The Emergence of the Unmarked Pronoun II

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In pre-OT generative syntax, unlike phonology, markedness theory has had only a marginal role in theory development.[2] Yet appeals to markedness are often implicit in generative syntactic argumentation. For example, Baker (1993) argues in favor of his syntactic theory of noun incorporation that all noun-incorporating languages have free NPs and many languages with free NPs have no noun incorporation. This is a classic markedness asymmetry, indicating that among inventories of nominal expressions, morphologically bound nominal stems are marked and free NPs are unmarked. Baker takes it as evidence that incorporated nouns are transformationally derived from free NPs by syntactic head movement. Indeed, the entire motivation for syntactic movement can be seen to be based on the idea that there are 'canonical', unmarked phrase structure positions in which arguments receive their logical interpretations (or 'theta roles'), and that the more marked structures are derived from these by structure-modifying rules. What generative syntax has tacitly developed is a derivational theory of markedness in which marked structures are represented as transformationally complex structures. In contrast, OT offers a radically

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[2]Explicit markedness proposals in generative syntax have mainly involved imposing preference structures on parameter settings (e.g. Chomsky 1981, Harbert 1986) or formally implementing the 'elsewhere principle' in terms of feature underspecification and rule ordering (as discussed in Bresnan 1997b). See Battistella 1996, Moravcsik and Wirth 1986.

different approach to markedness based on the typology of outputs rather than the derivation of marked outputs from unmarked inputs, and this has led to a fully nonderivational phonological theory of markedness. Thus in phonology, the asymmetrical distribution of voicing across inventories of obstruents—the generalization that no languages lack voiceless obstruents while some languages lack voiced obstruents—is not captured derivationally. Instead of assuming that voiced obstruents are derived by rule from the underlying structures of their voiceless counterparts, phonologists now standardly assume structural markedness differences among possible outputs (Steriade 1995).

Can we have a nonderivational theory of syntactic markedness similar to current theories of phonological markedness? This question is addressed in Bresnan (1997a,b). Bresnan (1997a) proposes a simple markedness theory of bound, free, and zero pronominals which can explain the emergence of the unmarked pronoun in situations where the more marked pronominal forms otherwise required are unavailable. The theory derives the following two crosslinguistic markedness generalizations about pronominals:

(1) **Markedness relations of pronominal forms (Bresnan 1997a):**

a. "... no language lacks free forms while some languages may lack bound forms ..." (Carstairs-McCarthy 1992: 165–6)

b. No language lacks free forms, while some languages may lack zero forms.

This theory implies that in languages with both bound and free pronominals, the free pronominal is unmarked, and this consequence is illustrated by the emergence of the unmarked pronoun in Chicheŵa: free pronouns can replace pronominal inflections only in contexts where the latter are blocked.

In the present work I further develop and exemplify this theory and consider apparent counterexamples to (1).

1 Pronominal Form and Pronominal Content

I will assume without argument that elements which function as definite personal pronouns are not structurally uniform across languages, but show formal variation, as schematized in (2).[3]

[3]In what follows the terms 'pronoun'/'pronominal', and 'personal pronoun/pronominal' will be understood to refer to definite personal pronouns/pronominals. Indefinite pronouns

(2) **Range of personal pronominal forms:**

Zero Bound Clitic Weak Pronoun

'Zero' designates pronominals having the null structure; 'Bound' designates morphologically bound pronominals, also called pronominal inflections, which are expressed by affixal structure on a head; 'Clitic' refers to elements that have a specialized syntactic position and are phonologically bound to a host ('special clitics' in Zwicky's (1977, 1985) sense); 'Weak' pronouns are free forms, neither phonologically nor morphologically bound to another constituent, but they are atonic. Pronouns are also free but may receive primary sentence accents. Weak pronouns are distinguished from unaccented pronouns here only if they differ in form and syntactic distribution.

On this assumption, what universally characterizes a pronoun are its referential role and functions, not its syntactic category. This assumption is in accordance with typologically oriented work from a variety of traditions, including functional syntax (e.g. Givón 1976, 1983, 1984, 1990, 1995, Nichols 1986, Van Valin 1996), lexical functional grammar (e.g. Mohanan 1982, Simpson 1983, 1991, Kameyama 1985, Bresnan and Mchombo 1986, 1987, Andrews 1990, Austin and Bresnan 1996, Bresnan 1995, forthcoming), Optimality Theoretic syntax (Grimshaw and Samek-Lodovici 1995, Samek-Lodovici 1996, Bresnan 1997a,b), and some work in the Minimalist Program (Everett 1996). All of this work analyzes the variety of pronominal forms as alternative 'surface' forms of expression (or outputs) not differing in derivational complexity.

Pronouns can be identified crosslinguistically by their semantic, information structural, and morphosyntactic properties. The major types of these properties are schematized in (3).

(3) **Crosslinguistic properties of personal pronouns:**

PRO — variable referentiality
TOP — topic-anaphoricity
AGR — classification by person, number, gender

'PRO' stands for the semantic properties of variable reference and minimal descriptive content shared by all personal pronominals. 'TOP' abbreviates the information-structural functions of personal pronouns such as specialization

are not included in the present study. As in Bresnan (1997a), agreement is also omitted from general consideration.

for reference to topical elements (Givón 1976, 1983, 1984, 1990: 916ff). 'AGR' represents the classificatory dimensions by which personal pronominals are morphologically distinguished—person (allowing for participant deixis and inclusion/exclusion relations among participants), number (singular, dual, paucal, and plural), and gender (classifications into kinds) (Givón 1984: 354–5); this property is abbreviated by AGR in (3). Not all pronouns need have all these features.[4]

Personal pronouns can be represented independently of their forms of expression by using feature structures based on these properties, as illustrated in part by (4):

(4) **Representation of pronominal content by feature structures:**

$$\begin{bmatrix} \text{TOP} \\ \text{PRO} \\ \text{AGR} \end{bmatrix} \begin{bmatrix} \text{PRO} \\ \text{AGR} \end{bmatrix} \begin{bmatrix} \text{TOP} \\ \text{PRO} \end{bmatrix} \ldots$$

The leftmost feature structure in (4) specifies a pronominal which is specialized for topic-anaphoricity and is also classified for person, number or gender. The rightmost feature structure specifies a specialized topic-anaphoric pronominal which lacks any agreement classifications. As in Bresnan (1997a,b) privative features have been used to represent specification of content. For example, the feature TOP stands for a privative or monovalent feature, which has only a single (the 'marked') value. (An opposed monovalent feature such as FOC is also available; the opposition is captured by pragmatics rather than the formal opposition of ± values.) Such features give rise to benign ('permanent', 'inherent', or 'trivial') underspecification in the sense of Steriade (1995). Thus, all of the feature structures shown in (4) represent possible 'surface' representations requiring no further specification or derivation.

