

DISTINGUISHING SPEECH ACT ROLES FROM GRAMMATIAL PERSON FEATURES

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1. Introduction

Pronominal paradigms are characterized in terms of person and number features. Focussing narrowly on the person features, these are expressed in one of two ways: as pragmatic speech act roles ([speaker], [addressee]) or as purely formal features ([1], [2]).¹ In either case, it is possible to construct a paradigm that makes the necessary distinctions among persons. This is illustrated in Table 1 for French.²

Person Features	Singular	Plural
[Speaker]/[1]	je	nous
[Addressee]/[2]	tu	vous
--/[3]	il/elle	ils/elles

Table 1 French nominative personal pronouns

Everything else being equal, we might expect that paradigms of personal pronouns constructed in this way would, at least in some languages, be morphologically transparent. However, as is well documented, this is almost never the case (e.g., Harley & Ritter 2002, Cysouw 2003). Comparing, for example, French *nous* and *vous* one might hypothesize that *n(ou/ous)-* is specified for [Speaker]/[1] and *v(ou/ous)-* is specified for [Addressee]/[2]. However, these morphemes are nowhere in evidence in the singular forms, *je* and *tu*. Moreover, it is equally well known that pronominal paradigms show a dazzling array of variation, which is unexpected if they were all constructed based on essentially the same (universal) person features. In this paper we focus on the variability problem, which is rarely discussed, at least in the generative literature. The purpose of this paper is to fill this gap.

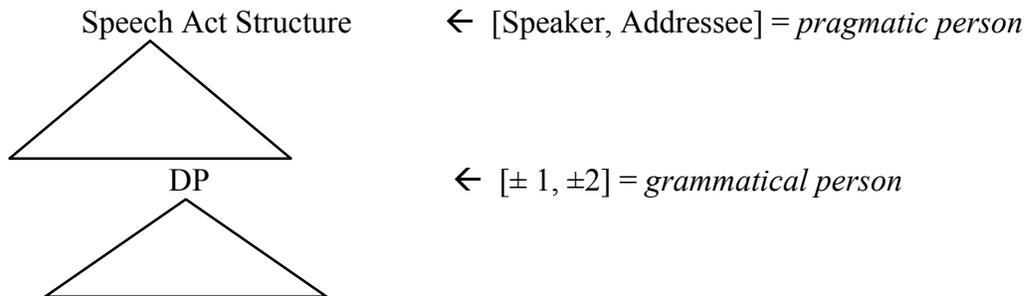
In a nutshell, we propose that the variability problem can be understood by recognizing that there are two distinct types of person features that contribute to pronominal paradigms, and that these two types of person features occupy different structural positions: The first type consists of *speech act roles* (henceforth, *pragmatic person features*); they are introduced in a dedicated (nominal) speech act structure (Ritter

¹ The features [1] and [2] may, but need not, be interpreted as indexing speech act participants. For example, 2nd person pronouns may, but need not, index the current addressee. (See section 4.3 for discussion).

² The following abbreviations are used in this article: 1/2/3: first/second/third person; ADDR = addressee; EXCL(usive); INCL(usive); PL(ural); PRES(ent) tense; RESP(onse); SG = singular; SPKR = speaker; TOP(ic).

& Wiltschko 2018). The second type consists of *grammatical person features*; they are introduced in the DP structure. We refer to this as the *Duality of Person Hypothesis*.

(1) The Duality of Person Hypothesis



The paper is organized as follows: First, we provide representative pronominal paradigms that illustrate the paradigm variability problems (section 2). In section 3, we introduce the Duality of Person Hypothesis in more depth and develop diagnostic criteria that distinguish between pragmatic and grammatical person features. In section 4, we provide independent evidence for these two types of person features. In section 5 we discuss theoretical consequences, and in section 6 we conclude.

