Form and meaning of (indefinite) pronouns

Olaf Koeneman & Hedde Zeijistra

Abstract:
The relation between the morphological form of a pronoun and its semantic function is not always transparent, and syncretism abounds in natural languages. In this overview chapter, we discuss different types of indefinite pronouns, see what types can be morphologically distinguished and to what extent different morphological forms align with the different semantic functions that indefinites may express. It will turn out that at least four major functions of indefinites can be distinguished, each with a number of subfunctions. These functions and subfunctions can be morphologically realized differently across languages. Hence, the interplay between form and meaning of indefinite pronouns reveals the underlying nature of indefinite pronouns.

Keywords:
Definite pronouns, Exclusive/inclusive 1st persons, Existentials, Free choice, Indefinite pronouns, Morphological syncretisms, Negation, Negative Polarity, Plural and dual pronouns, Semantic functions. The chapter concludes with an extension of the approach pursued to personal pronouns.

1 Morphological forms and semantic functions

This paper is concerned with morphological forms of pronouns, and how they relate to their semantic properties. A general difficulty is that the morphological shape of particular elements does not always wear all its semantic properties on its sleeve. It is by looking at the environment in which the form occurs that we can determine its syntactic category and its meaning. With pronouns, this is not different. We particularly have to be aware of the existence of morphologic syncretisms: One form can correspond with different meanings.

There are two distinct strategies one can take to deal with this difficulty. One is to try and come to a list of semantic functions that pronouns can have by focussing on those languages that are morphologically rich. Such languages can be said to be morphologically transparent: different forms correspond with different semantic functions. This situation is depicted in (1):
Another strategy is to closely study the semantic behaviour that particular forms can take on in a particular language, irrespective of its morphological richness, and postulate semantic functions on the basis of this scrutiny. This can lead to the description in (2), where one form corresponds with two functions rather than one:

As will be immediately obvious, these research strategies are mutually informative. A language with the pattern in (1) will provide morphological evidence for the existence of certain functions that can also turn out to play a role in morphologically less rich languages, displaying the pattern in (2).

There is also a way, however, in which the theory of pronouns benefits more from poor languages than from rich languages. Suppose that on the basis of a morphologically rich language we come to the characterization in (1) and at the same time we find quite a number of languages displaying the pattern in (2), where Form₁ corresponds with Functionₐ and Functionₐ, which are realised differently in a rich language. Suppose in addition that we find no examples of languages displaying the pattern in (3), where Form₁ corresponds with Functionₐ and Functionₐ of the language displaying (1).

This would suggest that Functionₐ and Functionₐ are more closely related than Functionₐ and Functionₐ, and poor languages in fact provide the morphological evidence for this. It is therefore not the case that morphologically rich languages are overall more informative about what the theory of pronouns should want to capture: they might even provide not much more than an unorganised
list. We should turn to morphologically poor languages to understand how this list is internally structured. The pervasiveness of (2) and the absence of (3) would then suggest that (1) is not the right characterization of the morphologically rich language. The representation in (4), in which Form₁ and Form₂ correspond to subfunctions of Functionₐ, is more adequate because it immediately captures the relation between those functions that in a poor language are realised by the same form.

A rich language realises the subfunctions morphologically, whereas a poor language realises the umbrella function. The corresponding representation for the poor language in (2) can then be replaced by (5):

In short, then, the morphologically rich languages show us which functions have to be distinguished, and the syncretisms in the morphologically poor languages show us how these functions must be related to one another. In this specific case, the poor languages would force us to look for the common denominator of the subfunctions we identified (what is it that Functionₐ₁ and Functionₐ₂ share?), a desideratum for the theory that the rich languages would not necessarily set.

The purpose of this chapter is to see how far this research strategy will get us. To be clear, the strategy could be wrong. It could be that homonymous patterns give us misleading advice, and that the relations between forms and functions turn out to be more complicated. We can only conclude that, however, after we have tried it out. It will be shown that there is enough literature to suggest that the hypothesis may be on the right track. The focus will be on the study of indefinite pronouns and how this leads to a well-informed theory of this category. We will end with a
discussion section in which we also indicate how the same hypothesis can be applied in the realm of definite pronouns, although we won’t engage in a fully-fledged overview of this area.

2 Indefinite pronouns

2.1 Indefinite pronouns and indefinite functions

As Haspelmath in his seminal overview explains (Haspelmath 1997), it is not really clear what indefinite pronouns are. Even taking as a starting point that an indefinite pronoun is a pronoun that expresses indefinite reference (or, slightly weaker, whose main function is to express indefinite reference), is far from trivial. The variation among indefinite pronouns is much wider than that among other pronouns. To see this, let’s compare indefinite pronouns with other types of pronouns:

(6) Types of pronouns:
   a. Personal pronouns
   b. Demonstrative pronouns
   c. Relative pronouns
   d. Interrogative pronouns
   e. Indefinite pronouns

This fifth type of pronoun appears to be more heterogeneous than the other four, although the other types may also be less homogeneous in nature than is often assumed. One of the reasons for that is that both in descriptive and prescriptive literature various kinds of elements have often been referred to as indefinite pronouns, although these elements are not indefinite pronouns in the literal sense. For instance, expressions such as few, several and many are sometimes referred to as indefinite pronouns, but actually denote quantity and not indefinite reference. The same also holds for universal quantifiers, such as every and all, whose referential function is rather definite (witness the grammaticality of all the women, which includes the definite article the).

But even among those elements that are both pronominal in nature and express indefinite reference, not all of them should be treated as true indefinite pronouns. Generic pronouns, for instance, like one in English or man in German have more in common with personal pronouns than with indefinite pronouns, and are therefore often categorized as personal pronouns. Hence, the question arises what exactly counts as an indefinite pronoun.
If we ignore “indefinite pronouns” without indefinite reference, then at least in a language like English, three types of expressions remain, often referred to as series: the *some-series*, the *any-series* and the *no-series*. Such series generally exist of an indefinite marker (*some, any, no*) and an element expressing an ontological category (*person, thing, place*). This is illustrated for English in (7):

(7) **Ontological category** \(\text{some-series}\) \(\text{any-series}\) \(\text{no-series}\)