The pronominal inventory of a language may be defined as a set of pairings of instances of structural types from (2) with feature structures representing pronominal content as in (4) (Bresnan 1997a). As shown in (5), for example,

[4] A significant feature type which is omitted here is that of social level or distance; distinctions of social level of distance are elaborately marked by different pronominal forms in Javanese (Geertz 1960: 248ff), Balinese (Arka 1995), Thai, Burmese, and Vietnamese (Cooke 1968), and are also evident in the use of the Japanese and Korean pronominal systems. Mühlhäusler and Harré (1990: 64) take the major pronominal contrasts to be (i) "'person' and the features of participant roles" and (ii) "distance and proximity (obviative and proximative) both spatial and social".

bound and free pronouns may be represented as the pairings of a morphological affix *af* or a syntactic category X^0, respectively, with a feature structure representing their pronominal content; and the zero pronoun may be represented as the pairing of pronominal content with no structural expression at all. Null structure is the absence of structure, represented by $\emptyset$. Note that both morphological and syntactic structure are excluded from this definition of Zero pronouns. Thus Zero pronouns here do not include cases of so-called 'pro-drop' in the presence of agreement morphology; the latter are analyzed not as Zero pronouns, but as pronominal inflections represented as 'Bound' in (5).[5]

(5) **Representation of pronominals as form/content pairings:**

$$\text{Zero:} \quad < \emptyset, \begin{bmatrix} \text{PRO} \\ \text{TOP} \end{bmatrix} > \qquad\qquad \text{Bound:} \quad < af, \begin{bmatrix} \text{TOP} \\ \text{PRO} \\ \text{AGR} \end{bmatrix} >$$

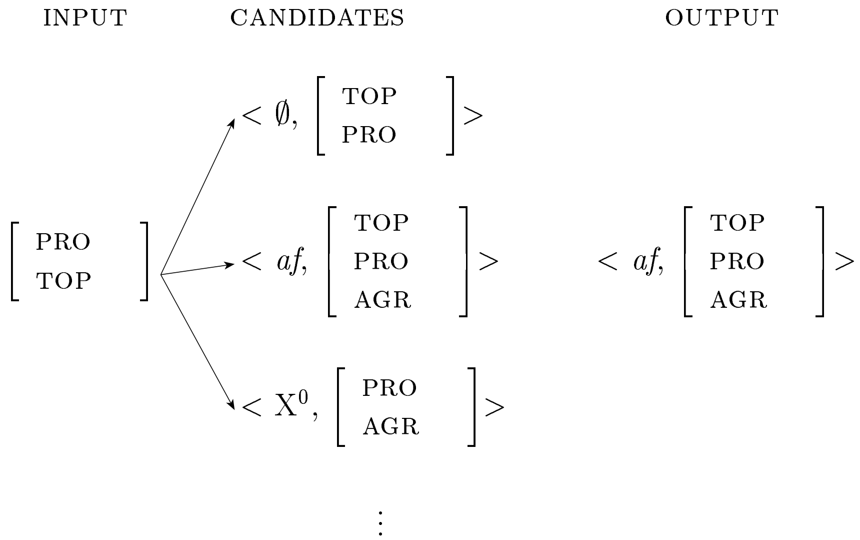
$$\text{Free:} \quad < \mathrm{X}^0, \begin{bmatrix} \text{PRO} \\ \text{AGR} \end{bmatrix} >$$

The inventory of pronominals of each language is selected from the possible pairings by evaluating them against universal constraints as prioritized by the language.

Within OT morphosyntax, then, the universal content of personal pronominals (which will be the 'input') will consist of all possible combinations of the pronominal feature types in (3), represented as feature structures (4). The universal candidate set of structural analyses of pronouns will include all possible pairings of these feature structures with instances of structural types, including the examples in (5), among many others. This is illustrated in (6):

[5]On this analysis of bound pronominals see Givón (1976), Simpson (1983, 1991), Jelinek (1984, 1988, 1990, 1995), Bresnan and Mchombo (1986, 1987), Sandoval and Jelinek (1989), Demuth and Johnson (1989), Andrews (1990), Speas (1990), Willie (1990), Sadock (1991), Uyechi (1991), Nordlinger (1997), Jelinek and Demers (1994), Bresnan (1996) forthcoming, Börjars, Chapman, and Vincent (1997), Toivonen (1996, 1997), Everett (1996), and Speas (1997), among many others.

(6) **Correspondence model (Bresnan 1997a,b,c):**



Bresnan (1997a,b) observes that this model satisfies two fundamental requirements of OT: (i) the universality of the input implied by 'richness of the base' and (ii) the recoverability of the input from the output, implied by the 'containment' or 'correspondence' theories of the input-output relation (Prince and Smolensky 1993, McCarthy and Prince 1995). Because 'richness of the base' implies that the input must be universal, the syntactic GEN cannot simply be defined as mapping a set of language-particular 'lexical heads' or morphemes onto structural forms. A more abstract and crosslinguistically invariant characterization of the input is required. Because the recoverability of the input from the output is fundamental to the learnability of OT (Tesar and Smolensky 1996), the input must either be contained in the output or must be identifiable from the output by a correspondence. Hence the candidate set cannot simply consist of syntactic forms (such as strings of morphemes parsed into phrase structure trees) alone.