2. An empirical problem: Variation in pronominal paradigms

In this section, we turn in more detail to the problem of paradigm variability. In particular, we show that pronominal paradigms can consist of fewer or more forms than would be expected given the traditional three person distinctions (speaker, addressee, other). For example, in Ainu, the pronominal paradigm includes 1st and 2nd, but not 3rd person pronouns, as shown in Table 2. (Ainu uses demonstratives instead of personal pronouns for 3rd person. These are not included in the paradigm below.)³

	Singular	Plural
1 st	<i>kuani</i>	<i>eioki/ciutar</i>
2 nd	<i>eani</i>	<i>ecioki/eciutar</i>

Table 2 Ainu pronouns (Refsing 1986: 92-93)

Aceh (Austronesian) is an example of a language with more than three person distinctions (Durie 1985). This is because the language has a clusivity distinction in the

³ In Ainu, pronominal arguments are typically expressed through rich agreement, and pronouns are used only for purposes of topicalization or emphasis (Refsing 1986:92). Singular pronouns consist of a pronominal prefix, the stem *an* ‘exist’ and a nominalizing suffix *-hi*. Plural pronouns combine a pronominal prefix with either the stem *oka* ‘exist’ or the pluralizing suffix *-utar*. There is no 3rd person agreement marker, and the equivalent of 3rd person pronominals consist of a demonstrative and a nominalizer, e.g. *taan kur* ‘this person’ or *taan pe* ‘this thing’ (Refsing 1986: 93).

1st person. What this means is that it has a 1st person pronoun used to refer to a speaker group including the addressee (*1st person inclusive*) and a 1st person pronoun used to refer to a speaker group excluding the addressee (*1st person exclusive*). In addition, Aceh also makes distinctions of formality, which indicate the relative social status between two persons (Durie 1985: 119-125). For example, with 2nd person, formality indicates the social status of the addressee relative to the speaker. Similarly, with 3rd person, formality indicates the social status of the 3rd person referent relative to the speaker. And with 1st person, formality indicates the social status of the speaker relative to the addressee. Note further that there is no formality distinction in the inclusive. We discuss this further in section 4.

	Singular	Plural
1 st familiar	kee	---
1 st polite	ulôn, lôn, ulông, long, ulôntuwan, lônтуwan	
1 st exclusive neutral	---	kamoe
1 st inclusive neutral	---	geutanyoe
2 nd familiar	kah	
2 nd neutral	gata	
2 nd polite	droe=neu(h)	
3 rd familiar	jih	
3 rd polite	gopnyan, götnyan	
3 rd reverential	droe=neu(h)(=nyan)	

Table 3 Aceh pronoun paradigm (Durie 1985: 117)

To summarize, these paradigms exemplify two seemingly contradictory properties. The first is the *universality* of persons denoting speech act participants (Harley and Ritter 2002, Cysouw 2003, Harbour 2016). This is the one commonality in all three paradigms illustrated above. The second property is the *variability* of all other features (Harley & Ritter 2002, Cowper & Hall 2014). As we have seen, pronominal inventories vary with respect to the types and values of feature distinctions they encode (clusivity, formality, number, and/or gender). Moreover, these types of features often given rise to asymmetric paradigms in the sense that some contrasts are manifested in some parts of the paradigm but not in others. In the next section, we develop a proposal that aims to capture both the universality and variability of person paradigms.

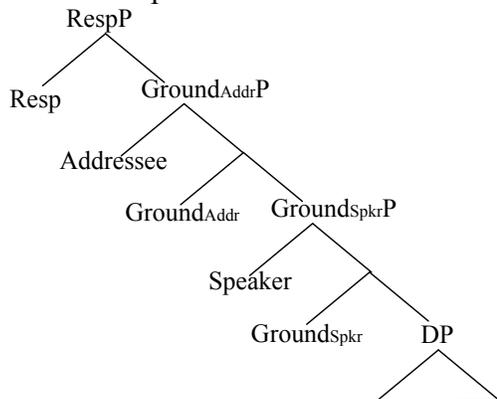
3. The Duality of Person Hypothesis

In Ritter & Wiltschko 2018, we propose that nominals have a speech act layer that dominates the familiar functional categories of the DP. This layer includes a representation of the speaker and addressee. This is in addition to any grammatical person features that are present in the DP. What this means is that there are two positions within

the nominal where person can manifest. We hypothesize that these two sources of person simultaneously account for the universality and the variability discussed in section 2.