<table>
<thead>
<tr>
<th></th>
<th>Person</th>
<th>Thing</th>
<th>Place</th>
<th>Time</th>
<th>Manner</th>
<th>Determiner</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>some</strong></td>
<td><em>some-one</em></td>
<td><em>some-thing</em></td>
<td><em>some-where</em></td>
<td><em>some-time</em></td>
<td><em>some-how</em></td>
<td><em>some N</em></td>
</tr>
<tr>
<td><strong>any</strong></td>
<td><em>any-one</em></td>
<td><em>any-thing</em></td>
<td><em>any-where</em></td>
<td><em>any-time</em></td>
<td><em>any-how</em></td>
<td><em>any N</em></td>
</tr>
<tr>
<td><strong>no</strong></td>
<td><em>no-one</em></td>
<td><em>no-thing</em></td>
<td><em>no-where</em></td>
<td><em>no-time</em></td>
<td><em>no-how</em></td>
<td><em>no N</em></td>
</tr>
</tbody>
</table>

As these different series are distinguished on the basis of their morphological properties, one can say that morphologically there are three types of indefinite pronouns in English. But from a semantic perspective, it is not so obvious that there are also three types of indefinites. In fact, the semantic contribution of each of these pronouns is actually quite richer than the existence of just three forms would suggest. To illustrate this, *any*-expressions sometimes trigger so-called *free choice* readings that seems closer in nature to universal than to existential indefinites. For instance *any friend* in (8) has a reading that is closer to ‘every friend’ than to ‘some friend’:

(8) You may invite any friend for your party

On the other hand, there are various examples where *any*-expressions do express clear indefinite references, such as in the *if*-clause in (9). If (9) is true, you should also call the police, if you see only one stranger.

(9) If you see any stranger, please call the police.

Hence, it looks like elements of the *any-series* serve different semantic functions. Similarly, negative indefinites can be said to introduce indefinite references under the scope of negation.
Intuitively, an expression like *nothing* has the same meaning as ‘not anything’, suggesting that no-series are actually decomposed of a negation and an indefinite pronoun (Jacobs 1989; Rullmann 1995; Penka 2011; Zeijlstra 2011; Iatridou and Sichels 2011; Temmerman 2013). The following two sentences have virtually the same reading:

(10) a. She didn’t say anything
    b. She said nothing

Hence, languages like English distinguish three classes of similar elements, morphologically motivated, but they may express more semantic functions. This demarcation between morphological forms and semantic properties is even less clear in other languages, and may even apply to cases where indefinite forms may also be used as interrogative pronouns. For instance, as the examples in (11), taken from Lin (2017), show, Chinese *shenme* can be translated as ‘what’, ‘some’ and ‘any’, depending on the grammatical contexts it appears in.

(11) a. Mali zuotian mai-le *shenme* shu ne?
    Mary yesterday buy.PERF *shenme* book Q?
    ‘What book did Mary buy yesterday?’
    b. Mali zuotian hoaxiang mai-le *shenme* shu
    Mary yesterday probably buy.PERF *shenme* book
    ‘Mary has probably bought some book yesterday, ’
    c. Ruguo Mali zuotian hoaxiang mai-le *shenme* shu, …
    If Mary yesterday probably buy.PERF *shenme* book
    ‘Mary has bought any book yesterday, …’

In fact, the correspondence between interrogative and indefinite pronouns is huge. Not only are there many languages like Chinese where interrogative pronouns can be used as indefinites, in many languages the form of an indefinite is also based on the form of the interrogative pronoun. According to the WALS (chapter 46), out of 326 languages, 194 have an indefinite whose form is based on an interrogative pronoun. For instance, in Modern Greek, the word for ‘who’ is *pjios* and the word for ‘somebody’ is *ka-pjios*. A question that immediately pops up in this respect is whether this is the result of diachronic processes, or whether the meaning contribution of an indefinite pronoun exists of a component that has the semantics of a *Wh*-term. This already suggests that the typology in (6)
may be more shady when more languages are taken into consideration. If interrogative and indefinite pronouns may often share the same morphological properties it is hard to take morphological criteria to be the distinguishing factors.

But if one cannot provide clear morphological criteria to distinguish between indefinite pronouns and other types of pronouns, one should perhaps allude to semantic criteria. Following a more functionalist tradition, where the grammatical contribution of particular elements is described by their functional rather than their formal properties, one can say that a pronoun like Chinese shenme has a function as an interrogative pronoun, roughly meaning ‘what’, and a function as an indefinite, meaning ‘some’ or ‘any’ (even though we saw before that it is already hard to find a joint semantic core for expressions like somebody and anybody). Such a take is more or less along the lines of Haspelmath (1997), who proposes that there may be up to nine functions, listed in (12), that define indefinite pronouns.

<table>
<thead>
<tr>
<th>Function</th>
<th>Pronoun</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Specific, known to the speaker</td>
<td>Some</td>
<td>Someone took the final cookie; I know who</td>
</tr>
<tr>
<td>b. Specific, unknown to the speaker</td>
<td>Some</td>
<td>Someone took the final cookie, and I will find out who</td>
</tr>
<tr>
<td>c. Unspecific, irrealis</td>
<td>Some</td>
<td>Ask somebody else!</td>
</tr>
<tr>
<td>d. Direct negation</td>
<td>No</td>
<td>Nobody called</td>
</tr>
<tr>
<td>e. Indirect negation</td>
<td>Any</td>
<td>I don’t think that she called anybody</td>
</tr>
<tr>
<td>f. Polar question</td>
<td>Any</td>
<td>Did you take any cookies?</td>
</tr>
<tr>
<td>g. Conditional protatis</td>
<td>Any</td>
<td>If you see anything, let me know</td>
</tr>
<tr>
<td>h. Standard of comparison</td>
<td>Any</td>
<td>Suzanne ran faster than anybody (else)</td>
</tr>
<tr>
<td>i. Free choice</td>
<td>Any</td>
<td>Take any apple you like</td>
</tr>
</tbody>
</table>

For Haspelmath these nine functions reflect the overall meaning usages of indefinites. However, the reason to distinguish these nine functions is still morphological in nature: for every pair of functions there are languages where these functions are morphologically realized in a different way; there is no pair of functions that is expressed by the same indefinite pronoun universally. For instance, in
Russian, *koe*-indefinites can only convey specific speaker knowledge. When the referent of the indefinite is not known to the speaker, an indefinite belonging to the *to*-series needs to be used. That means that at least one language morphologically distinguishes functions (12)a-b. As Haspelmath shows, this is indeed the case for every pair of functions.

On this ground, one could argue that, even in English, there are at least nine different types of indefinites, of which several are homophonous. Now, as already addressed in the introduction, the question is whether all these 9 functions together comprise an arbitrary list or whether certain functions cluster together into *super*functions. In other words, is there an internal structure to the list in (12)? Such an internal structure must then be argued for on the basis of either morphological similarities (the homophonous forms themselves) or semantic similarities between the functions listen in (12). The question is then whether the morphological and semantic subgroupings align, thereby confirming the working hypothesis.

