

There will always be number!

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The goal: It is a well-attested fact that natural languages show a great deal of variation with respect to the properties of personal pronouns. While the morphological properties of pronominal features (i.e. person, number) have been explored to a great extent (cf. Greenberg 1963; Cysouw 2003; Harley and Ritter 2002, and others), and while the full range of possibilities for person and number has been sketched out providing insights as to the maximum set of features that a natural language could employ, (cf. Harley and Ritter 2002), the questions remain (i) is there a set of pronominal features that all languages *must* incorporate? and (ii) what kind of features would such a set contain? This naturally leads to the central goal of this inquiry, which is to determine the most minimal pronominal system possible on the basis of the hitherto documented facts. Ultimately the outcome of this inquiry provides the necessary empirical basis for the development of a coherent theory of the nature of linguistic knowledge underlying the wide range of morphological realizations of pronominal features that we find in natural languages.

Previous claims: The outcome of this inquiry has consequences for a range of other issues. For example, in the literature the questions pertaining to the most minimal pronominal system have been raised on several different occasions in which they are framed within the issue of whether or not the number feature is universally present in the systems of free pronouns. For instance, Everett (2005) claims that the pronominal inventory of Pirahã does not make number distinctions, challenging Greenberg's universal 42: 'All languages have pronominal categories involving at least three persons and two numbers' (Greenberg 1963:96). Furthermore, the 'no number' claim was (tacitly) assumed by Harley and Ritter for the development of a system which predicts languages that do not exhibit number features (2002:501-2). In contrast, the most minimal pronominal system has also been assumed to make the number distinctions *only* in the first person (Ingram 1978; Cysouw 2003). Thus, there are conflicting views as to the lower boundary on feature systems. In this paper we show that number *must* be within the lower boundary despite its morphological absence in some languages, confirming Greenberg's intuitions.

The features of the most minimal pronominal system have also been tied to the morpho-syntactic realization of agreement features (cf. Koenenman and Zeijlstra, to appear). Arguing for the strong version of the so-called *Rich Agreement Hypothesis* Koenenman and Zeijlstra claim that subject-verb agreement features are generated as a separate syntactic projection if and only if the agreement features in the verbal paradigm reflect at least those features found in the most minimal pronominal system. They argue that the subject-verb agreement projection is an instantiation of grammaticalized argumenthood, comparable to projections such as tense and aspect. Thus, the correctness of their proposal depends on what is the most minimal system, which for empirical reasons they take to be Greenberg's formulation.

The Data: In this paper we provide the results of a crosslinguistic survey which sought to determine the most minimal set of features that all languages must incorporate in their pronominal systems. The data are mostly drawn from 'Free Personal Pronoun System database' Smith 2013, an online database documenting free pronouns in 456 languages. The survey reveals two important observations. **First**, languages which lack

person or number features in their paradigms of free pronouns systematically compensate for this by realizing the missing features in the agreement morphology, suggesting that the grammar *does* encode the pronominal features that appear absent at first sight. For example, only verbs in languages like Winnebago in (1) and Wāmbule in (2) mark the person and number features that are missing in the free pronouns. **Second**, languages which have been reported to lack morphological number features in both free pronouns and agreement paradigms, such as Classical Chinese (cf. Norman 1988:120), implicitly specify the number feature by constraining particular pronouns to referents which have specified number. For instance, Classical Chinese has a set of singular pronouns which must be linked to singular referents. First person pronouns *yú*, *yǔ*, *yí*, *zhèn* and the second person pronoun *rǔ* cannot be linked to plural referents (Meisterernst 2012). This suggests that the singular-plural distinction must be present in the system, even though the language altogether lacks plural pronouns.

Importantly, the two observations come unexpectedly only for those theories which do *not* take number to be a part of the minimal set of pronominal features (e.g. Harley and Ritter 2002). Indeed, there are systems with extensive morphological gaps, e.g. lacking plural altogether. However, all languages that have been hitherto investigated include pronouns specified for a specific number indicating that the implicit knowledge of other number features must be present, despite the fact that they are morphologically absent.

Analysis: There are two ways of analyzing languages which exhibit particular pronominal features only on the verb, such as Winnebago and Wāmbule. (i) the pronominal features are spread out over multiple syntactic nodes, e.g. some of the φ -features surfacing only in the ‘impoverished’ free pronouns (FP), while others only in the affix on the verb at I^0 , illustrated in (3). (ii) free pronouns are underlyingly specified for all three pronominal features [speaker], [participant] and [plural] but that some feature(s) are not phonologically realized, illustrated in (4). Unlike the analysis in (3) where all features are semantic (i.e. interpretable), in (4) the features on the verb are formal (i.e. uninterpretable), which are checked as a result of the subject-verb Agree operation.

The analysis in (4) is comparable to the standard *pro*-drop analysis in the sense that the semantic features of the subject are morphologically unrealized. However, unlike *pro*-drop, what we see in languages like Wāmbule is that only particular pronominal features (but not all) are dropped resulting in homophonous forms of pronouns for subjects of varying φ -feature specifications. What this suggests is that a *pro*-drop analysis in principle is able to account for the analysis in (4), without additional theoretical machinery. In contrast the split-semantics in (3) requires additional stipulations to account for the counter-intuitive nature of the semantic features of *one* pronominal argument realized on multiple syntactic nodes, making it less desirable.

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| <p>(1) <i>Winnebago</i></p> <p>a. nee ha- šgác
1/2 1.SG- play
‘I play’</p> <p>b. nee ra- šgác
1/2 2.SG- play
‘You play’</p> | <p>(2) <i>Wāmbule</i></p> <p>a. ungu hep i bi -l jā: -∅ -me
1 cooked.grain your SOC -LOC eat -1.SG -RES
‘I eat rice at your place’</p> <p>b. Un im bī -l cāmdo pā -sī cāb -du -m
2 that SOC -LOC game do -INF can -2.SG -RES
‘You.sg can play with that [boy].’</p> |
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- (3) $[_{IP} FP_{\left[\begin{smallmatrix} \text{speaker} \\ \text{particip.} \end{smallmatrix} \right]} [_{I'} I^0_{\left[\text{plural} \right]} [_{vP} \dots]]]$ (4) $[_{IP} FP_{\left[\begin{smallmatrix} \text{speaker} \\ \text{particip.} \\ \text{plural} \end{smallmatrix} \right]} [_{I'} I^0_{\left[\text{+plural} \right]} [_{vP} \dots]]]$

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