Wiltschko 2017 proposes that the clausal speech act layer is articulated and consists of at least *Resp(onse)P* and two instances of *GroundP*, one for the speaker the other for the addressee. *RespP* encodes what the speaker wants the addressee to do with what is said (e.g., whether or not they are expected to respond); *GroundPs* encode the speaker's and addressee's attitudes towards what is being said (e.g., whether or not they believe the proposition under discussion). This constitutes the linguistic encoding of common ground. However, the common ground contains not only propositions, but also individuals. Consequently, Ritter & Wiltschko 2018 propose that just like clauses, nominals, too, are dominated by *RespP* and *GroundP*. Nominal *GroundPs* encode the speaker's and addressee's attitudes towards who is being talked about (e.g. whether or not they know the individuals under discussion). $\text{Ground}_{\text{Spkr}}$ represents the speaker's attitude towards the individual denoted by the DP; $\text{Ground}_{\text{Adr}}$ represents the addressee's attitude.⁴ Hence we assume that the speaker and addressee roles are syntactically represented in the specifiers of their respective *GroundPs*, as schematized in (2).

(2) Nominal speech act structure

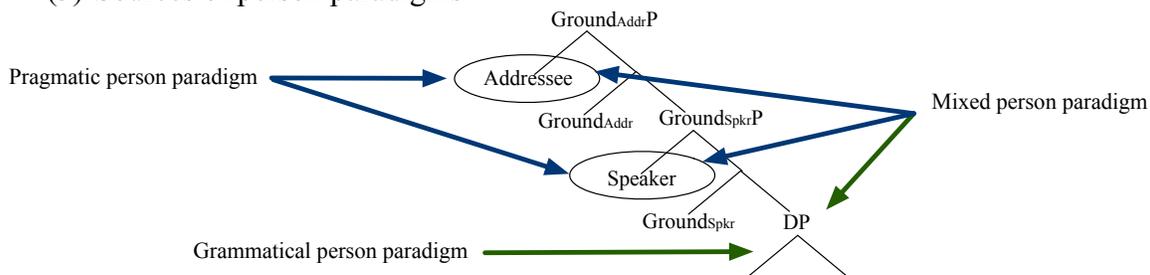


It is the content of the speech act structure in (2) which is responsible for the universality of pronouns that denote the speaker and addressee.

As for the variability, there are two sources. On the one hand, as is well known, languages vary with respect to the grammatical features realized on the different heads within the DP structure (Harbour 2018, Ackema & Neeleman 2018). On the other hand, the structure in (2) predicts another source of variation, namely whether pronouns spell out the speech act roles, or bundles of grammatical head features. Hence, paradigms can be constructed in different ways: they can be entirely grammatical, entirely pragmatic, or they can be a mixture of the two (e.g., a paradigm where 1st/2nd person pronouns spell out pragmatic person, while 3rd person pronouns spell out grammatical person). This is schematized in (3).

⁴ The addressee's attitude is reported from the point of view of the speaker. In other words, this is what the speaker assumes is the addressee's attitude, and determines, for example, whether they refer to the individual by name, or by description.

(3) Sources of person paradigms



We adopt the standard assumption that head features are binary. More specifically, we assume that grammatical person features are $[\pm 1]$ and/or $[\pm 2]$. In addition, we assume that the binary grammatical person features within the DP contrast qualitatively with the representation of pragmatic person, which is realized as the speaker and addressee roles in the specifiers of the two GroundPs. As a consequence, pragmatic person paradigms are not defined by binary distinctions.

4. Distinguishing pragmatic and grammatical person

4.1 Phi-features and formality as diagnostics for two types of person

In this section, we develop diagnostics for distinguishing grammatical and pragmatic person. The qualitative difference between grammatical and pragmatic person we introduced in the last section gives rise to a number of systematic differences that we exploit in order to develop diagnostics for classifying pronouns as pragmatic or grammatical.

We begin by considering the person inventories made possible by pragmatic vs. grammatical person. Straightforwardly, if pragmatic person consists of the speaker and addressee roles only, then a pragmatic person paradigm will consist only of these two persons. In contrast, if grammatical person consists of two binary features $[\pm 1]$ and $[\pm 2]$, this allows for up to four persons, as shown in Table 4.