Looking at the pronominal forms used in English listed in (12), morphology tells us that those nine functions cluster into at least three groups, corresponding to the three English morphological forms (*some, no* and *any*). A first stab at the internal structure for pronominal indefinites, then, would look as in (13):

(13) \[
\begin{align*}
\text{indefinites} \\
\text{1(*some)} & \quad \text{2 (*no)} & \quad \text{3 (*any)} \\
\text{Functions:} & \quad a, b, c & \quad d & \quad e, f, g, h, i
\end{align*}
\]

The following questions then arise:

- Can the different functions that are morphologically clustered also be classified as naturally defined semantic classes?
- Does every morphological form (in English) correspond to one superfunction or is it the case that some superfunctions are realized homophonously in English?
- Why is it that sometimes morphological boundaries deviate from semantic boundaries (Haspelmath’s original motivation for defining nine independent functions)?
• Can semantic classifications based on morphological properties (or vice versa) help us further identify other indefinite forms or functions?

Based on the rich literature on the form and meaning of indefinites there are indeed good reasons to assume that the morphological patterns attested in English (and many other languages) align with particular semantic classes. For instance, as will be discussed in detail later on, functions (12)e-h are generally known to fall under the category of Negative Polarity Items (NPIs), elements that need to take scope below elements that in one way or another count as negative. NPIs may even comprise function (12)i too, whose interpretational effect is generally known as a so-called free choice effect. NPIs and Free Choice Items (FCIs) elements are often, though not always, realized by the same morpheme. In English, where any realizes all functions (12)e-i, this is indeed the case.

The English no-series seems to form a class on its own, generally referred to as negative indefinites, but closer scrutiny will reveal that various subtypes of negative indefinites can be identified on semantic grounds that are generally morphologically realized as one class of elements.

Finally, functions (12)a-c can be also be subsumed as a category, which we can tentatively call positive or existential indefinites.

It turns out that polarity and polarity-sensitivity plays a huge role in determining the various semantics of indefinites and that indefinites that behave differently in terms of polarity and polarity-sensitivity generally also receive different morphological forms. The rich literature on polarity and polarity-sensitivity generally identifies the following four classes of elements, which can each be subdivided in various subclasses: (i) non-negative existential indefinites (ii) negative indefinites; (iii) Negative Polarity Items; and (iv) Free-Choice Items. The English some-series, then, belongs to first group, the no-series to the second group and any-series to both the third and fourth group, sometimes jointly referred to as affective items (after Giannakidou 2000). Combining both the wide range of different semantic functions and the morphological similarities between elements that can express such functions, we arrive at the representation in (14) for English:

(14)

```
indefinites
  /   \
non-negative existential indefinites
       / \
    negative indefinites
          / \ 
       affective items
             /   \
         Negative Free-Choice
```

any
What we will do next is show that these four groups can be classified in proper semantic terms. Each group has a clear semantic core. As we will see, it turns out that in many languages the boundaries between these four, semantically defined, groups of functions also align morphologically. At the same time, there are striking morphological correspondences between such groups as well. For instance, in many languages, Free-Choice Items and Negative Polarity Items are syncretic (like in English), suggesting that these groups cluster indeed. Also, it turns out that negative indefinites and Negative Polarity Items have sometimes more in common than is generally assumed. At the same time, we also see that in certain cases particular functions that belong to these superfunds are still morphologically realized differently, providing morphological evidence for semantic subclassifications of types of indefinites. In the following section we show how types of indefinites that are morphologically distinguishable can be semantically distinguished as well, and vice versa. We first discuss Negative Polarity Items (2.2.1), then Free-choice Items (2.2.2) followed by negative indefinite (2.2.3) and positive or existential indefinites (2.2.4). Studying indefinites thus forms a welcome example of how morphology may inform semantic theory and how semantics may help us better understand morphological differences in the expression of natural classes of elements.

2.2 Four classes of indefinites

2.2.1 Negative Polarity Items

Across the languages of the world, many indefinites may appear in negative clauses, polar questions, antecedents of conditionals and in standards of comparisons. This is, for instance, the case with the English any-series, as illustrated in (12). However, English any, apart from its free choice usages, is not restricted to these four contexts. In addition, English any may also appear in the restrictive clauses of universal quantifiers, yes/no-questions, or contexts introduced by at most N constructions or semi-negative adverbs, such as hardly:

\[(15)\]

a. Every student who knows anything about linguistics, will join the event

b. At most three students did any homework

c. John hardly likes any cookies
Many cross-linguistically attested indefinites are subject to the same or very similar licensing conditions. Examples are, for instance, the Hindi koi-series (‘any X’), the Serbian i-series (‘any X’), Japanese rokuna (anything), Greek tipota (anything), but virtually every language displays indefinites with such a distribution. Such indefinites are generally called Negative Polarity Items (NPIs), as the most prominent and frequent context in which they appear is negation. However, the set of licensing contexts turns out to be much richer and cannot be characterized by negation only. Nevertheless, the fact that the same distribution can be attested with many indefinites across languages strongly suggest that all these licensing contexts should have a common core.

The first and still one of the most important and influential proposals that tries to reduce all NPI licensing contexts to one single semantic property, is Ladusaw’s (1979) proposal, based on Fauconnier (1975), that all NPI licensers are Downward Entailing (DE). A context is DE if it allows inferences from sets to subsets. To illustrate what is meant by this, let’s first look at the examples in (16) and (17). In (16)a the first sentence entails the second one but not the other way round ((16)b). This is due to the fact that the set of shirts is a superset of the set of red shirts. The entailment here goes from a set to its supersets.

(16)  a. Mary is wearing a red shirt $\rightarrow$ Mary is wearing a shirt
    b. Mary is wearing a shirt $\rightarrow$ Mary is wearing a red shirt

However, in particular contexts these entailment relations can be reversed. These are DE contexts. This is shown for the negative contexts in (17) where the only valid inferences are now from a set to its subsets.

