, 2013, 2015). Consequently, we expect different locality properties of narrow-syntax person versus semantically licensed person. Namely, narrow-syntax person is expected to be available for feature checking throughout the narrow-syntax derivation. In contrast, we expect to see effects of semantically licensed person to coincide with phases and structures larger than a phase but never in a structure smaller than a phase.

As for the nature of ‘semantic licensing’, I follow Kučerová (to appear) in that there is a formal connection between person and semantic index (for a related insight see, e.g. Longobardi 2008; Landau 2010; Sudo 2012; note also a long tradition of associating D with a referential index, either in terms of D being a head that changes a predicate-denoting NP into an individual-denoting structure, or being the source of a referential index itself, e.g., Williams 1981; Higginbotham 1985; Grimshaw 1990; Wiltschko 1998; Winter 2000; Borer 2005; Longobardi 2008; Landau 2010). Thus, if all DPs are to be associated with a semantic index at some point of the derivation, there must be a feature in the DP that facilitates such an association. Since semantic indices are *prima facie* semantic objects we do not expect them to be present in narrow syntax. Yet, they somehow must be formally associated with a narrow-syntax representation. I argue that semantic licensing of person does exactly this, i.e., person as a syntactic feature gets associated with a semantic index at transfer.

Once a person feature is semantically licensed, i.e., associated with a semantic index, its properties can no longer be distinguished from those of the corresponding index. Consequently, we expect domains of relations based on semantic index to coincide with semantic licensing of person. Three empirical domains immediately offer themselves to such an investigation: First, the domain of interpretable gender (because of gender presuppositions tied to person features, e.g., Heim 2008; Sudo

2012); second, semantically based number (because of the role of semantic indices in semantic plurality, e.g., [Link 1983](#); [Rullmann 2003](#)); third, binding and coreference (because of the role of coindexation, e.g., [Heim 1998](#); [Roelofsen 2008, 2011](#)). Crucially, although these three phenomena clearly have a semantic-licensing component, they have a narrow-syntax counterpart: semantically based gender and number can be a goal of syntactic agree, as in agreement with coordinations; as for binding, although binding requires some form of LF licensing, it is based on narrow-syntax representation (c-command).

If this logic is correct, the current proposal makes a specific prediction about cross-linguistic variation. If we assume that cross-linguistic variation is localized at the level of features (the so-called Borer-Chomsky conjecture), it follows that a cross-linguistic variation in person licensing is expected to affect all three domains, i.e., interpretable gender, number and binding, simultaneously.

Section 2 discusses the proposed model of mapping narrow syntax features onto the interfaces in more technical details. Section 3 discusses several case studies that support the theoretical distinction between the person feature as a narrow-syntax object and semantically licensed person, as an object that arises at the syntax-semantics interface via an association of syntactic person feature with a semantic index. Section 4 addresses the question of cross-linguistic variation and discusses some open questions the proposal raises.

## 2. $\phi$ -FEATURES AT THE INTERFACES: STEP-BY-STEP

Let us start by outlining some basic assumptions about the nature of narrow-syntax derivations and spell-out in order to have a concrete model against which to discuss the data from the rest of this section. The theoretical model will also help with identifying features and domains which we expect to be relevant to our discussion.

I assume that narrow-syntax  $\phi$ -features are strictly uninterpretable. Interpretive effects arise only at the syntax-semantic interface as part of person licensing during labelling and transfer. The logic is parallel to that for morphological realization of narrow-syntax structures: narrow-syntax features do not come with a diacritic as to whether they are going to be morphologically realized. Instead, morphological realization is determined by the syntax-morphology interface.

As for their valuation,  $\phi$ -features come to the derivation either valued from the lexicon or unvalued. If they come unvalued and if there is a matching valued feature, they get valued by agree within narrow syntax. If and only if a  $\phi$ -feature remains unvalued in narrow-syntax because there is no matching feature from the lexicon, such a feature can be valued at the syntax-semantic interface. The latter is what has been termed valuation from the context (e.g., [Steriopo and Wiltschko 2010](#)). Consequently, we expect to see semantic feature valuation to arise only at the phase level, while syntactic valuation can take place in a structurally smaller domain.

This theoretical distinction in feature valuation comes with a methodological caveat. Features ‘visible’ in the morpho-phonological realization, i.e., the only representation we have a direct access to, can be based on three distinct sources. Morpho-phonological realization can be based (a) on mapping of syntactically valued features, (b) on mapping of semantically enriched features, or (c) it can be a morphological default (last resort) of unvalued syntactic features.

If a feature gets valued within narrow syntax we do not expect to see any interesting interactions in the corresponding minimal spell-out domain. However, if a feature is not valued within narrow syntax, there are two possible outputs: a morphological default and a feature enriched by the syntax-semantic interface. I follow [Kučerová \(to appear\)](#) in that both of these options can be morphologically realized. She argues that morphology can either reflect a minimal spell-out domain, i.e., the complement of a phase head spelled-out after narrow-syntax operations have been completed, or

it can reflect a transferred phase, i.e., a phase that has been minimally searched by the syntax-semantics interface (CI) and in turn labelled.

Introducing a derivational ambiguity of this sort might easily lead to overgeneration. Thus we must ensure the model is sufficiently restricted. The first restriction comes from the primacy of syntax, i.e., if a feature can be valued from narrow syntax, it must be valued. In turn we expect that the proposed morphological duality should be limited to a fairly small number of cases. Crucially, the semantic enrichment of unvalued features comes with its own restrictions. I follow Heim (1991) in that morphological realization is modulated by the Maximize Presupposition principle. The principle says that if there is a grammatical form that morphologically marks presuppositions satisfied in the given context, the presuppositional forms must be used. In turn, only presuppositional features can affect morphological output.