	$[\pm 1]$	$[\pm 2]$
1 st person exclusive	+	-
1 st person inclusive	+	+
2 nd person	-	+
3 rd person	-	-

Table 4: Four grammatical person distinctions

Given this difference, we assume that any paradigm that consists only of 1st and 2nd person pronouns (without a clusivity distinction), realizes pragmatic person.⁵ In contrast,

⁵ In this paper, we do not address the possibility of speech act roles other than speaker and addressee, for example, a logophoric center. If there are other types of pragmatic persons, a language could have a more extended pragmatic person paradigm. We leave this question for future research.

a paradigm which has 3rd person and/or a distinction between 1st person exclusive and inclusive realizes grammatical person.

We turn next to the expression of gender features in pronominal paradigms. We assume that grammatical gender may be a feature of pronouns that realize grammatical person. In contrast, pronouns that realize pragmatic person may express natural gender in some cases. The difference between grammatical and natural gender can thus be used as a diagnostic for pronouns that realize grammatical vs. pragmatic person. Specifically, grammatical gender features are binary valued, while natural gender is not. Grammatical gender is defined in terms of agreement and concord (Hockett 1958, Corbett 1991), while natural gender may occur in languages that lack agreement. Finally, there is no necessary correlation between grammatical gender and the natural gender of the referent. Hence with grammatical person pronouns we expect to find mismatches between grammatical and natural gender, whereas with pragmatic person pronouns we do not.

Like gender, number is predicted to differ across grammatical vs. pragmatic person pronouns. There are at least two notions of plurality identified in the literature: *additive plurals* and *associative plurals*. Additive plurals simply denote a set of like entities, (e.g., *books* = book+book+book+...). We assume that this is the interpretive content of the grammatical feature [\pm plural]. Associative plurals, in contrast, denote a group consisting of a focal individual and associates (such as family or friends), and is restricted to humans. We propose that additive plurals must occur with grammatical person while associative plurals are compatible with either grammatical or pragmatic person. Thus, additive plural constitutes a diagnostic for grammatical person. This hypothesis builds on an insight going back to Lyons (1968: 277), according to which *we* is not an additive plural of *I* (*we* \neq I+I+I+...), but “rather, it includes reference to *I* and is an [associative] plural.” In other words, the speaker is the focal individual in any first person plural group; associated members are addressees or others. Lyons’ insight is corroborated by the typological observation, pointed out by Bobaljik 2008, that no language has a special morpheme for additive plural in 1st person.⁶ Instead, plurality in 1st person is always associative. This is unsurprising given that the speaker role is unique: there is never a plurality of individuals speaking at any given time.⁷

For 2nd person, however, Lyons (1968: 277) states that “as a plural form [you] may be either ‘inclusive’ (referring only to the [addressees] present – in which case it is the plural of the singular *you*, in the same sense as *cows* is the plural of *cow*) or ‘exclusive’ (referring to some other person, or persons, in addition to the [addressee], or [addressees]).” This would suggest that 2nd person can be either additive or associative, and we might expect to find languages where a morphological distinction is made. However, according to Bobaljik 2008, this is never the case.

Following Nakanishi & Ritter 2009 we assume that the additive interpretation of 2nd person plural can be derived from the associative plural. They develop an analysis of Japanese *-tati*, an associative plural marker that is also used as an additive plural marker on common nouns, as well as on 2nd and 3rd person pronouns. According to their analysis,

⁶ Bobaljik 2008 uses the term ‘true plural’ for an additive plural.

⁷ We are ignoring the exceptional case of a Greek chorus where a group of individuals speak in unison.

the associative plural combines with a focal human individual (of type e), and maps it onto sets of pluralities, each of which includes the focal individual and their associate(s). The associate(s) can be any singular or plural individual that shares some property with the focal individual (their family, friends, etc.). This straightforwardly accounts for the interpretation of all 1st person pronouns, and for the interpretation of 2nd person pronouns that denote one addressee and others.

As for the additive reading of *-tati* when it appears on common nouns, they propose that the most salient and apparent shared property is the property denoted by the common noun itself (e.g., student status in the case of *gakusei-tati* ‘student-ASSOC.PL’). As a result, the associates end up having the property denoted by the noun that describes the focal individual, and this yields the effect of an additive reading. This analysis extends to *-tati* with 3rd person pronouns. Following Kratzer (2009), Nakanishi & Ritter assume that 3rd person pronouns are definite descriptions consisting of a gender feature and definiteness. As with common nouns, the most salient and apparent shared property between a 3rd person pronoun and their associates is the content of the pronoun itself - in this case its grammatical gender feature. For instance, *kanozyo-tati* ‘she-ASSOC.PL = they (fem.)’ denotes sets of pluralities each of which contains *kanozyo* ‘she’ and people who share some property with her, namely, the feminine feature. Again, the result yields the effect of an additive reading. We suggest that this same treatment can be extended to 2nd person plural pronouns that refer to a group of addressees. Once again, the most salient and apparent shared property between a 2nd person pronoun and their associates is the content of the pronoun itself - in this case, gender and/or social status and their shared speech act role.