(17)  a. Nobody is wearing a red shirt $\rightarrow$ Nobody is wearing a shirt
    Nobody is wearing a shirt $\rightarrow$ Nobody is wearing a red shirt
    b. John is not wearing a red shirt $\rightarrow$ John is not wearing a shirt
    John is not wearing a shirt $\rightarrow$ John is not wearing a red shirt

(17), unlike (16), provides a DE context. (16) is actually Upward Entailing. However, DE-ness is not restricted to negative contexts. Also, the first (but not the second) argument of a universal
quantifier\textsuperscript{1}, semi-negatives, such as \textit{few}, and \textit{comparative} constructions are DE and license NPIs. Contexts like (the first argument of) some, many or regular adjectives are not DE:

\begin{itemize}
  \item[(18)] a. Every student went to bed $\rightarrow$ Every linguistic student went to bed
  \item[(a')] Some student went to bed $\neg \rightarrow$ Some linguistic student went to bed
  \item[(b)] Few people sing $\rightarrow$ Few people sing loudly
  \item[(b')] Many people sing $\neg \rightarrow$ Many people sing loudly
  \item[(c)] John ran faster than the students $\rightarrow$ John ran faster than the linguistic students
  \item[(c')] John is a fast student $\neg \rightarrow$ John is a fast linguistic student
\end{itemize}

Note that this distribution captures the distribution of \textit{any}-terms in terms of most of the functions (12)d-h. Direct negation, indirect negation, the conditional protasis and the standard of comparison are all DE, as well as a number of other contexts that are known to license NPIs.

Although Ladusaw’s proposal is to be considered a milestone in the study of NPIs, it faces several problems as well. The two most important ones are the following: (i) not every NPI is licensed in the same set of DE contexts; (ii) some NPIs can be licensed outside DE contexts as well. For our study of indefinites this means that there are indefinites that can only express a subset of the functions (12)e-h, as well as indefinites that express a superset of those functions. Let us look at examples of both types.

With respect to (i), it can be observed that some NPIs are subject to different licensing conditions than others. For instance, whereas English \textit{any}-terms seem to be fine in all DE contexts, indefinites belonging to the Dutch counterpart to the \textit{any}-series, the \textit{ook-maar}-series (literally ‘also but’), are ruled out in DE contexts like \textit{weinig} (‘few’):

\begin{itemize}
  \item[(19)] a. Nobody / few people ate \textit{anything}
  \item[(b)] \{Niemand / *niet iedereen / *weinig mensen\} heeft/hebben \textit{ook maar iets} gegeten

\end{itemize}

\begin{itemize}
  \item Nobody / few people has/have also but something eaten
  \item Dutch
  \item ‘Nobody / few people ate anything’
\end{itemize}

\textsuperscript{1} Quantifiers denote relations between two arguments: a nominal and a verbal argument. For instance, in every student sings, \textit{student} is the first argument and \textit{sings} is the second one. NPIs may only occur in the first argument of a universal quantifier. In the second argument, which is not DE, NPIs may not show up: *Every student who knows about linguistics, will join any event.
According to Van der Wouden (1994), elaborating on Zwarts (1995), this should not form a reason to think of indefinites like the Dutch *ook maar*-series as not being NPIs. In fact, it would be weird to do so, as these elements are in fact restricted to appear in negative contexts only. Van der Wouden argues that DE should be thought of as some layer of a negative hierarchy, where the true negation (*not*) forms the highest layer, followed by fully negative elements (elements, such as *nobody, nothing, no* that form a logical class on their own, sometimes referred to as the class of anti-additive\(^2\) elements), followed by the next layer, being DE-ness. NPIs, then, differ with respect to which layer of negativity is qualified to license them. English *any* is licensed in DE contexts (and thus in all negative contexts), others only in anti-additive contexts (such as the Dutch NPI *ook maar*) and some NPIs can only be licensed by the sentential negative marker.

With regard to (ii), Giannakidou (1997, 1999 *et seq.*) shows that whereas DE-ness is not always a sufficient condition for NPI licensing, it is not always a necessary condition for it either. For instance, the Greek indefinite *tipota* (‘anything’) can be licensed under modals meaning 'may' or 'want' or in subjunctive clauses (Giannakidou 1997, 1999, 2000). Similar observations have been made for Chinese (Lin 1996), Salish (Mathewson 1998), Navajo (Fernald & Perkins 2007) and Romanian (Falaus 2009). Apparently, DE-ness does not seem to be the weakest layer of negativity and therefore Giannakidou proposes, following Zwarts (1995), to further extend the hierarchy of negative contexts by another layer of negativity: non-veridicality (defined as in (20)).

(20) A propositional operator *F* is non-veridical if *Fp* does not entail or presuppose that *p* is true in some individual’s epistemic model (after Giannakidou 1997, 1999, 2010).

To illustrate this, *perhaps* (in (21)a) is a non-veridical operator whereas *unfortunately* (in (21)b) is veridical since a speaker uttering (21)a does not take the sentence *John is ill* to be necessarily true, whereas a speaker uttering (21)b does do so.

(21) a. Perhaps John is ill
   b. Unfortunately John is ill

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\(^2\) A function *f* is anti-additive iff it holds that \(f(A \text{ OR } B)\) is truth-conditionally equivalent to \(f(A) \text{ AND } f(B)\). For instance, *nobody* is anti-additive, since *nobody sings or dances* is true in the same situations as *nobody sings and nobody dances*. However, *not everybody sings or dances* is not always true when *not everybody sings and not everybody dances* is true. For instance, if half of the people dance and the other half sing, the former is false, but the latter is true. *Not everybody, therefore, is not anti-additive.*
Non-veridicality can be seen as an additional layer of negativity (even weaker than DE-ness) and may account for those NPIs that may also appear in non-DE contexts. A good example would be the earlier mentioned Mandarin Chinese NPI *shenme*, which can be licensed a non-veridical element, such as a modal adverb meaning ‘probably’:

\[(22)\] Mali zuotian *(haoxiang) mai-le senme shu
Mary yesterday probably bought-PERF what/any book
‘Mary has (probably) bought a book yesterday’

Hence, our investigation so far identified three subtypes of NPI indefinites: NPIs that can appear in DE contexts, NPIs that can appear in anti-additive contexts and NPIs that can appear in non-veridical contexts. NPIs like *any* that appear in DE contexts are generally referred to as weak NPIs. NPIs that can only appear in anti-additive contexts, as exemplified by the Dutch *ook maar*-series, and thus have a more restricted distribution, are called strong NPIs. And finally, NPIs like Mandarin Chinese NPI *shenme* that have a much more liberal distribution are known as superweak NPIs. The fact that the landscape of NPIs is rich and varied (and even richer and more varied that suggested in this brief overview) may at first sight give rise to the impression that NPI-thood is not a well-defined class and that therefore the various indefinites that are NPIs should not be taken to belong to one cluster. However, the fact that many indefinites receive the same morphological form in all DE contexts, or in a semantically well-defined sub- or superclass of DE contexts rather suggests that the opposite is true.

