Hierarchies of Person*

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1. Introductory remarks: form and function. It is a commonplace in discussions of grammatical theory that the categories of morphology and syntax are related to, but distinct from, the categories of semantics--that morphosyntactic and semantic features stand in a many-many relationship. 'Grammatical' and 'natural' gender are standard examples; German Frau 'woman, Mrs.' is feminine in gender, and Zimmer 'room' is neuter, as expected, but Fräulein 'girl, Miss' is neuter rather than feminine and Tür 'door' is feminine rather than neuter. Similarly, morphological cases and semantic (or Fillmorean) cases do not line up one to one; in German, the nominative case is used not only for agents (ich 'I' in Ich habe ihn gestossen 'I hit him') but also for experiencers (as in Ich habe Hunger 'I'm hungry'), and at the same time experiencers are expressed not only by forms in the nominative but also by forms in the accusative (mich in Es hungert mich 'I'm hungry') and the dative (mir in Mir ist kalt/Es ist mir kalt 'I'm cold'). In the same way, (surface) sentence types do not correspond perfectly to semantic speech act types; English interrogative sentences are used not only for questions (Is there any champagne left?) but also for requests (May I have the jalapeños, please?), and assertions (After all, is there any reason to keep up this pretense?), while requests are expressed not only by imperatives (Give me the family economy size, please) but also by interrogatives (Would you hand me those lupines, please?) and declaratives (I'd like another piece of Sachertorte, please).

In each of these examples, we have, first of all, a morphosyntactic categorization of forms—several distinguishable categories (called genders) of nouns, several distinguishable categories (called cases) of noun forms, and several distinguishable categories (called sentence types) of sentence-sized syntactic constructions. Next, we have a semantic categorization (of things, situations, events, or whatever). Finally, there is a considerable tendency for the morphosyntactic categories to line up or correlate with the semantic ones, even though there are exceptions in both directions. Because of this tendency, we have certain canonized names for the morphosyntactic categories (feminine, rather than deciduous, for the category correlated with the semantic category of females; interrogative, rather than ablative, for the category connected with the semantic category of questioning; and so on). I shall describe these correlations by means of statements like the following:

(1) If the corresponding semantic category is female, the morphosyntactic category is feminine.

(or simply: feminine is associated with female), meaning this as an abbreviation for

(2) If there is a morphosyntactic category corresponding to the semantic category female, then call this morphosyntactic category 'feminine'.

Not every language has such a morphosyntactic category, of course, so that a principle like (1), though a universal, is not of much interest, being essentially definitional. But when we look at morphosyntactic categories present in all languages, principles like this take on some significance, since they express universal correspondences between categorizations of form and meaning.

The bulk of this paper is taken up with one morphosyntactic categorization present in all languages, that of person, and with the universal correspondence principles, analogous to (1), associated with the categories of person.

The position I am taking, then, is the familiar one that there is significant linguistic categorization on at least two levels between the world of objects and events, on the one hand, and phonological forms, on the other: semantic and morphosyntactic. I have only a little to say (in the next section) about the connection between semantic categories and the real world, but a good bit about the remaining links in this chain, the connection between semantic and morphosyntactic categories, and the connection between morphosyntactic categories and phonological forms.

What I am trying to do is to be clear in my own mind about some aspects of an apparently very simple matter, the way in which people are referred to by personal pronouns and inflectional affixes. And I am trying to do this because the category of person is one for which there is a long and widespread tradition of assuming that there is not much difference between the classifications imposed in semantics and in morphology-syntax: so, Lyons 1968:276 says that

(3) The category of person is clearly definable with reference to the notion of participant-roles: the 'first' person is used by the speaker to refer to himself as a subject of discourse; the 'second' person is used to refer to the hearers and the 'third' person is used to refer to persons or things other than the speaker and hearer. So much is straightforward enough.

2. Introductory remarks: displaced uses. Before tackling the main topic, I must say a few words about some matters I am specifically not addressing here. These are cases of displaced or indirect uses of linguistic forms--a collection of data that linguists and philosophers have been discussing hotly in recent years. The controversy has centered about the question of indirect speech acts rather than pronominal usage, but the issues are similar in the two areas.