This paper is concerned with person, as the only syntactic feature from the  $\phi$ -feature set that requires licensing by the syntax-semantics interface. That is to say, person is a narrow-syntax feature that gets associated with a semantic index. In turn, only presuppositional features associated with person within a semantic index can be contextually enriched. Next section discusses several case studies that demonstrate such a semantic enrichment and its locality domains for gender and number.

### 3. CASE STUDIES

#### 3.1 Locality domains in interpretable gender in Italian

Standard Italian has a class of grammatically masculine nouns of professions that were traditionally performed by men but are increasingly performed by females, such as *chirurgo* ‘surgeon’ or *avvocato* ‘lawyer’. In turn, these nouns are in the process of changing their grammatical gender representation. More precisely, as argued in Kučerová (to appear), they shift from having a grammatical masculine gender assigned from the lexicon to a minimal nominal representation without a valued

8 PERSON AT THE INTERFACE

gender feature. This minimal representation then allows a larger level of flexibility with respect to contextually assigned gender.

Let us turn to the data. If such a noun denotes a male referent, agreement with such a noun is strictly masculine, as seen in (1).

- (1) il    chirurg-o   è    andat-o  
      the.M surgeon.M has gone.M  
      ‘the (male) surgeon is gone’

In contrast, if such a noun denotes a female referent, native speakers accept three distinct agreement patterns, exemplified in (2).

- (2) a. la    chirurg-a   è    andat-a  
      the[F] surgeon-[F] has gone-[F]  
      b. la    chirurgo   è    andat-a  
      the.[F] surgeon has gone-[F]  
      c. il    chirurgo   è    andat-a  
      the.M surgeon has gone-[F]  
      ‘the female surgeon is gone’

The pattern in (2-a) is the expected one. Here, we have a noun that has fully switched to a grammatically feminine gender. The switch is visible already in the nominal form itself. The vocalic ending -a, in contrast to the original masculine -o, indicates a gender-related switch attested in so called mating nouns (Harris, 1991), such as *bambino* ‘baby’ and *bambina* ‘baby girl’. Consequently, all agreeing elements both within the extended nominal projection and within the predicate display feminine agreement.

The patterns in (2-b) and (2-c) are more surprising. Here, the noun itself does not carry a morphological feminine marker. Yet, it triggers feminine agreement. In (2-b) the agreement is feminine throughout. One could thus argue that the final -o on the noun is not a gender marker but a class (declension) marker, and in turn the



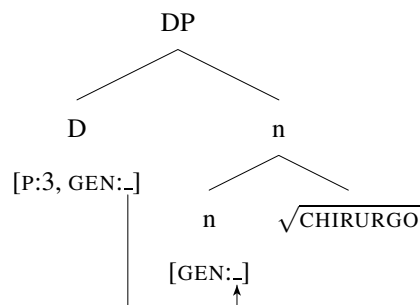
noun despite its morphological appearance is grammatically feminine. The feminine agreement is then a regular agreement with this grammatical gender feature.

Under this account, the pattern in (2-c) is a mystery. For the predicate to agree in feminine, there must be a feminine feature on the goal, namely, on the DP. Yet, the determiner itself is masculine.

I argue instead that the pattern results from a syntactically unvalued gender feature that gets its value only from the syntax-semantics interface. If the DP is spelled-out before the DP is labeled by the interface, the unvalued feature on D gets realized as morphological default - which in Italian is masculine. If, however, the DP is spelled-out only after it has been labelled by the syntax-semantics interface, the determiner is morphologically feminine.

Let us go over the derivations in more detail. I assume that D is merged as a bundle of unvalued  $\phi$ -feature and valued person. Since this is a noun undergoing a shift in its grammatical representation from grammatically masculine to a genderless noun, the root and its corresponding nominalizer (roughly, nP) do not come with a valued gender from the lexicon. Consequently, when D probes for matching  $\phi$ -features, there is no gender feature to value the gender feature on D.

(3) Feature distribution from the lexicon & matching:

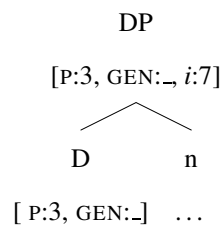


If such a DP gets spelled-out before it is labelled by the syntax-semantics interface, morphology receives an unvalued gender feature as its input. Since gender must be

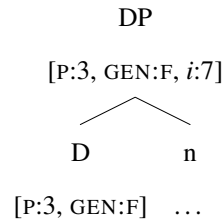
realized on Italian determiners, the system realizes the unvalued gender feature as morphological default, i.e., masculine (Thornton, 2001), but that the morphological realization in and of itself does not yield a valuation of the syntactic feature in the label. If, however, the DP is sent to morphology after it has been labelled by the syntax-semantics interface, the unvalued feature can be enriched by presuppositional features associated with the corresponding semantic index. First, syntactic features accessible by minimal search are added to the label. This includes a person feature. In the next step, this person feature is associated with a corresponding semantic index. Technically, a semantic index is a variable to be interpreted by an assignment function (Heim and Kratzer, 1998). More precisely, a semantic index is a complex structure (Minor, 2011; Sudo, 2012; Podobryaev, 2017) that contains a reference to presuppositional  $\phi$ -features. If there is an unvalued  $\phi$ -feature associated with the person feature in the label, such an unvalued feature can get enriched by the feature indices within the semantic index. Crucially, this enrichment is licensed only if it is licensed by the Maximize presupposition principle. In turn, morphology realizes the semantically enriched label, and the determiner is morphologically realized as feminine.