This analysis predicts that 1st and 2nd person, regardless of whether they spell out grammatical or pragmatic person can only combine with an associative plural. It further follows that additive plural marking is incompatible with pragmatic person and hence can serve as a diagnostic for grammatical person.

Finally, we turn to social deixis, i.e., distinctions in formality depending on the relative social status between the speaker and addressee. This is clearly a pragmatic distinction given that its choice depends on properties of the current speech-act participants. Hence, we propose that distinctions in social deixis diagnose pragmatic person. Note however, that there are languages that encode formality distinctions in 3rd person pronouns, such as Aceh, as shown in Table 3 above. Specifically, Aceh 3rd person pronouns distinguish three degrees of formality: familiar, polite, and reverential. We suggest that there are two possibilities to analyse this property: either 3rd person pronouns might instantiate pragmatic person also, or they are not true pronouns but rather pseudo-pronominal *light* nouns.⁸

The diagnostics that distinguish between grammatical and pragmatic person are summarized in Table 5. (Henceforth, we use green shading to indicate grammatical person and blue shading for pragmatic person.)

⁸ It goes without saying that distinctions of formality are only relevant for nominals that refer to humans. In some languages (e.g., Japanese) 3rd person pronouns are also restricted to human referents. We speculate that the humanness restriction might be another diagnostic of pragmatic person. We leave this question open for future research.

	Grammatical person	Pragmatic person
Grammatical number	✓ [\pm plural] (or associative)	✗ (only associative plural)
Grammatical gender	✓ [\pm feminine], ...	✗ (only semantic gender)
3 rd person	✓ [-1,-2]	?? (tbd)
1 st inclusive pronoun	✓ [+1,+2]	✗ speaker or addressee
Formality distinctions	✗	✓

Table 5 Diagnosing grammatical vs. pragmatic person

Applying these diagnostics to different languages allows us to characterize different paradigms as pragmatic, grammatical, or mixed. Ainu is an example of a language with a pragmatic person paradigm because it only has pronouns that realize the two speech act roles (speaker and addressee). This is illustrated in Table 2, repeated here as Table 6.

	Singular	Plural
1 st	kuani	cioka/ciutar
2 nd	eani	ecioka/eciutar

Table 6 Ainu pragmatic person (Refsing 1986: 92-93)

Waris is an example of a language with a grammatical person paradigm because it has pronouns that realize four distinct persons: 1st exclusive, 1st inclusive, 2nd and 3rd. This is the result of the combination of the two binary person features [\pm 1] and [\pm 2]. This is illustrated in Table 7.

1 st exclusive	ka
1 st inclusive	pi
2 nd	ye
3 rd	he

Table 7 Waris pragmatic person (Brown 1990, as cited in Harbour 2014: 127)

Finally, Turkish is an example of a language with a mixed person pronoun paradigm. There are two diagnostics that point to this conclusion. First, there is a formality distinction in 2nd person. This is evidence that 2nd person pronouns must be pragmatic. And second, the 3rd person plural pronoun is formed with the additive plural suffix *-lar*, which is regularly used to pluralize common nouns. This strongly suggests that the 3rd person pronouns are grammatical.

	Singular	Plural
1 st	ben	biz
2 nd	sen	siz
2 nd formal	siz	
3 rd	on	on-lar
nouns	kiz ‘girl’	kiz-lar ‘girls’

Table 8 Turkish mixed person

Having established diagnostics to distinguish between pragmatic and grammatical person, we now turn to applying them in order to demonstrate that the two notions of person are indeed qualitatively different.