In the case of speech acts, it is (reasonably) clear that there is a continuum of examples, ranging from those like

(4) Aren't you thirsty?

used to suggest going out and getting a beer, in which some sentence can be intended or used to achieve some effect but for which no one would want to claim that this use was somehow part of a meaning for the sentence, to those like

(5) Why not go out and get a beer?

in which a syntactic construction has come to be employed specifically for communicating some content at variance with the surface form of the sentence and for which an analysis with this use as part of the meaning for the sentence is reasonable. In examples like (4) the problem is how to describe the relationship between the semantics of the sentence and its use in real-world conversational situations, not how to connect its syntactic and morphological form with its meaning.

So with pronominal usage. We have examples like the 'phoney inclusive' we in Are we ready for dinner? (said by a nurse to a patient), the majestic or editorial we, or the intimate or condescending he in Is he angry? (said, with labialization throughout, by wife to husband), in which certain pronouns can be intended or used to achieve the effect of other pronouns but for which we would not want to claim additional meanings for these pronouns; and there are some cases like the German pronoun /zi/, which has come to serve as the polite second-person pronoun as well as third-person plural pronoun. The problem in cases like the phoney first person inclusive is how to describe the relationship between the semantics of the pronoun and its use in real-world conversational situations, not how to connect the morphological form with its meaning. Accordingly, I will dismiss displaced uses of pronouns from consideration in the rest of this paper.

3. Reference sets and correspondence principles. The categories I want to talk about are those of person, both in pronouns and in verbal affixes. For my purposes here I will be concerned only with uses of pronouns and verbal affixes to refer to human beings, though (as has been observed by Benveniste 1971:ch. 18, and others) the so-called 'third person' is, in a very real sense, a non-person, since it is used to refer to non-humans (and refers to humans by virtue of their not being one of the people actually involved in the speech act). Moreover, I will talk indifferently of distinctions made in the pronouns and in the verbal or nominal affixes of a language, though the various systems are very often not the same.

With all these preliminary caveats, exclusions, and hedges out of the way, I turn to the categories of person that are relevant for referential (that is, semantic) purposes; for these I use ordinary Arabic numerals:

(6) 1: reference to the speaker
2: reference to an addressee
3: reference to someone other than the speaker or addressee

The referential elements in (6) can combine with one another to make reference sets of any size whatsoever, for example:

(7) 1+2: reference to the speaker and one addressee, but no one else
2+2+3: reference to two distinct addressees and to someone neither the speaker nor the addressee
3+3: reference to two people, neither of whom is the speaker or the addressee

The meaning of a particular morpheme can then be expressed as a list of all the reference sets covered by that morpheme; so, for the English plural personal pronouns:

(8) we: 1+2, 1+3, 1+2+2, 1+2+3, 1+3+3,...[1]
you (plural): 2+2, 2+3, 2+2+2, 2+2+3, 2+3+3,...
they: 3+3, 3+3+3, 3+3+3+3,...

But (8) indicates the membership of three infinite lists without giving any principles that say which reference set is covered by which pronoun. The following ordered set of principles does the trick:

(9) (a) Use the first person (I) pronoun we for any reference set with the referential element 1;
(b) Otherwise, use the second person (II) pronoun you for any reference set with the referential element 2;
(c) Otherwise, use the third person (III) pronoun they.

In (9) I have introduced morphosyntactic categories of person, along with symbols for them (I, II, III) which are different from the symbols for semantic categories in (6). Distinguishing two sets of categories and developing parallel but distinct formalisms for the two sets is, from the point of view of describing the English system of personal pronouns, a gratuitous complication, even though the categorization that is interposed between form (particular morphemes of English) and meaning (the referential elements 1, 2, 3) is of a familiar type, being just like the cases I discussed in section 1 above. In fact, I should like to say that (9) really represents two sorts of principles, one universal (having to do with the association between morphosyntactic categories and referential categories) and one particular to English (having to do with the association of English morphemes with particular morpho-syntactic categories). That is, I should like to factor (9) into the universal principles

(10) (a) Use a I pronoun for any reference set with the referential element 1;
(b) Otherwise, use a II pronoun for any reference set with the referential element 2;
(c) Otherwise, use a III pronoun.

and the English principles

(11) (a) I Pl is associated with we;
(b) II Pl is associated with you;
(c) III Pl is associated with they.