The theory of representations assumed in this model already exists: LFG provides a mathematically well-defined correspondence between feature structures (representing language-independent content) and categorial structures (representing the variety of surface forms), and in LFG morphological and syntactic forms may correspond to feature structures of exactly the same type, allowing for both redundancy and competition between morphological and syntactic forms of expression and for a well-defined domain for binding theory (Bresnan 1995, 1997a,b,c, forthcoming). The universal input can thus be modelled by sets of f-structures, which provide an abstract and form-independent characterization of morphosyntactic content. The candidate set can consist of pairs of a c-structure and its corresponding f-structure, which may be matched to the input f-structure by correspondence.[6]

Thus, each candidate is a structural expression (whether morphological or syntactic) of specified pronominal content. On this conception of GEN the input represents language-independent 'content' to be expressed with varying fidelity by the candidate forms, which carry with them their own interpretations of that content. Faithfulness constraints will require the input feature structures to correspond to the candidate feature structures in order to ensure expressibility of content. Correspondence constraints will also apply to the form-content pairings, as we will see. Which of the ways of structurally expressing pronouns will appear in the inventory of a given language depends on how the candidates are harmonically ordered by the language, given its prioritizing of the constraints. Crucially, the candidates need not be perfect analyses of the input; as illustrated in (6), they may overparse or underparse the input pronominal content. This is what allows for the emergence of the unmarked pronoun, as we will see.

2 Markedness Constraints on Pronominals

If all of the pairings of possible structural types with pronominal content actually occurred crosslinguistically, that would mean that the form-function relation is arbitrary, like the Saussurean sign. But this is not what we find. No language has an overt definite personal pronoun devoid of any distinctions of person, number, or gender, while many languages have zero pronouns with just this property. No language has zero, bound, or clitic personal pronouns used only for emphasis and focus, though many languages have free pronouns with

[6]As observed by Bresnan (1997a), this definition of GEN also satisfies the basic intuition shared by many that the input to an OT syntax should provide a semantic interpretation for candidate forms: the f-structures of LFG were originally proposed as schematic, grammaticalized representations of semantic interpretations (Kaplan and Bresnan 1982[1995]), and recent work within formal semantics has validated this conception by showing how f-structures can be read as underspecified semantic structures, either Quasi-Logical Forms or Underspecified Discourse Representation Structures (Genabith and Crouch 1996).

this function (which arises from the presence of other forms specialized for topic anaphora, according to Bresnan (1997a)).

Thus there are predictable relations between the functional content of pronominals and their formal expressions. To characterize these, we first observe that the pronominal forms can be classified as in (7) and (8) into overt/nonovert forms and reduced/nonreduced forms:

(7) $\underbrace{\text{Zero}}_{\textit{nonovert}}\ \overbrace{\text{Bound}\quad\text{Clitic}\quad\text{Weak}\quad\text{Pronoun}}^{\textit{overt}}$

(8) $\underbrace{\text{Zero}\quad\text{Bound}\quad\text{Clitic}\quad\text{Weak}}_{\textit{reduced}}\ \overbrace{\text{Pronoun}}^{\textit{nonreduced}}$

Overt pronominals are those with perceptible morphological or syntactic exponents; they are formally expressed by a nonnull structural type, either a phrasal constituent or a morphologically bound form. Only the Zero pronominal lacks a perceptible exponent and is categorized as nonovert this sense. Reduced pronominals are those whose exponents have less phonological or morphological substance than nonreduced pronouns; they may be completely devoid of phonological substance (a Zero pronoun), or they may be morphologically dependent, prosodically defective, or incapable of bearing primary sentence accent. Only free (potentially strong) pronouns are categorized as nonreduced in this sense. With this classification of forms we can now formulate two harmony constraints on possible pairings, shown in (9):

(9) **Harmony constraints on pronominals:**

(a) Reduced ⇔ TOP: Pronominals are reduced if and only if they are specialized for topic anaphoricity.

(b) Overt ⇔ AGR: Pronominals are inherently specified for person/number/gender if and only if they are overt.

In functional terms (9a,b) can be viewed as ‘naturalness’ constraints on the relation between content and symbolization.

The harmony constraints in (9) are abundantly supported by typological and functional observations as well as detailed studies of particular languages.

(9a), the general correlation between reduced form and topic-anaphoricity, is observed by Givón (1984, 1990: 917) under the name 'referential iconicity'. Haiman, citing Zipf's law (1935), argues that this generalization is better seen as having an economy motivation, to minimize effort by reducing expression of frequent, familiar, predictable referents (Haiman 1985a: 150, 167, 194, 232–2). Van Valin 1996 proposes a scalar representation of the relative markedness of referential coding devices with zero pronominals at the most topical extreme. In addition, many observations of the topic anaphoricity of specific types of reduced forms in particular languages have been made. On the topic anaphoricity of zero pronouns see for example Kameyama (1985) for Japanese, Grimshaw and Samek-Lodovici (1995), and Samek-Lodovici (1996) for Italian, Lambrecht and Lemoine (1996) for spoken French. On pronominal inflections see Givón (1976) for Bantu and Bresnan and Mchombo (1986, 1987) for Chicheŵa. On clitics see Lambrecht (1981) for spoken French, Givón (1976) for Spanish, and Cardinaletti (1994), Cardinaletti and Stark (1996). On weak pronouns see Cardinaletti (1995), Cardinaletti and Stark (1996) for several Romance and Germanic languages.

Constraint (9b), the general correlation between zero pronouns and lack of inherent specification for AGR properties, is observed by Bresnan (1997a). It is supported by the fact that in languages which lack verbal agreement morphology, zero pronouns are not restricted as to person and number. This is true for Japanese, Chinese, Malayalam, Jiwarli (Austin and Bresnan 1996: 248–50), and many other languages. In some languages zero pronouns do appear to have inherent feature specifications for person, number, or gender. For example, Warlpiri has a definite third person singular zero pronominal object (Hale 1973), and Brazilian Portuguese has a definite zero pronominal object which can be used only in the third person (singular or plural) (Farrell 1990: 328). However, in these cases the zero pronoun is filling a paradigmatic gap in the bound or clitic pronominal system. Thus Warlpiri has overt bound pronominal markers for subject and object on its Auxiliary in all persons and numbers, except for the third person singular object (Hale 1973, Nash 1996: 121). Likewise, Brazilian Portuguese has a more restricted system of pronominal clitics than other Romance languages; its third person accusative forms, singular and plural, are "no longer vital" in the language (Farrell 1990: 327)[7] In such cases,