4.2 Complementarity of clusivity and formality

In the last section, we argued that clusivity is a property of grammatical person while formality is a property of pragmatic person. In other words, clusivity and formality are predicted to be in complementary distribution. More specifically, we predict that inclusive pronouns will lack formality distinctions. To the best of our knowledge, this prediction is borne out: there are no languages where inclusive pronouns are marked for formality (Michael Cysouw, p.c.).

Even in languages where the pronominal paradigm includes both clusivity and formality, inclusive pronouns are the only ones that lack the formality distinction otherwise associated with 1st and 2nd person. We analyse these as mixed paradigms.

We here discuss two examples of such languages, namely Mixteco Chalcatongo and Aceh. Consider first the pronouns of Mixteco Chalcatongo, which are listed in Table 9.⁹

1 st familiar	=rí	Prag: speaker (familiar)
1 st polite	=na	Prag: speaker (polite)
1 st inclusive	=žó	Gramm: [+1,+2]
2 nd familiar	=ró	Prag: addressee (familiar)
2 nd polite	=ní	Prag: addressee (polite)
3 rd masc	=ðe	--
3 rd fem	=ña	--
3 rd polite older	=to	--
3 rd younger deceased, etc.	=ži	--
3 rd supernatural	=ža	--
3 rd animal	=ti	--
3 rd other	=Ø	--

Table 9 Mixteco Chalcatongo mixed person paradigm (Macaulay 1996: 139)

⁹ Mixteco-Chalcatongo also has a series of full pronouns for 1st and 2nd persons only. According to Macaulay (1996: 80) there are no 3rd person full pronouns; rather generic nouns serve this function (e.g. *čàà* ‘man’ for 3rd person masculine and *ñàžã* ‘woman’ for 3rd person feminine). For discussion of the distribution of these two types of pronominals see Macaulay (1996: 138-143).

In this language 1st and 2nd person pronouns display a distinction between familiar and polite forms, and hence, according to our diagnostics, are pragmatic pronouns. However, Mixteco also has an inclusive 1st person plural pronoun, which, according to our diagnostics, must be grammatical. Observe that this is the only pronoun among the 1st and 2nd person pronouns that lacks a formality contrast.

A similar situation is found in Aceh. Once again, we see formality distinctions marked in 1st exclusive and 2nd person but crucially not in the inclusive. This language differs from Mixteco Chalcatongo in that there appear to be grammatical person pronouns not only for 1st inclusive but also for 1st exclusive and 2nd person. In all cases, these are annotated as neutral in Table 10.¹⁰

	Singular	Plural	
1 st familiar	kee	---	Prag: speaker (familiar)
1 st polite	ulôn, lôn, ulông, long, ulôntuwan, lônntuwan		Prag: speaker (polite)
1 st exclusive neutral	---	kamoe	Gramm: [+1,-2]
1 st inclusive neutral	---	geutanyoe, tanyoe	Gramm: [+1,-2]
2 nd familiar	kah		Prag: addressee (familiar)
2 nd polite	droe=neu(h)		Prag: addressee (polite)
2 nd neutral	gata		Gramm: [-1,+2]
3 rd polite	gopnyan, götnyan		tbd
3 rd reverential	droe=neu(h)(=nyan)		tbd

Table 10 Aceh mixed person paradigm (Durie 1985: 117)

Note that there is no obvious reason why inclusive pronouns should lack a formality distinction. For example, it is conceivable that a language might have two inclusive pronouns: a formal inclusive pronoun used when the addressee has a higher social status than the speaker, and another one used elsewhere. On our analysis, the reason for the lack of a formality distinction is that inclusive pronouns must realize grammatical person, which in turn, is incompatible with formality distinctions.