(4) Semantic enrichment of the DP label:

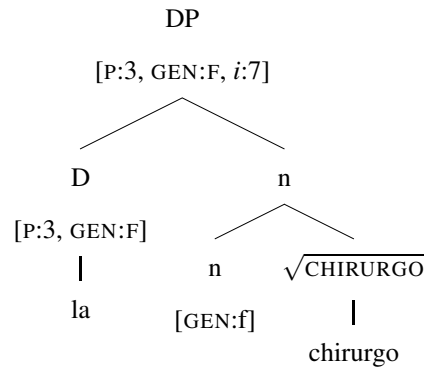
- a. Labelling and licensing of person by the syntax-semantics interface:



- b. Maximize Presupposition-driven gender valuation:



- c. Automatic feature valuation and morphological output:



We have successfully derived the two agreement patterns within a DP. The question is why the agreement with the predicate is uniformly feminine. I argue that a DP can become a goal for syntactic agree only if it has been fully labelled, including labelling by the syntax-semantics interface (see [Narita 2011](#) for an independent argument that some narrow-syntax operations require CI-labelled objects). In turn, the valuation of the gender feature on the predicate takes place only after the DP label has been semantically enriched. Consequently, the predicate agreement is uniformly feminine, irrespective of the morphological realization of the determiner.

The dual agreement pattern observed in (2-b) and (2-c) thus results from an interaction of two properties: no gender feature valuation takes place in narrow syntax and masculine is the morphological default, instead of being a realization of a valued

feature. The account makes a clear prediction: a local agreement optionality of the sort attested within the extended nominal projection in (2-b)–(2-c) is possible only if the semantically enriched value is not the same as the morphological default for the given feature. That is to say, the proposal predicts that morphologically feminine nouns denoting a male referent cannot exhibit a dual agreement pattern. The reason is that the morphologically feminine agreement within an extended nominal projection cannot result from a morphological default of an unvalued syntactic gender feature. Instead, the gender feature must have been valued in narrow syntax. Once the gender feature is valued in the syntax, the syntax-semantics interface cannot rewrite the valued feature in the DP label. Consequently, feminine nouns must agree in feminine in all local syntactic environments even if they denote a male referent. This prediction is borne out. In Italian, grammatically feminine nouns such as *guida* ‘guide’ or *guardia* ‘guard’ obligatorily trigger feminine agreement on predicates, irrespective of the gender of their referent, as demonstrated in (5) (modelled after Ferrari-Bridgers 2007).

- (5) La brava guarda si e’persa nel bosco  
 the good guard.<sub>[F]</sub> her/him lost.<sub>[F]</sub> in the woods  
 ‘The guard lost his/her way in the forest.’

In this section, we have seen an example of a gender interaction mediated by a semantically licensed person at the syntax-semantics interface. Gender realization attested within the DP phase was always based on valued narrow-syntax features or resulted from default morphological realization. In contrast, contextually driven gender valuation is present only once the phase is fully labelled. This empirical pattern supports the proposed model of grammar architecture in which person starts its life in the narrow syntax module and is independent of other  $\phi$ -features. But when it gets semantically licensed by the syntax-semantics interface, presuppositional  $\phi$ -features can be derived from the licensed person feature, i.e., a person feature associated

with a semantic index. This being said, the pattern is quite simple and could have arisen via other derivational means. The remainder of this section investigates more complex interactions where other theories fall short.

### 3.2 Locality domains of computing semantic features of a DP coordination

The previous section established our method of investigation. We expect to find interactions in the domain of person and its derived presuppositional  $\phi$ -features only if the relevant feature cannot be valued in narrow syntax. This can happen either if there is no valued counterpart in the relevant locality domain or, as we will see in this subsection, if the features in the label must be established by the syntax-semantics interface for an independent reason.

Coordinated DPs cross-linguistically tend to trigger plural agreement even if both conjuncts are grammatically singular. The plural feature thus must be derived during the derivation, instead of being supplied from the lexicon. Since agree can only match and value features, the plural number feature cannot be derived by agree in narrow syntax. Note that even under multiple-agree approaches (e.g., [Hiraiwa 2005](#)), the goals must match in their value; agree never composes new values. There is indeed a rather strong evidence that the plural of coordination is always semantically based, i.e., the plural corresponds to semantic plurality as a sum of individuals ([Munn, 1993](#); [Bošković, 2009b](#); [Bhatt and Walkow, 2013](#)).

What does it mean for our investigation of person? As the example in (6) demonstrates, in order to know whether a coordination such as ‘his best friend and editor’ triggers plural or singular agreement, the system must know the ‘identity’ of the individuals in the coordination. More precisely, each conjunct needs to be associated with a semantic index. If the indices are equal, the agreement is singular. If the indices are distinct, the agreement is plural.

- (6) a. his best friend<sub>*i*</sub>; and editor<sub>*j*</sub> **is** by his bedside  $i = j$

- b. his best friend<sub>*i*</sub> and editor<sub>*j*</sub> **are** by his bedside *i* ≠ *j*

Consequently, if a coordination label contains a plural number feature, the coordination must have been labelled by the syntax-semantics interface. If it wasn't labelled, the person features have not been semantically licensed yet. Thus, if we have a language in which agreement with coordination as a semantic plurality can be either singular or plural, we can use the plural agreement as a derivational ‘time marker’. That is to say, a singular agreement should be associated only with coordinations that have not been labelled by the syntax-semantics interface yet, while plural is an indication of a labelling by the syntax-semantics interface. Czech is a language that lends itself to such an investigation.