[7]Farrell (1990: 327) observes, "For many speakers, they are virtually never used in ordinary speech, although formal registers, particularly formal written registers, continue to demand their use." There are also formal restrictions on the use of the clitics (Chagas de

the restriction of the zero pronoun to uses requiring specific featural content follows from morphosyntactic competition: the bound pronominal forms block the use of the zero wherever their own featural specifications apply, leaving the zero to be used elsewhere (Andrews 1990, Bresnan 1997b). Thus the third person singular use of the zero in Warlpiri matches the third person singular gap in the pronominal clitic paradigm, and the third person singular or plural use of the zero in Brazilian Portuguese matches the third person singular and plural gaps in the pronominal clitic paradigm. In fact, as we will see below in Section 3.3, in Warlpiri auxiliary-less constructions where there is no bound pronominal paradigm at all, the zero pronoun can be used in any person or number (Simpson 1991: 141–3). Since the featural values of the zero are predictable, it is unnecessary and unexplanatory to specify them intrinsically. These facts provide strong empirical support for (9b). There is also conceptual motivation for the constraint, if we make the plausible assumption that overtly marking referentially classificatory contrasts in non-Zero pronominals makes them more easily perceptible, constraint (9b) can be motivated by the need to maximize expression of referential contrasts for ease of perception (Haiman 1985a: 179ff, 191ff).

Of course, not all languages select all of the natural candidates available, so further constraints are required. Observe that the constraints in (10) assess a mark against the various reduced forms of pronominals; they are a generalization of the constraints proposed by Bresnan (1997a).[8]

Souza 1997).

[8]Bresnan's constraints given in (i) are extensionally equivalent to the first two structural markedness constraints in (10):

(i) Bresnan's 1997a Constraints:

(a) ProAgr: pro $\supset$ agr

(b) $\emptyset$Top: top $\supset$ $\emptyset$

$\emptyset$ Top marks nonzero pronominals, but only those which are specialized for topic anaphoricity and therefore have the top feature. $\emptyset$ Top does not mark the (neutral) pronoun, because it is assumed that this pronoun will not have the top property. Similarly, the function of ProAgr is to mark the zero pronominal, which, it is assumed, will always lack inherent agr properties.

(10) **Structural markedness constraints on pronominals:**

$$\underbrace{\begin{array}{cc} *\emptyset & *\mathit{af} \\ [\text{PRO}] & [\text{PRO}] \end{array}}_{\textit{Iconicity}} \; \underbrace{\begin{array}{cc} *\text{CL} & *\text{Weak} \\ [\text{PRO}] & [\text{PRO}] \end{array}}_{\textit{Avoid Allotaxy}}$$

Is there motivation for singling out the reduced pronominal forms as being structurally marked? Phonologically reduced pronominal forms are often taken to be the unmarked referent coding devices (Givón 1983, 1990: 916ff, 1995: 50; Comrie 1996). Indeed, having a zero realization is taken as a sign of the unmarked value of a morphosyntactic feature in classical markedness theory (Greenberg 1966, Comrie 1986). Yet (10) represents them as structurally marked. Moreover, in languages having reduced pronouns, free pronouns appear to be specialized for focus uses (Schwartz 1986). What is the justification for treating the free pronoun in these languages as unmarked? As Bresnan (1997a) notes, the reduced forms are indeed unmarked (*merkmallos*) in the sense of having fewer morphemes or less phonological content; however, they are not unmarked (*unmarkiert*) in the sense of being the forms used under neutralization of oppositions (Jakobson 1931). She shows, and we will see further evidence for it in Section 3, that in contexts which preclude the use of a reduced pronominal, a free pronominal otherwise used for focus or emphasis can emerge to take over the topic-anaphoric function, a sign that it is indeed the neutral, general, or unspecialized pronominal form. Further, as the discussion of (9b) shows, the Zero pronoun expresses no intrinsic contrasts of person, number, and gender, and is thus a limited and defective expression of the participant deixis contrasts that are fundamental to pronominality.

In Haiman's 1985a theory of natural syntax, reduced pronominals have a marked syntactic status, despite their favored use for topic anaphoricity in discourse. Zero and Bound pronominals violate the iconicity of syntax, because they yield a non-isomorphic mapping between syntactic constituents and semantic referents and relations—the zero pronoun because it has no constituent structure at all, and the affixal pronoun because it is morphologically part of another constituent (the head) and so non-iconically maps a relation and referential role, two distinct semantic constituents, onto a single syntactic constituent. In contrast, the clitic and weak pronouns do not suffer from this defect, because by definition they are syntactic elements that are only prosodically dependent or defective. But clitics and weak pronouns have a different marked property: they are nonuniform in their syntactic distribution with free (neutral) pronouns. This nonuniformity of syntactic expressions of the same semantic roles or grammatical functions is called *allotaxy* by Haiman (1985a: 162). Haiman observes that the avoidance of allotaxy is—along with iconicity—a major source of the regularity of word order seen in pidgins. The isolating, analytic, uniform syntactic structures of pidgins, he argues, can be explained in terms of their extreme syntactic unmarkedness, embracing iconicity and avoiding allotaxy. It is not surprising that New Guinea Pidgin, derived from English, should have free-standing pronouns, but as Haiman (1985a: 161–2) notes, the same is true of Kenya Swahili in relation to standard Swahili. Standard Swahili's bound subject and object pronominal affixes on the verb are replaced in Kenya Swahili by "independent invariable pronouns in a rigid SVO order". Likewise, West African Pidgin Portuguese, according to Naro 1973: 444) replaced the various clitic pronominals of Portuguese with the fully stressed, independent strong pronominal forms. From this and other evidence, Haiman (1985a: 161) concludes: "In pidgins generally, pronouns are always free-standing *words* (commonly derived from topicalized forms in the target languages) ..."; that is, the pidgins adopt the unreduced forms of pronouns, which are morphosyntactically the unmarked forms.

Haiman's claim about the prevalence of the free pronoun in pidgins has been widely corroborated for stable, crystallized pidgins. As Mühlhäusler and Harré (1990: p. 262) observe,"Pidgins prefer free pronoun forms to bound ones," and this preference holds as well for pidgins having non-European lexifiers (Bresnan 1998).