2.2.2 *Free-Choice Items*

English *any* is not just an NPI. It can also be used as a Free Choice Item (FCI), function (12)i in Haspelmath’s terms. FCIs are elements that express indifference or arbitrariness (in some form) with respect to a possible referent. Take the examples in (23):

\[(23)\]
\[\begin{align*}
\text{a.} & \quad \text{I’ll have} \textit{whatever} \text{you’ll be having} \\
\text{b.} & \quad \textit{Any} \text{ cat hunts mice} \\
\text{c.} & \quad \textit{Irgendjemand} \text{ hat angerufen}^3 \\
& \quad \text{German FC.person has called}
\end{align*}\]

\[^3\text{ Taken from Kratzer & Shimoyama (2002)}\]
‘Some person called’

In all these examples the speaker does not seem to impose any restrictions on the set of possible referents induced by the free-choice element.

The fact that members of the English *any*-series can be used both as NPIs and as FCIs is no coincidence. In many languages indefinites display both NPI and FC effects, such as Serbo-Croatian *ko bilo* (‘anybody’), Malagasy *na inona na inona* (or what or what ‘anything’, cf. Paul 2005), English *any* being the most stereotypical example. English *any* may surface, as exemplified in (23), in (a limited number of) positive contexts, as long as it acts as an FCI. For this reason, NPIs and FCIs are often analyzed on a par, the immediate question being whether English *any*, as well as other elements that may manifest both FC and NPI behaviour, are lexically ambiguous or have a single lexical representation. Here one could suggest that two groups of functions that look semantically quite different, should actually be subsumed under the same group for morphological reasons. However, it should be noted that there are NPIs, such as English *ever*, that lack a FC effect, or FCIs that lack an NPI effect, such as Spanish *cualquiera*. This suggests that FCIs and NPIs can form a unified class, but at the same time they should still constitute two independent subclasses, even within a language where NPIs and FCIs are syncretic.

As Alonso-Ovalle & Menendez-Benito (t.a.) point out in their overview of FCIs and other indefinites, the major difference between FCIs and NPIs is that NPIs generally have an indefinite interpretation, but FCIs seem to behave more like universals rather than indefinites. This is shown in (24), taken from van Rooij (2008), where both examples convey that all students in Mary’s class are working on NPIs, not just some, albeit it that the example containing *any*, but not the one with *every*, comes along with a sort of ‘and that’s not an accident’ implicature.

(24)  a. Any student in Mary’s class is working on NPIs.
     b. Every student in Mary’s class is working on NPIs.

The question as to why FCIs receive an apparent universal force is related to the question whether FCIs and NPIs should indeed receive a unified analysis. A number of researchers have aimed to unify the two uses of *any* by proposing that this item is an indefinite, one of the reasons being that morphologically such FCIs resemble NPIs and not universal quantifiers.

On these approaches, the universal force attested in the free choice use comes about via the kind of pragmatic strengthening effect that is generally also said to underlie NPI-hood (cf. Kadmon
(24) a is stronger than A student in Mary's class is working on NPIs. As for them the same effect that drives NPIs to be subject to certain licensing constraints is responsible for the FC effects, Kadmon & Landman take FCI any and NPI any to be a single lexical item. On similar grounds, Chierchia (2006), Aloni (2007a), Aloni & Van Rooij (2007), Van Rooij (2008) and Dayal (2013) also opt for a unified analysis of FC and NPI any. All of these are thus cases where morphological considerations underlie semantic analyses.

In earlier work, Dayal (1998, 2004, 2009) has proposed to break with the idea that FCI any is an indefinite and to analyse it instead as a universal quantifier. FCI any and NPI any in her view are homophonous. Also Sæbø (2001) and Menéndez-Benito (2005, 2010) have proposed to take NPIs and FCIs to be different types of elements. Apart from the fact that the attested homophony between FCIs and NPIs would remain unexplained, a problem with analyses that are based on a treatment of FCIs like any as a universal quantifier, indicated by Giannakidou (2001), is that the universal reading of FC any is not always available. Example (25) does not mean: pick every card.

(25) Pick any card

Thus for Dayal and others who maintain the idea that FCIs are underlyingly universals, it is necessary to derive the indefinite reading of FC any from an underlying universal semantic representation and the reader is referred to Dayal (1998, 2004, 2009) for the specifics of her proposal.

Hence, even though it is not clear whether NPIs and FCIs indeed have a joint semantic core (as the widely attested morphological overlap between NPI and FCI indefinites would suggest), most existing analyses at least seem to point in that direction.

2.2.3 Negative indefinites

Another type of indefinite, again strongly related to NPIs, concerns negative indefinites (function (12)d for Haspelmath). A negative indefinite is an indefinite that takes direct scope under negation, just like an NPI. The difference between NPIs and negative indefinites is that negative indefinites seem to have a negation as part of their morphology and semantics. They are generally negatively
marked and they are also able to (at least in certain contexts) to render sentences negative. NPIs do not have this ability.

In some languages, this negation appears to be part of the lexical semantics of a negative indefinite. This is shown in (26) for Dutch, where, whenever the negative indefinite is embedded under another negation or negative indefinite, a second semantic negation is introduced:

\[(26)\]
\[
\begin{align*}
a. & \quad \text{Niemand belt} \\
& \quad \text{Neg-body calls} \\
& \quad \text{‘Nobody calls’} \\
b. & \quad \text{Suzanne belt } \textit{niet niemand} \\
& \quad \text{Suzanne calls neg neg-body} \\
& \quad \text{‘Suzanne doesn’t call nobody’ = ‘Suzanne calls somebody’} \\
c. & \quad \text{Niemand belt } \textit{niemand} \\
& \quad \text{Neg-body calls neg neg-body} \\
& \quad \text{‘Nobody calls nobody’ = ‘Everybody calls somebody’}
\end{align*}
\]

However, in many other languages things work differently. Take Italian, for instance. As is shown in (27), even though both \textit{non} (‘not’) and \textit{nessuno} (‘nobody’) yield a semantic negation in (27)a and (27)b respectively, jointly they do not yield two semantic negations, but only one, as shown in (27)c:

\[(27)\]
\[
\begin{align*}
a. & \quad \text{Gianni } \textit{non} \text{ ha telefonato} \\
& \quad \text{Gianni neg has called} \\
& \quad \text{‘Gianni didn’t call’} \\
b. & \quad \textit{Nesssuno} \text{ ha telefonato} \\
& \quad \text{Neg-body has called} \\
& \quad \text{‘Nobody called’} \\
c. & \quad \textit{Non} \text{ ha telefonato } \textit{nessuno} \\
& \quad \text{Neg has called n-body} \\
& \quad \text{‘Nobody called’} \\
d. & \quad \textit{Nesssuno} \text{ ha telefonato a } \textit{nessuno} \\
& \quad \text{Neg has called to neg-body} \\
& \quad \text{‘Nobody called anybody’}
\end{align*}
\]
Sentences (27)c-d contain two negative elements, but semantically they contain only one negation. This phenomenon is known as Negative Concord (NC). Italian is thus an NC language. This means that negative indefinites, such as *nessuno*, even though they morphologically belong to the same class of negative element as, for instance, Dutch *niemand*, their semantic properties are quite different. Negative indefinites that can yield a semantic negation in some contexts, but are also able to participate in NC relations are called *neg-words* (or *n-words* after Laka’s 1990 terminology). The morphological cluster of negative indefinites thus exists of at least two different subtypes: plain negative indefinites that always induce a negation of its own, and neg-words that only sometimes do.