### 3.3 Prediction I: Agreement within a coordination

The core assumption here is that a coordination phrase is labelled as plural only if it has been labelled by the syntax-semantics interface, the reason being that narrow syntax cannot compose two singular features into a plural feature (at least not by the operation of agree which can only match and value within the established matching link). Consequently, plural feature in the label of a coordination phrase must be a result of labeling of the phrase by the syntax-semantics interface. The plural itself is derived from a coordination of semantic indices associated with a person feature with each of the conjuncts.

If the plural feature arises only when the label is processed by the syntax-semantics interface, the plural feature is not available to any agree relation that takes place before the phase is completed. In turn, we predict that only elements probing after the phase is transferred can reflect the interface enriched value, i.e., can agree in plural. In contrast, elements merged within the phase, i.e., prior the labelling by the interface, such as adjectival adjuncts and determiners, can agree only with one of the adjuncts but never with the whole coordination. The prediction is borne out, for

instance, in Czech. As the example in (7) demonstrates, adjectival adjuncts must agree with the closest adjunct, irrespective of whether they modify only the adjunct they agree with or the whole coordination.

- (7) \*mladí/ mladý muž a žena  
 young.M.PL/ young.M.SG man.M.SG and woman.F.SG  
 ‘a young man and a young woman’ or ‘a young man and a woman’

Similarly, determiners that semantically require plurality, such as *oba* ‘both’, cannot be merged within a coordination phrase either, as demonstrated by (8).

- (8) \*oba/ \*obě kočka a kotě  
 both.M/ both.F/N.PL cat.F.SG and kitten.N.SG  
 Intended: ‘both cat and kitten’

These two patterns are unexpected under theories that assume that syntax can probe for two goals and compose the plural number value directly from two singular probes. In contrast, the pattern is predicted under the theory proposed here, i.e., a theory in which plurality is based on semantic indices associated with person features and available only after the coordination phrase has been labelled by the syntax-semantics interface.

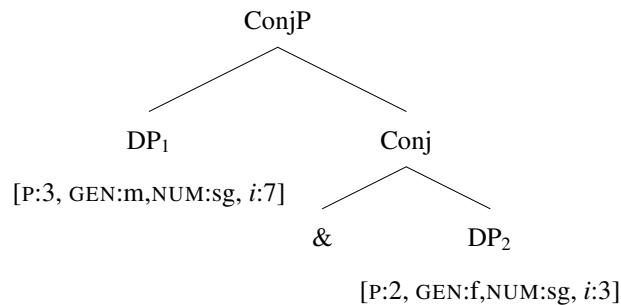
### 3.4 Prediction II: Features of a labeled a coordination

Let us unpack how exactly the labelling at the level of the coordination phrase works. For the coordination phrase to be labelled, each of the conjunct must be labelled by the syntax-semantics interface. The reason is that if the overall coordination refers to a plurality of indices, the individual conjuncts must be already associated with individual indices. For concreteness, let us assume a structure with two DP conjuncts and  $\phi$ -features as indicated in the tree in (9).

16

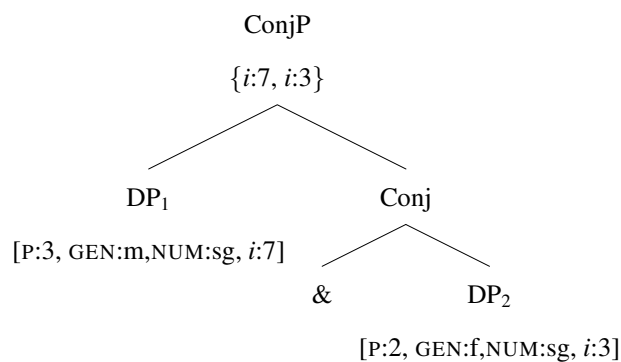
PERSON AT THE INTERFACE

(9)



If a label needs to be uniquely labelled, it is not obvious what features project to the label from narrow syntax as the value of relevant features do not match (here, person and gender), and if they match, projecting the value of the feature itself would give us a wrong result (number as singular instead of plural). I argue instead that the label of the coordination is solely based on the indices. The coordination head projects a set-forming feature (for instance, a joiner in the sense of Szabolcsi 2015). This syntactic feature becomes part of the label but it needs to be licensed by the syntax-semantics interface (in a fashion parallel to a person feature). As part of this licensing, the set-forming feature searches for locally accessible semantic indices, and in turn, adds them to the label as part of a set formed by the joiner. The resulting structure is as in (10).

(10)





As I argued in section 3.1, a semantic index can be enriched by presuppositional  $\phi$ -features, based on the person features associated with the index. Such a presuppositional  $\phi$ -feature is then morphologically realized modulo the Maximize Presupposition principle and it can value unvalued  $\phi$ -features as part of an agree chain as well. As for the coordination label, the relevant  $\phi$ -feature is plural number feature.

Other  $\phi$ -features might be associated with a semantic index as well. In section 3.1 the relevant feature was gender. As we saw, the gender feature became morphologically visible only if the gender feature in the label was not valued from syntax. Thus there was a contrast between morphologically masculine nouns that might have but didn't have to be syntactically valued (because masculine is a morphological default in Italian) and feminine nouns that must have had their gender feature valued in syntax. Thus nouns like *guarda* ‘guard’ trigger feminine agreement even if they denote a male.

I argue that the fact that the presuppositional feature is still part of the corresponding semantic index even if it is not morphologically realized on the DP itself (because of primacy of features valued in narrow syntax). If that is the case we expect that such a presuppositional feature is detectable in the label of a coordination. The reason is that the label cannot have a valued gender feature from syntax. If there is a gender feature in the label it must be derived as a presuppositional feature from the semantic index.