By recasting the functional motivations of 'Iconicity' and 'Avoid Allotaxy' as the structural markedness constraints (10), we can derive Haiman's (1985a) markedness explanation for pidgin pronominal systems from the initial ranking of markedness constraints above faithfulness in Optimality Theory (see Smolensky (1996a,b) for a recent exposition and further references). This initial structuring of constraints is proposed as a way to explain the acquisition of phonologies consisting of unmarked structures. If unmarked structures incur no marks, they provide no evidence for any particular constraint ranking in OT, and so will not lead to convergence on a single grammar. The solution is to hypothesize an initial state of the language learner in which structural markedness constraints outrank faithfulness constraints.[9]

Accordingly, we have the three families of constraints shown in (11), where

[9]See Bresnan 1998 on the specific relation of this hypothesis to pidginization.

HARMONY refers to the general form-function harmony constraints (9a,b), STRUCT refers to the structural markedness constraints (10) which penalize reduced pronominal forms, and FAITH designates the PARSE$^{\text{FEAT}}$ family.

(11) HARMONY $\gg$ STRUCT $\gg$ FAITH

Because the harmony constraints appear to be universally observed, I assume that they are undominated. They serve to filter out the Sausserian excess of unnatural pronominal forms from the candidate set. Which of the natural forms that pass the harmony constraints are actually found in the inventory of a language depends on the relative ranking of STRUCT and FAITH constraints. The ranking of all the structural markedness constraints above the faithfulness constraints means that it is worse to be a reduced form (thus violating iconicity or exhibiting allotaxy) than to be unfaithful to the input. Hence this ranking, by the standard OT logic of markedness, yields only potentially strong pronouns in the pronominal inventory of a language (as in highly analytic languages like English and in pidgins). These unreduced free pronouns will not be specialized for the TOP property, and hence they will be unfaithful to an input specified for the topicality feature. But that violation will matter less, given the ranking in (11) than the violations incurred by being a structurally marked form. The table in (12) schematically illustrates these points for a representative sample of the candidate set:

(12) **Ranking yielding only the unmarked pronoun (e.g. English):**

	Input [PRO, TOP]	HARMONY	STRUCT	FAITH
	Zero: [PRO, TOP, AGR]	*!	*	
	Zero: [PRO, AGR]	*!	*	*
	Zero: [PRO, TOP]		*!	
	Zero: [PRO]	*!	*	*
	Bound: [PRO, TOP, AGR]		*!	
	Bound: [PRO, AGR]	*!	*	*
	Bound: [PRO, TOP]	*!	*	
	Bound: [PRO]	*!	*	*
	Pronoun: [PRO, TOP, AGR]	*!		
⇒	Pronoun: [PRO, AGR]			*
	Pronoun: [PRO, TOP]	*!		
	Pronoun: [PRO]	*!		*
	⋮			

Thus the ranking shown in (12) gives us a pronominal inventory consisting only of potentially strong pronouns; that is, syntactically free pronouns capable of being tonically accented, having morphological classification for person/number/gender, and being unspecialized for topic anaphoricity. These are universally the unmarked pronouns.

As soon as one of the structural markedness constraints is demoted below faithfulness, however, the form it marks enters into the inventory; that form becomes optimal for expressing topical content, as illustrated in (13). The table has been simplified by omitting all forms violating the harmony constraints, considering only three representative candidate types, and only the relevant instances of STRUCT:

(13) **Ranking yielding a bound pronominal (e.g. Chicheŵa):**

	Input [PRO, TOP]	HARMONY	$*\emptyset$ [PRO]	FAITH	*af [PRO]
	Zero: [PRO, TOP]		*!		
⇒	Bound: [PRO, TOP, AGR]				*
	Pronoun: [PRO, AGR]			*!	
	⋮				

For nontopical content, the free unreduced pronoun is optimal under the same ranking; see (14):

(14) **The unmarked pronoun under the same ranking:**

	Input [PRO]	HARMONY	$*\emptyset$ [PRO]	FAITH	*af [PRO]
	Zero: [PRO, TOP]		*!		
	Bound: [PRO, TOP, AGR]				*!
⇒	Pronoun: [PRO, AGR]				
	⋮				

It follows that the demotion of the structural markedness constraint admits the corresponding reduced form into the inventory, but only for topical content; the free, unreduced pronoun remains optimal elsewhere. This result is stated by Bresnan (1997a) (cf. Carstairs-McCarthy 1992: 165–6):

(15) **Markedness relation among bound and free pronoun inventories (Bresnan 1997a):**

Free pronouns only (English)
Both free and bound pronouns (Chicheŵa, Navajo, etc.)
Bound pronouns only (none)

By parity of reasoning, exchanging the two structural markedness constraints above as shown in (16), we derive the markedness relation among zero and free pronoun inventories shown in (17), also stated by Bresnan (1997a):

(16) **Ranking yielding a zero pronoun (e.g. Japanese, Jiwarli):**

(a)

	Input [PRO, TOP]	HARMONY	*af [PRO]	FAITH	*∅ [PRO]
⇒	Zero: [PRO, TOP]				*
	Bound: [PRO, TOP, AGR]		*!		
	Pronoun: [PRO, AGR]			*!	
	⋮				

(b)

	Input [PRO]	HARMONY	*af [PRO]	FAITH	*∅ [PRO]
	Zero: [PRO, TOP]				*!
	Bound: [PRO, TOP, AGR]		*!		
⇒	Pronoun: [PRO, AGR]				
	⋮				

(17) **Markedness relation among zero and free pronoun inventories (Bresnan 1997a):**

Free pronouns only (English)
Both free and null pronouns (Jiwarli, Japanese, etc.)
Zero pronouns only (none)

Studies of the typology of pronominal systems (Forchheimer1952, Wiesemann 1986) confirm that while there are many languages that lack reduced pronominal forms, languages that lack freestanding pronouns are rare.[10]

[10] Apparent counterexamples are discussed in Section 4. The existence of restrictions on the occurrence of free pronouns based on syntactic function or person is set aside here for further research. These restrctions may arise from the interactions of the person and topicality hierarchies (n. 12).