Italian is not the only language that displays this phenomenon. In fact, many other languages are NC languages. Within the Indo-European language family, most Romance and Slavic languages are NC languages, as well as Hungarian, Greek and Turkish. As shown in Haspelmath (1997), Zeijlstra (2004) and Giannakidou & Zeijlstra (2017), numerous NC languages can be attested outside the Indo-European language family as well.

Generally, the major question for scholars investigating NC is whether neg-words are semantically negative or not. This is, of course, of great importance for the proper classification of different indefinites. If both plain negative indefinites and neg-words are semantically negative, their morphological and semantic characteristics would naturally align. If not, we would find a discrepancy between plain negative indefinites and neg-words: morphologically the latter would belong to the class of negative indefinites, but semantically they would exhibit more similarities with NPIs. That would then mean that the taxonomy we provided for English in (14) might not extend to NC languages like Italian, where neg-words should then be conceived of as special types of NPIs.

To see this, let’s look again at the Italian examples in (27)b-c. On the basis of the example in (27)b, one would expect that *nessuno* simply means something like ‘nobody’, just like plain negative indefinites; otherwise the negativity of the sentence could not be accounted for. Naturally, (27)c forms a problem for this assumption, as then the meaning of the sentence does not any longer follow compositionally. On the basis of (27)c one would rather assume that *nessuno* is an NPI like ‘anybody’, which readily predicts the proper meaning of the sentence. However, under this assumption, the negative meaning of (27)b is completely unexpected.

These assumptions and related problems are representative for existing analyses of NC. Some scholars (e.g., Haegeman & Zanuttini 1991, 1996, Haegeman 1995, De Swart & Sag 2002) take neg-words to be semantic negative quantifiers (like the ones in Dutch) and try to account for
the compositionality violation in (27)c by means of some negative absorption mechanism (where all negations melt together into one big negative quantifier). Other scholars (e.g., Ladusaw 1992, Giannakidou 2000, Zeijlstra 2004, 2008a,b, Haegeman & Lohndal 2010) rather focus on (27)b, and argue that this shows that neg-words are indeed very similar to NPIs. For these scholars, (27)c is problematic and they have to argue that in this case negation is covertly present. Not everybody takes either one of these more rigid perspectives, though. Herburger (2001) has argued that neg-words are ambiguous between semantically negative elements and semantically non-negative elements. Such an account would then say that in (27)b nessuno is a negative indefinite, that in (27)c nessuno is an NPI, and that in (27)d the first nessuno is a negative indefinite and the second one an NPI. Then, despite the morphological uniformity, neg-words would be lexically ambiguous between elements with virtually opposite meanings.

Evidence that neg-words are semantically close to NPIs, comes from the intricate ways they can interact with other NPIs in. In some NC languages, the presence of a neg-word may block the presence of an NPI. In Polish, for instance, NPIs belonging to the kogo-Wh-series are in principle fine in DE contexts, but may not appear in an anti-additive context (where neg-words are licensed as well):

(28)  a. Jeśli *nikt / ktokolwiek przyjdzie, daj mi znać.
      if *neg.body / anyone comes let me know
      ,'If anyone comes, let me know’

      b. Ewa nie spotkała nikogo /*kogokolwiek.
      Eve NEG met no.body /*anyone
      ,'Eve didn’t meet anyone’

This phenomenon, introduced by Progovac (1988, 1994), is known as the Bagel effect. ‘Bagel NPIs’ can only be licensed in DE contexts that are not anti-additive. Since in the negative hierarchy, the set of anti-additive contexts is a clear subset of the set of DE contexts in a Venn diagram, the set of licensing contexts therefore takes the shape of a bagel:

(29)   The bagel pattern (where the white set of anti-additive elements is a subset of the originally black set of DE elements. Removing the white set from this black set yields the bagel pattern:
Scholars have provided different explanations for the Bagel effect, though. For some (Uribe-Etxebarria 1994; Pereltsvaig 2006) it is an instance of (morphological) blocking: the presence of a more restricted neg-word blocks the presence of a less restricted NPI. That means that neg-words and NPIs should stand in morphological competition.

For others (Van der Wouden 1994), NPIs have a different property that bans them in anti-additive contexts. Elements that are banned from certain negative contexts are generally referred to as Positive Polarity Items (PPIs, elements that may only appear in contexts that count as positive, see section 2.2.4). For this reason, scholars that take PPI-hood to be the source of the Bagel effect address the NPIs involved as so-called bi-polar polarity items: they are both PPIs and NPIs: they are restricted to DE contexts, but are banned from anti-additive contexts. The Bagel-effect, then, would not result from morphological competition but be more indirect in nature.

Another solution tries to derive the Bagel-effect from the semantics of non-specific indefinites whose semantics involves concession by arbitrary or disjunctive choice (Błaszczak 2003). Again, this would not allow them to appear in anti-additive contexts. An argument for the latter approach comes from the fact that all NPIs that trigger Bagel-effects can also be used as FCI.

Note that what the proper analysis of this Bagel effect turns out to be, has, again, serious repercussions for the relation between semantics and morphology. If the Bagel effect indeed calls for a treatment of neg-words as NPIs, this would form a strong argument for separating neg-words from the class of negative indefinites and in favour of having them belong to the class of NPIs instead. Also, if the Bagel effect forces us to semantically think of NPIs in these languages as PPIs or FCIs, the class of affective items should be modified accordingly. Hence, only when it is clear how to analyse NC and Bagel effects can the position and composition of the class of negative indefinites, NPIs and FCIs within the overall taxonomy of indefinites be fully determined.

2.2.4 Positive or existential indefinites

FCIs, NPIs and neg-words all share that their distribution is restricted to certain contexts: negative
DE contexts for NPIs/neg-words; modal and related contexts for FCIs. There are also many existential indefinites that appear to be freer in their distribution. Such indefinites are also fine in non-negative or non-modal contexts. Strikingly, such indefinites also often form a single morphological class, like the some-series in English. However, several of such positive indefinites cannot appear in all contexts.