Concretely, if an Italian noun that denotes a male comes from the lexicon with a grammatical feminine feature, such a noun cannot trigger masculine agreement locally, e.g., on the predicate. This is correct, as we have seen in (5). However, if such a noun is embedded in a coordination, the presuppositional gender feature, here masculine, becomes part of the label because of its association with the semantic index in the label. In turn, we expect a predicate agreement with such a coordination

to treat the conjunct as masculine, not grammatically feminine. If, however, such a noun denotes a female, the agreement is predicted to treat the noun as feminine. Both predictions are borne out, as witnessed by (11). Here, the predicate agreement is feminine if both conjuncts denote females, as in (11-a), but it is masculine if the noun ‘guardia’ is interpreted as male, as in (11-b).

- (11) a. La guardia e sua sorella sono andate al cinema sta  
the guard.F and self sister have gone.F.PL to-the movies this  
sera  
evening  
‘The guard and her sister went to the movies tonight.’
- b. La guardia e sua sorella son andati al cinema sta  
the guard.F and self sister have gone.M.PL to-the movies this  
sera  
evening  
‘The guard and his sister went to the movies tonight.’

[adapted from [Ferrari-Bridgers \(2007, 151, \(4\)\)](#)]

Note that for reasons of space, this paper does not engage in a careful comparison with existing proposals on gender, as in, e.g., [Pesetsky \(2013\)](#); [Kramer \(2015\)](#). These proposals introduce two distinct gender features on distinct functional heads within the same extended nominal projections. In turn, they cannot account for the connection between locality domains, spell-out and switched in the gender agreement of the sort seen in (11) and for the coordination data discussed in the remainder of this section.

### 3.5 Prediction III: Agreement with a coordination

We have seen in section 3.3 that plural number is not part of the coordination phrase label before the phrase is labelled by the syntax-semantics interface. The relevant cases considered agreeing elements before the coordination phrase was completed. In turn, it was not possible for the phrase to be fully labelled. The question is what

the present proposal predicts for cases in which the phrase is syntactically complete. As we have seen in section 3.1 syntactic completeness does not necessarily coincide with a phrase being labelled by the syntax-semantics interface. In fact, as we have seen there is a derivational temporal window during which a phrase might have but did not have to be labelled by the syntax-semantics interface. If the current proposal is on the right, we expect to see agreement optionality with coordinations as well. Further, we predict that the optionality should be restricted. More precisely, we expect to see optionality only if the relevant agree relation could have taken place before the phrase - here a coordination phrase - was labelled by the syntax-semantics interface. The predictions are borne out in Czech.

As we see in (12), predicate agreement with coordination in Czech is sensitive to the syntactic position of the coordination phrase. If the coordination phrase is in its base-generated position (spec,vP), as in (12-a), the predicate can either agree with the first conjunct, or it can agree in plural with the whole coordination. In contrast, if the coordination phrase internally merges as spec,TP, the predicate agreement must be plural, as in (12-b).

- (12) a. Přišel/ přišli Petr a Marie.  
           came.M.SG/ came.PL Petr.M and Marie.M
- b. Petr a Marie \*přišel/ přišli.  
           Petr.M and Marie.M came.M.SG/ came.PL  
           ‘Peter and Mary arrived.’

I argue that this pattern follows from the current proposal. When the coordination phrase is merged in its base-generated position, it is sufficient for the label to contain only features projected from narrow syntax. In turn, the plural number feature (or any other number feature for that matter) is not part of the coordination phrase label. When predicate probes for a matching number feature, there is no matching feature in the label of the coordination phrase. The probe continues probing. The

next closest probe is the gender feature in the label of the structurally higher DP. The resulting agreement is singular.

The coordination phrase, however, might have already been labelled by the syntax-semantics interface. If it has, the plural number feature derived from the set of indices in the label becomes the closest goal. In turn, the resulting agreement is plural.

I argue that for a phase to be internally merged, it must have been fully labelled, including having been labelled by the syntax-semantics interface. Thus, when the coordination phrase raises to the spec,TP, the label of the coordination phrase contains the derived plural feature. In turn, only plural agreement is possible.

The proposal makes a related prediction. The difference between (12-a) and (12-b) does not lie in the linear order, nor does it lie in different hierarchical relations. The only relevant factor is whether the coordination phrase must have been labelled by the syntax-semantics interface. If internal merge enforces labelling by the syntax-semantics interface, we expect that a coordination phrase should obligatorily agree in plural whenever it has been internally merged. The plural agreement should be obligatory even if the coordination phrase linearly follows and is c-commanded by the agreeing predicate. This prediction is borne out, for example, when a coordination phrase is the head of an internally headed relative clause. Since such a coordination phrase must have undergone internal merge, the phrase must have been labelled by the syntax-semantics interface. In turn, as can be seen in (13), predicate agreement with such a coordination phrase must be plural.

- (13) \*Přišel/ přišli chlapec a dívka, co je pozvala Marie.  
came.M.SG/ came.PL boy.M and girl.M what them invited Marie  
'A boy and a girl that were invited by Marie arrived.'

To summarize, we have seen in this section a rather complex set of interactions of number and gender. I have argued that the interactions follow from a model of the

grammar architecture in which person feature gets associated with a semantic index as part of labelling by the syntax-semantics interface. I have further proposed, following existing literature on presuppositional  $\phi$ -features, that once a person is associated with a semantic index, such an index can be enriched by presuppositional  $\phi$ -features. Such an enriched semantic index can in principle contribute to morphological realization and to agreement. However, this may happen only if corresponding features have not already been projected to the label within narrow syntax. If there is such a valued feature from narrow syntax, the presuppositional feature cannot be detected in the minimal local domain of the label but it can contribute value to a higher label lacking such a feature.