3 Emergence Effects

3.1 Pronoun replacing bound pronominal

Bresnan (1997a) shows that this theory explains the emergence of the unmarked pronoun in Chicheŵa. Where both a bound pronominal and a free pronoun are available, the free pronoun cannot be used topic-anaphorically, but is reserved for emphasis or contrast. This is shown for the preposition *ndí* 'with, by' in (18):

(18) a. *ndí íwo*
with it (class 3)

b. *nǎwo* < **na + ǐwo*
with+it (cl 3) with it (cl 3)

The contracted form is used in topic-anaphoric contexts such as resumption of left dislocations illustrated in (19a), while the full pronoun object the preposition cannot be, as illustrated in (19b):

(19) a. *mkángó uwu ndi-na-pít-á nawó ku msika*
lion(3) this I-RM.PST-go-INDIC with-it(3) to market
'This lion, I went with it to market.'

b.?* *mkángó usú ndi-na-pít-á ndí íwó ku msika*
lion(3) this I-RM.PST-go-INDIC with it(3) to market
'This lion, I went with it to market.'

But where a bound form is unavailable, the free form is used topic-anaphorically. Thus the preposition *kwá* 'to', unlike *ndí* 'with, by', does not allow a reduced pronominal object:

(20) a. *kwá íyo*
to him (class 3)

b. **kwǎyo* < *kwa + ǐyo*
to+him (cl 3) to him (cl 3)

And with this preposition, the full pronoun object can be used to resume dislocated topics (and in all of the other environments normally prohibited to strong pronouns):

(21) *mfúmú iyi ndi-ká-kú-nenĕz-a kwá íyo*
chief(3) this I-go-you-tell.on-INDIC to him(3)
'This chief, I'm going to tell on you to him.'

This result follows from the ranking given above (13) for Chichewâ, assuming that the lexical gap reflects a high-ranking constraint called LEX in (22) (see Bresnan (1997a,b) for details):

(22) **Emergence of the unmarked pronoun in Chichewâ:**

	Input [TO< x >, [PRO,TOP]$_x$]	LEX	*∅ [PRO]	FAITH	**af* [PRO]
	kwá Zero [. . . [PRO,TOP]]		*!		
	kwá+Bound [. . . [PRO,TOP,AGR]]	*!			*
⇒	kwá Pronoun [. . . [PRO,AGR]]			*	

3.2 Pronoun replacing zero pronoun

Following the same logic, we should expect similar emergence effects in zero pronoun languages. A fuller investigation is required, but some evidence from Japanese (provided with the assistance of Yukiko Morimoto and Peter Sells, p.c. March 1997), is suggestive. Example (23) shows a context in which the zero pronoun is used referring to a topic, while the free pronoun is excluded:

(23) *sono hon-o yonda kedo watashi-wa ??sore-o/∅ susume-nai*
that book-ACC read.PAST but I-TOP (it) recommend-NEG
'I read that book but I wouldn't recommend it.'

However, as in many languages, zero pronouns in Japanese are restricted to core arguments of the head—subjects and objects. A postpositional zero pronoun object is lacking. In this situation, the overt free pronoun can be used topic anaphorically, as shown in (24):

(24) *sono hon-o yonda kedo sore-ni/*∅ tuite-wa hanasitaku nai*
that book-ACC read.PAST but (that-dat) about-TOP talk.want NEG
'I read that book but I don't want to talk about it.'

This fact undoubtedly reflects the much broader crosslinguistic generalization that reduced pronominals of all types are distributed according to a hierarchy of argument prominence, being most common with subjects and decreasing with the increasing obliqueness of argument roles (Givón 1976, Bresnan forthcoming).[11] Without attempting a full analysis of this markedness scale in OT terms, we can simply suppose that the absence of a zero postpositional object in Japanese reflects an additional high-ranking markedness constraint, abbreviated $*\emptyset$ OBL in (25).[12] The emergence of the unmarked overt pronoun follows.[13]

(25) **Emergence of the unmarked pronoun in Japanese:**

	Input [ABOUT$< x >$, [PRO,TOP]$_x$]	$*\emptyset$ OBL	$*af$ [PRO]	FAITH	$*\emptyset$ [PRO]
	Zero: [PRO, TOP] tuite	*!			*
	Bound: [PRO, TOP, AGR]+tuite		*!		
⇒	Pronoun: [PRO, AGR] tuite			*	
	⋮				

3.3 Zero pronoun replacing bound pronominal

What happens when more than one structural markedness constraint is demoted below faithfulness? Consider, for example, the ranking in (26):

(26) $\ldots \gg \text{FAITH} \gg \underset{[\text{PRO}]}{*\emptyset} \gg \underset{[\text{PRO}]}{*af}$

Ranking both the zero and the bound structural markedness constraints below faithfulness means that the marks against these reduced forms are overridden by the importance of faithfully preserving the input content. So both these marked forms could be used to express topic-anaphoric content. But the ranking of the zero markedness constraint above the bound markedness constraint means

[11] There is also an interaction between zero pronouns and the person hierarchy, many languages having a zero pronoun only in the third person (Forchheimer 1953).

[12] A fuller account could be based on harmonic alignment of the topicality hierarchy of pronominal expressions (REDUCED > UNREDUCED) with the relational hierarchy (DIRECT/CORE > OBLIQUE). Cf. Prince and Smolensky (1993: 136) and Aissen 1997.

[13] Japanese attaches constraints of social level to its pronominal system; use of an overt pronoun to designate a person implies social familiarity and is therefore avoided in many situations (Peter Sells and Yukiko Morimoto, p.c. March 1997). For this reason, an inanimate overt pronoun is used in the examples given here.

that it is worse to use the zero pronoun than the bound pronoun. This point is illustrated in (27):

(27) **Alternative ranking yielding a bound pronominal:**

	Input [PRO, TOP]	...	FAITH	*∅ [PRO]	**af* [PRO]
	Zero: [PRO, TOP]			*!	
⇒	Bound: [PRO, TOP, AGR]				*
	Pronoun: [PRO, AGR]		*!		
	⋮				

Like the hypothetical ranking for Chicheŵa (13), this ranking would also yield an inventory of bound and free pronominals, with the bound form being specialized for topic anaphoricity. The difference is that in situations where a highly ranked constraint penalizes the bound form, the free pronoun emerges as unmarked in Chicheŵa, but the zero pronoun would emerge here. Under the ranking in (27), the zero pronoun is relatively unmarked for topical content compared to the free pronoun.