Many positive indefinites, including the members of the English some-series, are so-called Positive Polarity Items (PPIs). PPIs are restricted to positive contexts only (Jespersen 1917, Baker 1970, Progovac 1994, Van der Wouden 1994, Giannakidou 1997, 2010, Haspelmath 1997, Szabolcsi 2004, amongst many others).

Take the examples in (30). Somebody in (30)a cannot take scope below negation: the sentence cannot mean that Mary saw nobody, only that there is somebody that Mary didn’t see. And somewhat in (30)b cannot even appear in a sentence that is negative.

(30)  a. Mary didn’t see somebody
       *’Mary saw nobody’
       ‘There is somebody Mary saw’

   b. I am (*not) somewhat ill

What PPIs thus show is that they cannot scope below negation. In that sense, they appear to be the mirror image of NPIs, and various proposals have thought to understand the behaviour of PPIs in terms of anti-licensing (Ladusaw 1979, Progovac 1994 amongst others). On the other hand, it has been claimed by many, most notably by Van der Wouden (1994), Szabolcsi (2004), Ernst (2009) and Giannakidou (2010a), that existential PPIs behave rather differently from NPIs and therefore should call for a different theoretical treatment. Evidence for this comes from the fact, already noted by Jespersen (1917) and discussed in Baker (1970) that PPIs, surprisingly, are fine under the scope of two DE/negative operators, strikingly an environment where NPIs are generally licensed as well (though see Homer 2011 for an alternative view):

(31) I don’t think that John didn’t call anyone/someone       \( \neg \rightarrow \neg \rightarrow \exists \)

A particular kind of PPIs concerns modal indefinites. Examples, taken from Alonso-Ovalle & Menéndez-Benito (t.a.) are presented in (32).
These indefinites have a clearly existential interpretation, but also introduce certain modal effects. Some modal indefinites, generally referred to as epistemic indefinites, infer speaker’s ignorance. (32)a means that the speaker does not know who this doctor is.

Other modal indefinites, known as random choice indefinites, signal agent-oriented indiscriminate choice. (32)b conveys that the choice made by Juan is random; he could just have bought another book as well. In many languages (like Spanish), modal indefinites are always morphologically specified for a particular type of modality: algún is always epistemic, whereas uno cualquiera always expresses agent-oriented modality. However, in other languages modal indefinites can have both readings. For instance, German irgendein can convey both types of modality. Here, morphological considerations call for a unified treatment of modal indefinites with two subclasses: epistemic indefinites and random choice indefinites.


2.3 Extension: Definite Pronouns

What we have seen so far is that Haspelmath’s original semantic division into nine different functions of indefinites is not explicit about the relations between these different functions. Closer inspection reveals that these nine functions fall under four groups of functions: (i) Negative Polarity
Items; (ii) Free-Choice Items; (iii) negative indefinites; and (iv) positive or existential indefinites. Evidence for this classification is both morphological and semantic in nature. Where morphological correspondences between the kinds of functions that indefinites may express call for a classification along the lines sketched before, such classifications turn out to be semantically well motivated too. The question as to how to demarcate the landscape of indefinites thus does not depend on semantic differences alone. Morphological differences have been at least as much telling. Hence, only the interplay between morphological and semantic properties can provide serious answers to how to define indefinites and the various forms and functions that these may take on. At the same time, as was especially made clear in the discussion of negative indefinites, it is not entirely clear yet how every morphological form maps with its semantic functions. Certain elements that morphologically appear to belong the class of negative indefinites may actually turn out to form a subclass of other classes. Clearly, further research is called for.

Overall, then, the hypothesis (introduced in the introduction) that a theory of pronouns requires looking into morphologically rich and poor languages, has proved to be successful in two ways: (i) it helps us in defining a template of semantic functions underlying both morphologically rich and poor languages, and (ii) it helps to identify particular morphological and/or semantic questions, as we have seen with negative indefinite. In the remainder of this section, we will show how the same strategy can be applied to definite pronouns. Although we will abstain from an exhaustive overview of all definite pronouns, we will sketch how again an interplay between languages with rich and with poor pronominal inventories provides us with insights into the structure of the definite pronoun system, thereby focussing on two specific semantic functions that language either do or do not spell out by dedicated morphological forms.

2.3.1 Definite pronouns

As a starting point, we base ourselves on the influential work by Harley & Ritter (2002), who provide a feature geometry intended to capture the underlying feature system used by rich and poor languages alike.
Pronouns are generally specified for person and number. In this feature system, the PARTICIPANT node encodes information usually captured by the term ‘person’ and INDIVIDUATION encodes number information. This feature system in a way represents the various semantic/syntactic functions/properties that pronouns may exhibit. Here, we will not go over the motivation of this entire representation but focus on one person and one number property that languages do or do not express morphologically: the inclusive/exclusive distinction among first person pronouns (section 2.3.1) and dual pronouns (section 2.3.2).

2.3.1 The inclusive/exclusive distinction

In English and many other languages, the 1st person plural pronoun (we) is ambiguous. It can either refer to the speaker and the person(s) addressed by the speaker, or it can refer to the speaker and some other person(s) but not the addressee(s). With respect to the addressee, then, we has both an inclusive and exclusive interpretation. This is in contrast to languages in which inclusive and exclusive we are realised in morphologically different ways. An example of such a language is Kalihna, which has the paradigm in (34):

<table>
<thead>
<tr>
<th>(34)</th>
<th>singular</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st person excl.</td>
<td>au</td>
<td>aʔna</td>
</tr>
<tr>
<td>1st person incl.</td>
<td>kïxko</td>
<td>kïxka:ro</td>
</tr>
<tr>
<td>2nd person</td>
<td>amo:ro</td>
<td>amiïyaro</td>
</tr>
<tr>
<td>3rd person</td>
<td>moxko</td>
<td>moxka:ro</td>
</tr>
</tbody>
</table>
Hence, the inclusive/exclusive distinction is a straightforward illustration of the situation sketched in the introduction, where morphology either spells out the subfunctions or the superfunction, as depicted in (35):

(35)  
\[ \text{1st person plural} \rightarrow \text{English we} \]

\[
\begin{array}{c|c}
\text{exclusive} & \text{inclusive} \\
\downarrow & \downarrow \\
\text{Kalihna aʔna} & \text{Kalihna kïxka:ro} \\
\end{array}
\]

Note that Kalihna also has an inclusive/exclusive distinction in the singular, where the inclusive form kïxko refers to the speaker and the addressee and the exclusive form au just to the speaker. This raises the following issues. First of all, the fact that English I is not ambiguous between an inclusive and exclusive reading means that we cannot describe the singular parts of the paradigms of English and Kalihna in a way similar to (35): If English were to express general 1st person singular, which in Kalihna is expressed with either an exclusive or inclusive form, we would expect I to be as ambiguous as we, contrary to fact. Second, if kïxko refers to speaker and addressee, it cannot truly express singularity, which involves reference to a single individual. This suggests that ‘singular’ and ‘plural’ are outdated, descriptive terms (a point also explicitly made in Harbour 2016). It is important to realise, therefore, that identifying super- and subfeatures is just a first stab towards the proper analysis of the underlying feature system. Let us therefore look at how Harley & Ritter analyse these data.