#### 4. OPENED QUESTIONS AND CROSS-LINGUISTIC VARIATION

Section 3 explores several case studies that demonstrated rather intricate interactions of gender features present in narrow syntax and gender features derived during labelling of nominal phase by the syntax-semantics interface. The person feature plays a crucial role in the investigated cases as it provides a formal anchoring between narrow syntax (person feature in the narrow-syntax sense) and the syntax-semantics interface (via the association of the person feature with a semantic index, i.e., the locus of derived presuppositional  $\phi$ -features). The core insight is that person has a central role in mapping of phases onto the syntax-semantics interface.

The idea is not new. For example, [Ritter and Wiltschko \(2014\)](#); [Zubizarreta and Pancheva \(2017\)](#); [Pancheva and Zubizarreta \(2017\)](#) propose that a person feature is an anchoring feature, i.e., a feature that anchors an event to a particular situation. More precisely, according to these authors, person anchors speech participants and in turn the event they participate in. Crucially, [Zubizarreta and Pancheva \(2017\)](#) and [Pancheva and Zubizarreta \(2017\)](#) argue quite extensively that such anchoring via person feature is not a language universal property. Instead, languages differ in what

feature is an anchoring feature (e.g., tense is another feature used for anchoring) and on what functional heads such an anchoring feature occurs.

If the locus of the person feature and its anchoring properties differ across languages, we expect a range of cross-linguistic variation with respect to the locality properties of presuppositional  $\phi$ -features. In addition, languages might differ in what domains count as phases. While we assume throughout this paper that both DPs and conjoined DPs are phases, the phase-hood of DPs has been questioned. For instance, [Bošković \(2009a\)](#) and following work, proposes that some Slavic languages do not have DP phases simply because they might not have the D projection at all. Furthermore, [Bošković \(2014\)](#) proposes that phase-hood of a nominal phrase might vary from a structure to a structure.

With these caveats in mind, it is difficult to make precise predictions for other languages. Despite this methodological difficulty, the present proposal makes clear predictions about correlations between certain phenomena.

The first case to consider is a language in which a person could be labelled by the syntax-semantics interface at an earlier stage of the derivation than in Czech. In such a language we expect to find derived presuppositional features in a domain smaller than the domain we identified as a nominal phase in the previous discussion. In such a language, for example, adjectives and determiners might agree in plural even if merged within a coordination phrase. In addition, even a predicate agreement with a local subject could be based on such derived  $\phi$ -features. A possible candidate for such a language is Russian. Russian indeed allows plural agreement within conjoined DPs, as in (14) (Pavel Koval, p.c.), and Russian predicates can agree with the semantic number feature instead of the grammatically expressed one, as in (15).

- (14) molodye mužčina i ženščina  
young.PL man and woman  
'a young man and woman'

- (15) a. V ètom fil'me igrali [pjat' izvestnyx aktërov].  
in this film played.PL five.NOM famous actors.GEN
- b. V ètom fil'me igralo [pjat' izvestnyx aktërov].  
in this film played.SG five.NOM famous actors.GEN  
'Five famous actors played in this film.' (Pereltsvaig, 2006, 438–439,
- (3))

Strikingly, Russian shows exceptional behaviour in another domain independently associated with properties of semantic indices, namely binding. As Nikolaeva (2014) discusses, Russian pronouns can bind outside of c-command, although in a quite restricted domain. Namely, possessive pronouns in the specifier of a DP can bind outside of their c-command, (16) (Nikolaeva, 2014, 8, (2)).

- (16) \*Eë<sub>i</sub> učitel'nica poxvalila Mašu<sub>i</sub>.  
her teacher.NOM praised Maša.ACC  
'Her<sub>i</sub> teacher praised Maša<sub>i</sub>.'

According to her analysis, this is because the index in Russian is able to syntactically raise to the immediately dominating projection. In the framework developed in the present account, this could correspond to person raising or differences in the domain of syntax-semantics labelling.

Alternatively, the syntax-semantics interface could associate person with a semantic index only at a later stage of the derivation. In such a language, semantically-based plural marking on nouns would be optional in some structurally restricted circumstances, predicate agreement with plural nouns would be optional and even plural agreement with conjoined phrases would be optional. Brazilian Portuguese is possibly such a language. In addition to Brazilian Portuguese having bare singular nouns, as in (17), Brazilian Portuguese exhibits some surprising agreement properties as well. While some speakers prefer plural agreement with conjoined phrases,

24

PERSON AT THE INTERFACE

others accept singular agreement even if the conjoined phrase is in a derived subject position, as in (18) (Frederico Prado, p.c.).

- (17) Criança lê revistinha.  
child read.3SG comic book  
'Children read comic books.' (Munn and Schmitt, 2005, 823, (1b))
- (18) a. A menina e o menino caminharam pra escola  
DET.F girl and DET.M boy walk.PST.3.PL to school  
'A girl and a boy walked to the school.'
- b. %A menina e o menino caminhou pra escola.  
DET.F girl and DET.M boy walk.PST.3.PL to school  
'A girl and a boy walked to the school.'

Furthermore, speakers accept singular agreement with morphologically plural nouns as well, as witnessed by (19) (Frederico Prado, p.c.).

- (19) Eles caminhou pra escola.  
they walk.PST.3SG to school  
'They walk to the school.'

The last option to consider is a language in which person is not licensed at the DP level by the syntax-semantics interface at all. Instead, person licensing occurs only on a higher (verbal) phase head. In such a language there might not be any semantic plural at the DP level at all. Instead, we might for instance see, optional cumulative plurals based on other features. Similarly, such a language might not make a morphological distinction between mass and count nouns with respect to morphological realizations of plurality. Furthermore, such a language might have no lexical anaphors because association with a semantic index and in turn binding would not be morphologically accessible at the DP level. Finally, plural agreement on predicates might always be semantically based. A possible candidate are Tupí



languages. See, for instance, the discussion in [Zubizarreta and Pancheva \(2017\)](#) on Paraguayan Guaraní and in [Lima \(2014\)](#) for Yudja.