This situation might be exemplified by Warlpiri, which has bound pronominal markers for subject and object on its Auxiliary, as noted above (Hale 1973, Simpson 1991). We will assume these are pronominal inflections, abstractly characterized as 'Bound' in (5).[14] The Auxiliary is obligatory in main clauses with verbal predicators, but it is absent in infinitival clauses, which Simpson shows to have have the morphological and categorial structure of nominals. In the latter contexts zero pronouns appear. As we would expect from the absence of agreement morphology, these zero pronouns are not restricted as to person and number (Simpson 1991: 141–3). Example (28a) shows a third person plural use, and (28b) shows a second person singular use:

(28) a. *Kurlarda kala-lu-nganpa maja-rninja-rla yu-ngu.*
spear.ABS USIT-3plSUBJ-1plexclOBJ straighten-INFIN-SERIAL give-PAST
'They would give us spears$_i$ after straightening (them$_i$).'

[14]These are also used as NP-agreement markers (Simpson 1991, Austin and Bresnan 1996), which can be represented by letting the PRO value be optionally parsed (cf. Bresnan and Mchombo 1986, 1987). Several approaches to the representation of optionality that could be used here are discussed by Bresnan (1997b).

b. *Ngari=ka-rna-ngku* *yampi-mi* *nyuntu*
JUST=PRES-1sgSUBJ-2sgOBJ leave-NPAST you.SG.ABS-EUPH
paka-rninja-wangu-rlu *Jungarrayi-kirlangu* *ngumparna-kurlangu*
hit-INFIN-PRIV-ERG Jungarrayi-POSS brother.in.law-POSS
ngajulu-rlu-ju, *Japaljarri.*
I-ERG-EUPH Japaljarri.ABS
'Japaljarri, I'm just leaving you without beating (you)
who belong to Jungarrayi my senior brother-in-law.'

If we assume that a high-ranking constraint prevents auxiliaries from appearing as constituents of NPs, the zero emerges as the least marked available topical pronominal.

(29) **Emergence of the zero pronoun in Warlpiri:**

	Input [PRO, TOP]	*(Aux,NP)	FAITH	*∅ [PRO]	**af* [PRO]
⇒	Zero: [PRO, TOP]			*!	
	Bound: [PRO, TOP, AGR]	*!			*
	Pronoun: [PRO, AGR]		*!		
	⋮				

We see, then, that even though the free pronoun may be specialized for emphatic or focus functions in languages having bound or zero pronouns, its unmarked status emerges when it fills in the gaps created by restrictions on the reduced forms.

4 Languages without Pronouns?

Finally, let us consider possible counterexamples to the main markedness claim derived from the present theory, that no language lacks free (unreduced) pronouns. There are two sources of apparent counterexamples: (i) languages in which pronouns have a syntactic distribution differing from NPs, and (ii) languages which morphologically lack distinct pronominal stems, so that pronouns have the morphology of nonpronominals.

Taking type (i) first, many languages align free pronouns in prominent edge positions distinct from lexical NP/DP positions. Some examples are given in (30):

(30) **Free pronouns with edge alignment:**

Kichaga: strong object pronouns aligned at right edge of VP (Bresnan and Moshi 1990: 166)
Warumungu: free pronoun subjects and objects aligned at left edge or second position of clause (Hale 1973: 341; Simpson and Heath 1982)
Zuni: first and second person free pronouns (subjects, objects, possessives) aligned at left edge of IP (Nichols 1997: 373)

For example, the Bantu language Kichaga has bound pronominal objects prefixed to the verb stem and strong free pronouns, used for contrast, which are found in a position distinct from lexical NPs at the right edge of the VP (Bresnan and Moshi 199: 166). The Australian language Warumungu (Hale 1973, Simpson and Heath 1982) places subject and object pronouns in second position in the clause when unstressed, although possessive pronouns occur freely like NPs (Simpson 1997). Hale (1973: 341) refers to the subject and object pronouns as cliticized, but goes on to remark:[15]

> Warumungu pronouns, although they normally appear unstressed and cliticized, are in fact independent pronouns in the sense that they can appear as isolated, fully stressed words—as answers to questions, for instance. They can also appear fully stressed as postposed tags to sentences, in which position they serve to reemphasize or to clarify the identification of, say, the subject which is represented by a cliticized pronoun within the sentence itself. Furthermore, subject pronouns may (under conditions, perhaps of style, which I do not adequately understand) appear fully stressed in sentence-initial position. (Hale 1973: 341)

Zuni first and second person independent pronouns also take second position in the clause (IP), whether they are subjects, objects, or possessives (Nichols 1997: 373). Nichols argues that they are not clitics, however: "They are not phonologically dependent on another constituent or on one another, they may bear full stress, and other material such as adverbs may intervene between

[15] Hale 1973 refers to the language as 'Warramunga'; subsequent to the publication of Hale 1973, it became officially designated 'Warumungu'. Hale's spelling has been adjusted accordingly in the quotation (cf. Hale (1973: n. 25, p. 340)). Simpson (to appear) shows that some combinations of the subject and object pronouns in Warumungu have portmanteau forms which indicate that the object is fused with the subject in some cases.

them ...” Similar examples could be multiplied (e.g. nominative and genitive pronouns in Tagalog (Kroeger 1993: 119-123, Nespor 1994, Anderson 1996: 167).

Thus a language having specialized positions for (subclasses of) pronouns does not constitute a counterexample to the present theory, provided that those pronouns have the functional properties of pronouns and are free unreduced forms, potentially capable of bearing primary sentence accent. What may be involved is merely alignment of pronouns along two distinct dimensions of prominence—the person hierarchy or functional hierarchy—with an edge position (cf. Bresnan 1995).[16] The grammatical relations of such edge-aligned pronouns determine their agreement, binding, control, and other properties, and follow in the present framework from the correspondence mappings between c-structure and f-structure at the sentence level (Bresnan 1995, 1997c, forthcoming).