4.3 Impersonal use of personal pronouns

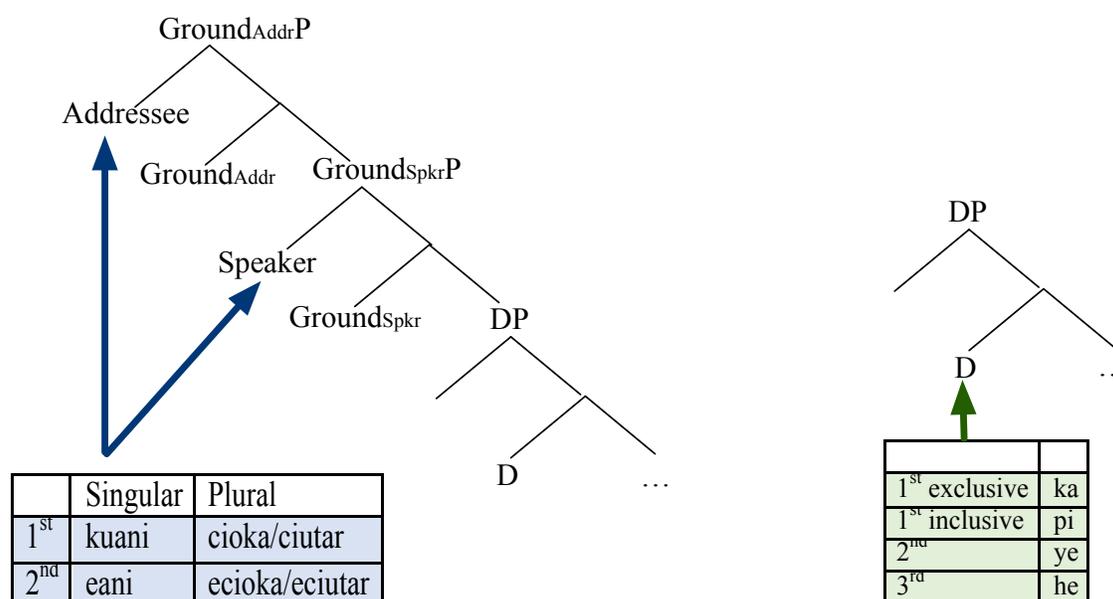
We have been talking about pronouns that realize pragmatic person and pronouns that realize grammatical person without being explicit about the differences in their representation. In this section, we first address this issue (§4.3.1) and then explore the consequences for the form and function of impersonal pronouns (§4.3.2).

¹⁰ We have not classified the 3rd person pronouns as either pragmatic or grammatical because we are unsure as how to best treat these forms. As noted in section 4.1, we speculate that they are either pragmatic person pronouns, or they are not true pronouns but rather pseudo-pronominal *light nouns*.

4.3.1 Towards the representation and spell-out of pragmatic and grammatical person

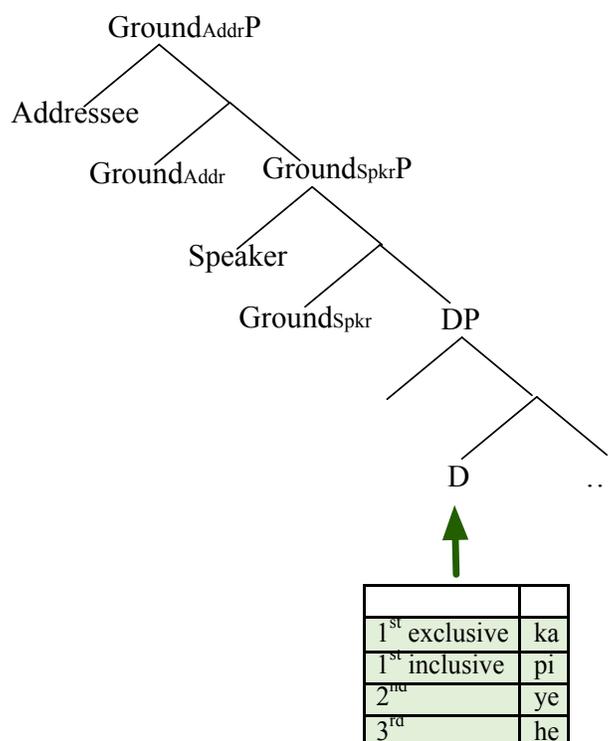
Our discussion thus far has revolved around the identification of pragmatic vs. grammatical person. Assuming that pragmatic person resides in the speech act layer, whereas grammatical person is in the DP, one might expect that the two types of pronouns differ in their structural complexity. More specifically, one might expect that only pronouns that realize pragmatic person have a speech act layer. These pronouns spell out pragmatic person. Conversely, pronouns that realize grammatical person would be bare DPs, and consequently, they would spell out the contents of grammatical person. This is illustrated in (4)a and (4)b, respectively.

- (4) a. pragmatic person pronouns b. grammatical person pronouns



However, there is a third option, namely that even pronouns that realize grammatical person contain a speech act layer. Such pronouns would then have null representations of the speech act participants in the speech act layer but an overtly realized (i.e., spelled out) representation of grammatical person. This is illustrated in (5).