Aside from cross-linguistic variation, the proposal raises a number of theoretical questions. First of all, the proposal has consequences for our understanding of the operation of agree. For instance, if certain semantically based values become available for agree only after the relevant phase has been labelled by the syntax-semantics interface, we might obtain an illusion of an upward agree. Similarly, whenever D seems to act as a probe (as in some cases of possessive pronouns) we might see an instance of syntax-semantics labelling.

The proposal also raises questions for feature typology. First, is animacy/humanness a separate feature or only a side-effect of person associated with a semantic index? Second, do features like  $[\pm\text{author}]$  and  $[\pm\text{participant}]$  have any role in narrow syntax or do they also arise only at the syntax-semantics interface via the association of person with a semantic index? Finally, what is the connection – if any – between classifying features and gender if at least some gender features are derived from the association of person with a semantic index modulo Maximize Presupposition?

I leave these questions for future research.

#### REFERENCES

- Anagnostopoulou, Elena. 2003. *The syntax of ditransitives: Evidence from clitics*. Berlin: Walter de Gruyter.
- Anagnostopoulou, Elena. 2005. Strong and weak person restrictions: A feature checking analysis. In *Clitic and affix combinations: Theoretical perspectives*, ed. Lorie Heggie and Francisco Ordóñez, 199–235. Amsterdam: John Benjamins Publishing Company.
- Bhatt, Rajesh and Martin Walkow. 2013. Locating agreement in grammar: An argument from agreement in conjunctions. *Natural Language & Linguistic Theory* 31(4): 951–1013.

- Bobaljik, Jonathan David. 2008. Missing persons: A case study in morphological universals. *The Linguistic Review* 25(1-2): 203–230.
- Borer, Hagit. 2005. *Structuring sense: An exo-skeletal trilogy*. New York: Oxford University Press.
- Bošković, Željko. 2009a. More on the no-dp analysis of article-less languages. *Studia linguistica* 63(2): 187–203.
- Bošković, Željko. 2009b. Unifying first and last conjunct agreement. *Natural Language & Linguistic Theory* 27(3): 455–496.
- Bošković, Željko. 2014. Now i`ma phase, now i`m not a phase: On the variability of phases with extraction and ellipsis. *Linguistic Inquiry* 45(1): 27–89.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2000. Minimalist inquiries: The framework. In *Step by Step*, ed. R. Martin, D. Michaels, and J. Uriagereka, 89–155. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2013. Problems of projection. *Lingua* 130: 33–49.
- Chomsky, Noam. 2015. Problems of projection: Extensions. In *Structures, strategies and beyond. Studies in honour of Adriana Belletti*, ed. Elisa Di Domenico, Cornelia Hamann, and Simona Matteini, 3–16. Amsterdam: John Benjamins.
- Collins, Chris and Paul Martin Postal. 2012. *Imposters: A study of pronominal agreement*. Cambridge, Mass.: MIT Press.
- Ferrari-Bridgers, Franca. 2007. The predictability of gender in Italian. *Lingua et Linguistica* 1: 146–167.
- Grimshaw, Jane. 1990. *Argument structure*. Cambridge, Massachusetts: MIT Press.
- Halle, Morris and Alec Marantz. 1993. Distributive morphology and the pieces of inflection. In *The view from Building 20: Essays in linguistics in honor of Sylvain Bromberger*, 111–176. Cambridge, MA: MIT Press.
- Harbour, Daniel. 2016. *Impossible persons*. Cambridge, Mass.: MIT Press.
- Harris, James W. 1991. The exponence of gender in Spanish. *Linguistic Inquiry* 22(1): 27–62.
- Heim, Irene. 1991. Artikel und Definitheit. In *Semantik: Ein internationales Handbuch der zeitgenössischen Forschung*, ed. Arnim von Stechow and Dieter Wunderlich, 487–535. Berlin: Mouton de Gruyter.

- Heim, Irene. 1998. Anaphora and semantic interpretation: A reinterpretation of Reinhart’s approach. In *The interpretive tract.*, ed. Uli Sauerland and Orin Percus, *MIT Working Papers in Linguistics*, vol. 25, 205–246. Cambridge, Mass.: Department of Linguistics and Philosophy, Massachusetts Institute of Technology.
- Heim, Irene. 2008. Features on bound pronouns. In *Phi-theory: Phi features across interfaces and modules*, ed. Daniel Harbour, David Adger, and Susana Béjar, 35–56. Oxford: Oxford University Press.
- Heim, Irene and Angelika Kratzer. 1998. *Semantics in generative grammar*. Oxford: Blackwell.
- Higginbotham, James. 1985. On semantics. *Linguistic inquiry* 16(4): 547–593.
- Hiraiwa, Ken. 2005. Dimensions of symmetry in syntax: Agreement and clausal architecture. Doctoral dissertation, MIT.
- Jespersen, Otto. 1924. *The philosophy of grammar*. London: George Allen and Unwin.
- Kayne, Richard S. 2010. *Comparisons and contrasts*. Oxford studies in comparative syntax. Oxford University Press.
- Kramer, Ruth. 2015. *The morphosyntax of gender*. Oxford – New York: Oxford University Press.
- Kučerová, Ivona. to appear.  $\phi$ -features at the syntax-semantics interface: Evidence from nominal inflection. *Linguistic Inquiry*.
- Landau, Idan. 2010. *The locative syntax of experiencers*. Cambridge, Mass.: MIT Press.
- Lima, Suzi. 2014. All notional mass nouns are count nouns in yudja. In *Semantics and linguistic theory*, vol. 24, 534–554.
- Link, Godehard. 1983. The logical analysis of plurals and mass terms: A lattice-theoretical approach. In *Meaning, use and the interpretation of language*, ed. Rainer Bäurle, Christoph Schwarze, and Arnim von Stechow, 303–323. Berlin: Walter de Gruyter.
- Lochbihler, Bethany and Will Oxford. 2015. The person-animacy connection in Algonquian. Paper presented at the 2nd Prairies workshop on language and linguistics. University of Manitoba, Winnipid, 14 March 2015.