About (11), which concerns the English lexicon, I have little more to say. But about (10), there is a great deal to be said.[2]

The principles in (10), moreover, are actually two intertwined sets of principles--first, the correspondence principles

(12) (a) I is associated with 1;
(b) II is associated with 2;
(c) III is associated with 3.

and second, a hierarchy of reference, which says that (12a) takes precedence over (12b), and (12b) in turn over (12c), or equivalently that 1 dominates 2, and that 2 in turn dominates 3:

(13) 1 > 2 > 3

Both (12) and (13) seem to be universal, not specific to English. They are, in fact, implicit in the characterization of person systems as involving I, II, and III, or as involving I+II (first person inclusive), I-II (first person exclusive), II, and III. Anyone who comes across a description of a hitherto ignored language from some remote (or at least unappreciated) corner of the globe will understand the characterization of a pronoun or affix system in terms of these person categories; (12) and (13) are, so to speak, part of the baggage we bring in when we visit the territory of a new language. These expectations can perhaps be best appreciated by imagining what it would be like to have them frustrated. Suppose we came across a language with exactly three plural personal pronouns, as follows:

(14) *swe: 1+3, 1+3+3, 1+3+3+3,...
*syou: 1+2, 2+2, 2+3, 1+2+2, 1+2+3, 2+2+2, 2+2+3, 2+3+3,...
*sthey: 3+3, 3+3+3, 3+3+3+3,...

This should strike us as an impossible system, and indeed no three-pronoun system like (14) has been attested, although plenty like (8) have been. The hierarchy of reference in (14) is not (13) but

(15) 2 > 1 > 3

and, apparently, this hierarchy of reference does not occur.

The inclusive/exclusive distinction adds only a slight complexity to this account of the meanings of plural pronouns. Here again 2 dominates 3, so that we have reference sets like the following:

(16) I+II: 1+2, 1+2+2, 1+2+3, 1+2+2+2, 1+2+2+3, 1+2+3+3,...
I-II: 1+3, 1+3+3, 1+3+3+3,...

Elaborate systems of personal pronouns can then be summarized simply by the (morphosyntactic) person features and the (equally morphosyntactic) number features--singular (Sg) for reference sets containing exactly one element, dual (Du) for those with two, trial (Tr) for those with three, plural (Pl) for those with two or more, three or more, or four or more, depending on how many other numbers are distinguished. Here, for example, is the paradigm for the Austroasiatic language Palaung (Burling 1970:14-7): (* indicates a form that does not exist because of contradictory categories)

(17)

	Sg	Du	Pl
I+II	*	ar	ɛ
I-II	ɔ	yar	yɛ
II	mi	par	pɛ
III	ʌn	gar	gɛ

and here is the one for the Melanesian language Nokuku (described by Ray 1926:386f. under the name Nogugu, and cited by Forchheimer 1953:81):

(18)

	Sg	Du	Tr	Pl
I+II	*	orua	otolu	rie
I-II	(i) nou	omorua	omotolu	emam
II	i niko	omrua	omtolu	emiu
III	i nikin	rurua	ritolu	i rir, rire

We do not need to be told that the Nokuku II Tr form omtolu covers 2+2+3 and 2+3+3 as well as 2+2+2, or that it doesn't cover 1+2+2 or 1+2+3 (both of which are expressed by otolu). The correspondence principle in (12) and the hierarchy of reference in (13) are, indeed, assumed by writers setting out pronominal systems and by readers interpreting such descriptions. Without any exception I know of, analysts couch their descriptions in terms of morphosyntactic categories,[3] and expect their readers to understand them via something like (12) and (13).

4. The Algonquian pronominal prefixes. I turn now to a problem in the morphology of the Algonquian family of languages.

According to Bloomfield 1946, Proto-Algonquian had three inflectional prefixes indicating definite person; Bloomfield reconstructs them as

(19) *ke 'thou'
*ne 'I'
*we 'he, it' (~ ∅)

He goes on to say (with an interesting ambiguity in his use of the word person, which is both an ordinary language term and a technical term of linguistics):

(20) where more than one person is involved as possessor, actor, or goal, the preference is in the order given; thus "we inc." has ke-, but "we exc." has ne-; tr. forms for "I-thee" and "thou-me" both have ke- (Bloomfield 1946:95).