The proposal is that 1st person pronouns contrast with 2nd person pronouns and that inclusive forms share a property with both (see also Dalrymple & Kaplan 2000:784). Whereas 1st person pronouns are Referring Expressions (REs) that spell out a Speaker feature, and 2nd person pronouns spell out an Addressee feature, inclusive forms spell out both. The forms in (35) are analysed as in (36), where Participant (or, person) features reside on the left branch and individuation (or, number) features on the right branch. Since these are plural pronouns, they carry the individuation feature [Group], so as to indicate that they refer to more than one individual.
The form aʔna does not have an inclusive interpretation in Kanahni because it lacks the addressee feature which the contrasting form kïxka:ro has. English we, on the other hand, lacks a contrasting [Speaker, Addressee] form altogether. This, Harley & Ritter argue, results in an ambiguous interpretation for we. It refers to a group that includes the speaker but leaves undetermined whether the addressee is included in that group.

In contrast, the 1\textsuperscript{st} person singular forms have the feature [Minimal] instead of [Group]. [Minimal] is roughly the opposite of [Group] but not identical to ‘singular’, as we shall see.

The inclusive form kïxko, then, carries both the [Speaker] and [Addressee] feature and refers to the minimal number of individuals compatible with that feature make-up, which is two. This is in contrast to au, which lacks [Addressee] and therefore can only refer to the speaker. The English form I, like au, only expresses [Speaker], and the minimal number of individuals that it can refer to is one. As a consequence, English I only refers to the speaker and cannot have an inclusive interpretation too, as was the case with we, because we expresses [Group] instead of [Minimal].

In short, a rich language like Kalihna provides evidence for the existence of not just 1\textsuperscript{st} and 2\textsuperscript{nd} person but of a person sharing properties with both, whereas a poor language like English suggests that languages can leave a property underdetermined in that part of the representation where the difference between inclusive and exclusive is being made. Harley and Ritter capture this by adding an [Addressee] feature to the participant node in Kalihna and by not doing so in English.
In English, the difference between *he* and *they* is that *he* is singular, referring to a singular (male) individual, and *they* is plural, referring to a group. Plural pronouns like *they* do not specify if the group consists of two members or more. They are ambiguous in this sense, which is in contrast to languages in which exactly this difference is morphologically distinguished. Such a language is Tonkawa, which has the paradigm in (38), which includes so-called duals:

\[(38)\]

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>dual</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1\textsuperscript{st} person</td>
<td>ca'ya</td>
<td>gueca'ya</td>
<td>gueca'ga</td>
</tr>
<tr>
<td>2\textsuperscript{nd} person</td>
<td>na'ya</td>
<td>wena'ya</td>
<td>wena'ga</td>
</tr>
<tr>
<td>3\textsuperscript{rd} person</td>
<td>'aye'la</td>
<td>'awe'la</td>
<td>'awe'ga</td>
</tr>
</tbody>
</table>

(Hoijer 1933:122)

The form *gueca’ya*, for instance, refers to the speaker and one other individual, whereas *gueca’ga* refers to a group larger than two that includes the speaker. Note that *gueca’ya* is not an inclusive form because it does not have to refer to the speaker and the addressee. In this sense, *gueca’ya* is as ambiguous as English *we*. Duals, then, add a category to the number dimension, where inclusives added a category to the person dimension.

Recall that Harley & Ritter use the features [Minimal] and [Group] to capture the number contrast. In order to describe dual forms, they use the trick that they also used in the person domain in order to capture the inclusive/exclusive distinction: combine both features into one form. Duals, then, are represented as a featural hierarchy that includes both [Minimal] and [Group], thereby naturally capturing what a dual is: a minimal group. This gives us the following 1\textsuperscript{st} person forms for Tonkawa:

\[(39)\]

\begin{align*}
\text{a. singular} & \quad \text{b. plural} & \quad \text{c. dual} \\
\text{Part} & \quad \text{Ind} & \quad \text{Part} & \quad \text{Ind} & \quad \text{Part} & \quad \text{Ind} \\
\text{Speaker} & \quad \text{Min} & \quad \text{Speaker} & \quad \text{Group} & \quad \text{Speaker} & \quad \text{Group} & \quad \text{Min} \\
\text{ca’ya} & \quad \text{gueca’ga} & \quad \text{gueca’ya} \\
\end{align*}
English has the representation in (39)a for I, as we saw in (37)c, and representation (39)b for we, as we saw in (36)c. Since English we has no contrasting form that includes both [Minimal] and [Group], we is ambiguous about how large the group is.

Whereas a poor language like English has a singular-plural distinction, a richer language like Tonkawa has something in between. The fact that English plural pronouns are ambiguous about the size of group they refer to suggests that they lack a featural combination exploited by Tonkawa. It is the combination of English and Tonkawa, then, that leads to the analysis proposed by Harley & Ritter.

To conclude, rich languages give us more categories in both the person and number dimensions of pronominal distinctions, as we have seen, but the comparison with poor languages again provides us with the full ingredients for a theory that naturally combines rich and poor systems. Concretely, the two types of languages together provide us with the idea that dual and inclusive forms combine properties of forms that can be distinguished in the rich languages.

Another way of characterizing English in relation to Kanahni and Tonkawa is as a language with syncretic forms. Whereas Kanahni has specialized inclusive/exclusive forms and Tonkawa has specialized forms to express duals, English expresses the relevant notions using forms already used elsewhere in the paradigm, namely as forms expressing non-dual, exclusive first persons. Syncretism is a well-studied topic in the area of verbal agreement and it is here that interesting parallels might be drawn. It has for instance be observed that in a system with three person distinctions 1-2 and 2-3 syncretisms are profoundly more common than 1-3 syncretisms (Baerman et al 2005, Baerman & Brown 2011, see also Ackema & Neeleman 2013). This strongly suggests a featural analysis in which 1\textsuperscript{st} and 2\textsuperscript{nd} person share a feature, as well as 2\textsuperscript{nd} and 3\textsuperscript{rd} person, making the 2\textsuperscript{nd} person the in-between form.

**Further reading**


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