- Longobardi, Giuseppe. 2008. Reference to individuals, person, and the variety of mapping parameters. In *Essays on nominal determination: From morphology to discourse management*, ed. Henrik Høeg Müller and Alex Klinge, 189–211. Amsterdam–Philadelphia: John Benjamins Publishing Company.
- Minor, Sergey. 2011. Complex indices and a blocking account of the sequence of tenses. Ms., CASTL, Tromsø.
- Munn, Alan and Cristina Schmitt. 2005. Number and indefinites. *Lingua* 115(6): 821–855.
- Munn, Alan Boag. 1993. Topics in the syntax and semantics of coordinate structures. Doctoral dissertation, University of Maryland, College Park, MD.
- Narita, Hiroki. 2011. Phasing in full interpretation. Doctoral dissertation, Harvard University, Cambridge, MA.
- Nevins, Andrew. 2007. The representation of third person and its consequences for Person-Case effects. *Natural Language & Linguistic Theory* 25(2): 273–313.
- Nikolaeva, Liudmila. 2014. The secret life of pronouns. Doctoral dissertation, MIT, Cambridge, Mass.
- Ormazabal, Javier and Juan Romero. 1998. On the syntactic nature of the *me-lui* and the Person-Case Constraint. *Anuario del Seminario Julio de Urquijo* 32: 415–434.
- Pancheva, Roumyana and Maria Luisa Zubizarreta. 2017. The person case constraint. *Natural Language & Linguistic Theory*. doi: [10.1007/s11049-017-9395-7](https://doi.org/10.1007/s11049-017-9395-7). URL <https://doi.org/10.1007/s11049-017-9395-7>.
- Pereltsvaig, Asya. 2006. Small nominals. *Natural Language & Linguistic Theory* 24(2): 433.
- Pesetsky, David. 2013. *Russian case morphology and the syntactic categories*. Cambridge, MA: MIT Press.
- Podobryaev, Alexander. 2017. Three routes to person indexicality. *Natural Language Semantics* 25(4): 329–354.
- Rezac, Milan. 2004. The EPP in Breton: An unvalued categorial feature. In *Triggers*, ed. A. Breitbarth and H. van Riemsdijk. Berlin: Mouton de Gruyter.
- Ritter, Elizabeth and Martina Wiltschko. 2014. Featuring animacy and humanness. A talk presented at the Dog days workshop at University of Toronto, August 2014.

- Roelofsen, Floris. 2008. Anaphora resolved. Doctoral dissertation, Universiteit van Amsterdam, Amsterdam.
- Roelofsen, Floris. 2011. Free variable economy. *Linguistic Inquiry* 42(4): 682–697.
- Rullmann, Hotze. 2003. Bound-variable pronouns and the semantics of number. In *Proceedings of the Western Conference on Linguistics (WECOL) 2002*, ed. Brian Agbayani, Paivi Koskinen, and Vida Samiian, 243–254. Fresno, CA: California State University, Department of Linguistics.
- Steriopolo, Olga and Martina Wiltschko. 2010. Distributed gender hypothesis. In *Formal studies in Slavic linguistics: Proceedings of the Formal Description of Slavic Languages 7.5*, ed. Gerhild Zybatow, Philip Dudchuk, Serge Minor, and Ekaterina Pshehotskaya, vol. 7.5, 153–172. Frankfurt am Main: Peter Lang.
- Sudo, Yasutada. 2012. On the semantics of phi features on pronouns. Doctoral dissertation, Massachusetts Institute of Technology, Cambridge, MA.
- Szabolcsi, Anna. 2015. What do quantifier particles do? *Linguistics and Philosophy* 38(2): 159–204.
- Thornton, Anna M. 2001. Some reflections on gender and inflectional class assignment in Italian. In *Naturally! Linguistic studies in honour of Wolfgang Ulrich Dressler presented on the occasion of his 60th birthday*, ed. C. Schaner-Wolles, J. Rennison, and F. Neubarth, 479–487. Turin: Rosenberg e Sellier.
- Wechsler, Stephen and Larisa Zlatić. 2000. A theory of agreement and its application to Serbo-Croatian. *Language* 76(4): 799–832.
- Williams, Edwin. 1981. Argument structure and morphology. *The linguistic review* 1(1): 81–114.
- Wiltschko, Martina. 1998. On the syntax and semantics of (relative) pronouns and determiners. *Journal of Comparative Germanic Linguistics* 2: 143–181.
- Wiltschko, Martina and Elizabeth Ritter. 2015. Animating the narrow syntax. *The Linguistic Review* 32(4): 869–908.
- Winter, Yoad. 2000. Distributivity and dependency. *Natural language semantics* 8(1): 27–69.

Zubizarreta, Maria Luisa and Roumyana Pancheva. 2017. A formal characterization of person-based alignment. The case of Paraguayan Guaraní. *Natural Language & Linguistic Theory* 35(4): 1161–1204.