(5) Grammatical person pronouns (with silent pragmatic person layer)



The possibility for (5) rests on the assumption that there is a difference between the representation of a pronoun and its spell-out properties. Both (4)a and (5) contain a speech act layer but only in (4)a do the pronouns spell out the contents of this layer. As for the structural difference between (4)b and (5), what is the interpretive consequence of the presence or absence of the speech act layer?

4.3.2 The representation of impersonal pronouns.

In this section, we provide evidence from the impersonal use of personal pronouns to the effect that all three structures are in fact attested. We argue that, when the speech act layer is present, the pronoun necessarily has a personal (i.e. indexical) use, whereas in its absence a given pronoun can be used either personally or impersonally. Our discussion here builds on the analysis of impersonal pronouns developed in Ritter & Wiltschko 2016, 2018. It is well-known that dedicated impersonal pronouns like English *one*, as in (6)a, lack person features (Egerland 2003, Ackema & Neeleman 2016, a.o.). In Ritter & Wiltschko 2016, we argue that this is due to the absence of functional architecture, notably the DP layer. In Ritter & Wiltschko 2018, we propose that the defining property of all impersonal pronouns is structural defectiveness. There, we argue that, when personal pronouns are used impersonally (as in (6)b), they are similarly structurally defective because they lack a speech act layer.

- (6) a. One shouldn't text while driving.
 b. You shouldn't text while driving.

Combining this hypothesis with the proposal under consideration here leads to the prediction that pronouns that realize pragmatic person, and hence contain a speech act layer, can never be used impersonally.

We provide evidence from Dutch that this is indeed the case. Dutch has both strong and weak personal pronouns. Interestingly, only the weak ones can be used impersonally, as was observed by Gruber 2013. Her evidence is reproduced in (7).

- (7) a. In Nederland leer **je** fietsen zelfs voordat **je** leert lopen
 in Netherlands learn you_{WEAK} cycle even before you_{WEAK} learn walk
 'In the Netherlands you_{INDEXICAL}/one learn(s) to ride a bike even before
 you_{INDEXICAL}/one learn(s) to walk.'
- b. In Nederland leer **jij** fietsen zelfs voordat **jij** leert lopen
 in Netherlands learn. you_{STRG} cycle even before you_{STRG} learn walk
 'In the Netherlands you_{INDEXICAL}/*one learn(*s) to ride a bike even before
 you_{INDEXICAL}/*one learn(*s) to walk.'

Gruber 2013: 131

Following Cardinaletti & Starke 1999, weak pronouns are structurally deficient relative to their strong counterparts. We propose that the structural deficiency resides in the presence or absence of the speech act layer: strong pronouns must contain it whereas weak pronouns may lack it. Because impersonal pronouns are defined by the absence of the speech act layer, it follows that only weak pronouns may be used impersonally.

Returning to the question of representation, we suggest that strong pronouns always have the structure in (4)(4)a, while weak pronouns are structurally ambiguous. When they are used impersonally, they have the structure in (4)b, and when they are used as personal pronouns they have the structure in (5). Hence, all three structures predicted by our analysis are in fact attested.

An interesting variation on this theme is presented by Japanese. In this language, all pronouns encode some information about social deixis (Kaiser et al. 2013, a.o.) and hence, according to our diagnostics, they all realize pragmatic person. This, in turn, leads to the prediction that Japanese personal pronouns never have an impersonal use, unlike Dutch *je* or English *you*. This prediction is borne out, as observed by Kitagawa and Lehrer (1990). They show that the only option for an impersonal pronoun in Japanese is *pro*, and that the only possible interpretation for an overt pronoun is a personal (indexical) one, as illustrated in (8).

paradigms are a theoretical construct developed by scholars of language. Crucially, pronominal paradigms do not necessarily represent a natural class of linguistic objects.

The duality of person hypothesis allows us to account for some of the attested variation and some of the otherwise puzzling facts about pronoun paradigms, including the complementarity of clusivity and formality, and restrictions on impersonal uses of personal pronouns. To the extent that this hypothesis is on the right track, it provides new insights into the contribution of the nominal speech act layer.

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