The second source of apparent counterexamples to the generalization that no language lacks free pronouns is languages in which pronominal elements are not morphologically based on pronominal stems. This situation is not uncommon. As Hale (1973: 340) remarks concerning the historical development of the Warlpiri subject and object agreement markers, “The process of destressing and cliticizing pronouns eventually became an obligatory rule and, subsequently, independent pronouns were re-created from other sources available to the language, such as oblique forms of pronouns like those found in possessives or in other functions not normally subject to cliticization.” He notes that a Western Australian language (Warnman, see Nash (1996: 120)) innovated an invariable stem for independent pronouns, which was certainly not a pronoun historically. Nichols and Peterson (1996: 345–6) in their quantitative study of the Amerind personal pronouns observe that some of their sample languages have no distinct independent pronoun roots, but have independent pronouns consisting of “a generic pronominal root (usually invariant across all person-number categories, and often etymologically a form of the verb ‘be’ or a noun such as ‘body’ or ‘self’) with nominal or verbal affixes distinguishing the different number categories.”

Personal pronouns can also be created from nouns. Examples occur in Romance and Southeast Asian languages.[17] Personal pronouns are also commonly

[16] This is similar to recent proposals for edge alignment of clitics (Anderson 1996, 1997 and Legendre 1997), but is not restricted to the clitic forms of pronominals. On harmonic alignment of markedness hierarchies in syntax see Aissen 1997.

[17] Spanish and Portuguese polite second person pronouns derive from honorific titles such as

created from demonstratives. As Greenberg (1986: xix) observes, "It is further well known that many languages do not have a third person pronoun that is distinct from one or more demonstratives. The most common is a distance demonstrative which is also the most common source of purely anaphoric third person pronouns. This is a common diachronic process by which the demonstrative first acquires anaphoric meaning in addition to its demonstrative meaning and then becomes confined to anaphoric usage." This appears to be the case for the nonhuman classes of pronouns in Chicheŵa, which are formally identical to the demonstratives. Nevertheless, they behave identically to the distinctive pronominal roots with respect to the topic-anaphoric properties investigated by Bresnan and Mchombo (1987). A similar phenomenon can be found in English. Trudgill and Chambers (1991: 8) report that in East Anglian dialects of English *it* occurs only as an object pronoun, with third person neuter singular subjects being indicated by *that*:

(31) a. That's raining.

b. I don't like it—that's no good.
(East Anglian dialects of English, Trudgill and Chambers 1991: 8)

(32) A local woman who helps us clean the house here said to me the other day after a long search for the broom, which, like many other things is always being moved around the house by the kids, and had gone missing to be finally located down the side of the fridge

"That's a good place for it. But as soon as you start saying something, that disappears."

(Louisa Sadler, p.c., May 6, 1997)

Spanish *Vuestra Merced* and Portuguese *Vossa Merce* ('Your honour'), which became *Usted* and *Voce(s)* respectively; the third person number agreement required with these forms is a remnant of their nominal origin (Mühlhäusler and Harré 1990: 136–7). In Thai, deferential first person pronouns often have literal denotations for the head or related parts of the body such as crown or hair, while many deferential second person pronouns denote the sole of the foot. The historical significance is that "the inferior speaker places the sole of his hearer's foot, or the dust beneath the foot, on a par with his own head or hair—the highest and most respected part of his body" (Cooke 1968: 9). Thai third person pronouns often have kin-term sources. Burmese and Vietnamese also have nominal sources for many pronouns, although the personal pronouns can be formally distinguished from other nominals, and even in Thai, where "personal pronouns are not so easily distinguished formally from kintype nouns" except by limitations on modification, they can be distinguished as "a class apart" by their semantic structuring (Cooke 1968: 147).

In Standard English demonstrative pronouns cannot be used in these anaphoric contexts. In East Anglian, *that* has the morphological form of a demonstrative, but is functioning as a third singular neuter personal pronoun. Thus it is incorrect to *define* pronouns as having distinct pronominal stem forms. It is the synchronic functions of the element that determine its pronominality, not its etymology.

Now the Salish languages of the American Northwest have both of these properties at once: special edge positioning for first and second person pronouns (perhaps weak pronouns or 'clitics'), and a set of independent strong pronouns based on pronominal inflections of verbal roots (Hukari 1976, Jelinek and Demers 1994). Jelinek (1997: 243) concludes on the basis of these distributional and morphological facts that Straits Salish lacks independent pronouns, and remarks that the same holds for Winnebago, a Siouan language (cf. Lipkind (1945: 29), Forchheimer (1952: 88). But we now see that this conclusion cannot be drawn solely on the basis of narrowly categorial and morphological conceptions of pronominality, for a great variety of forms of expressions can function as pronouns. In the case of Winnebago, Lipkind (1945: 53) writes of the demonstrative suffixes added to the positional verb stems for 'sit', 'lie', and 'stand': "These … form a set of words which function like independent personal pronouns, being used as subject or object or vocatively. Both the verb and the positional take personal pronouns [bound pronominals–jb]." Of the positional verbs he writes (1945: 45): "The positionals beside their verbal function are also used with demonstratives …. Long things are talked of as lying, tall or upright things as standing, and other things as sitting. Clouds 'lie,' rain 'stands,' the sun and moon 'sit.'" In other words, these verbal elements serve as positional classifiers to the demonstratives. We have, then, a pronominal form morphologically composed of inflections for person, a positional classifier, and a demonstrative suffix. The content conveyed by this form—namely, person and kind classification (based on positional type)—is fully consistent with pronominality. Finally, we note that Winnebago is a configurational language: "Position is the chief source of grammatical relations" (Lipkind 1945: 12). Thus the appearance of these freestanding person forms in subject and object positions suggests the syntactic function of pronominal arguments. Once again it is the synchronic functions of the element that must determine its pronominality, not its etymology.[18]

[18] Examination of texts is needed to determine the function of such pronominal forms in Winnebago, Straits Salish, and other languages where the presence of free pronouns has been

In sum, the present theory of pronominal markedness can explain the existence of universal (or near-universal) asymmetries in the typology of pronominal systems, the preponderant use of free pronouns in pidgins of typologically diverse sources, and the emergence of free pronouns to express topic-anaphoricity in particular contexts where bound or zero pronouns are absent within individual languages. These preliminary results suggest that it is indeed possible to develop a nonderivational theory of markedness for syntax analogous to the OT theories being developed in phonology, but of course much further work is required.

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