These three morphemes occur with noun stems, in which case they indicate possession, as in the following Cree forms (Bloomfield 1933:257):

(21) kitastutin 'thy hat' (prefix ki- < *ke-)
nitastutin 'my hat' (prefix ni- < *ne-)
utastutin 'his hat' (prefix u- < *we-)

and in this statement (Bloomfield 1962:38) about Menomini:

(22) the father addressing the mother will speak of keta·nen 'our (inclusive) daughter', but addressing anyone else he will speak of neta·nenaw 'our (exclusive) daughter'.

The three morphemes occur also with pronominal suffixes, the combinations serving as independent personal pronouns, as in the following Menomini forms (Bloomfield 1933:256):

(23)

	Sg	Pl
I-II	nenah	nena?
I+II	*	kena?
II	kenah	kenua?
III	wenah	wenua?

And they occur with verb stems, in which case they supply information (also marked in suffixes) as to the nature of the subject and object (Bloomfield's 'actor' and 'goal') of the verb, as in the following Menomini forms (Bloomfield 1962:37).

(24) (a) kenian 'I see thee'
kenɛ:wem 'thou seest me'
(b) nenɛ:wa:w 'I see him'
neniak 'he sees me'

(c) kan onɛ:wa:nan 'he does not see him' (prefix o- < *we-)

and in the following Potawatomi forms (rearranged from Hockett 1966: 65):

(25) (a) /k-wapm-a/ thou seest him
/k-wapm-a-mun/ we (and thou) see him
/k-wapm-a-wa/ ye see him
(b) /n-wapm-a/ I see him
/n-wapm-a-mun/ we (not thou) see him
(c) /w-wapm-a-n/ he sees the other (obv.)
/w-wapm-a-wa-n/ they see the others (obv.)

(Note the contrast between the second form in (a) and the second form in (b).)

In (21)-(23) we see that the three prefixes cannot be associated with the three grammatical persons in the ordinary way, since the *ke- forms cover inclusive first person as well as second person. In (24) and (25) we see similar behavior, but now complicated by the fact that the prefix ke- is used if either the subject of the verb or the object of the verb (or both) is second person/first person inclusive.

The descriptions of these facts in the various Algonquian languages are unclear as to whether the phenomenon involves referential person or morphosyntactic person. Bloomfield 1946, in (20) above, wrote ambiguously. Bloomfield 1962 has it both ways; describing the Menomini system, he speaks first (on page 36) of 'first person nɛ-; second person kɛ-; third person o-(w-)', then says (on page 37) that

(26) if the addressee is involved, the prefix is kɛ-...If the addressee is not involved but the speaker is, the prefix is nɛ-...If neither addressee nor speaker is involved, the prefix, if any, is o- (w-).

Bloomfield 1933:256, again alluding to Menomini, mentions referential person only:

(27) an initial element [ke-] appears in the forms that include the hearer; if the hearer is not included, [ne-] denotes the speaker; if neither is included, the initial is [we-]

and this is echoed by Gleason's 1961:230 characterization of the prefixes in Cree:

(28) /ke-/ 'the hearer is involved'
/ne-/ 'the speaker but not the hearer is involved'
/o-/ 'neither speaker nor hearer is involved'

and by Hockett's 1966:61 glossing of the prefixes in Potawatomi:

(29) /k-/ addressee involved
/n-/ addressee excluded but speaker involved
/w-/ referent not local

Occasionally, morphosyntactic person is explicitly identified with referential person, as in Frantz 1966:51, on Blackfoot:

(30)

first person	=	speaker
second person	=	addressee
third person	=	primary topic
fourth person	=	secondary topic, subordinate to third person
fifth person	=	topic subordinate to fourth person

But sometimes it seems to be morphosyntactic person that is being referred to, as when Pike and Erickon 1964:202 speak of 'the prefix formatives which are used when the subject person is 1, 2, 3, 4, 12, 1p, 2p, 3p',[4] or when Wolfart 1973:15 describes the prefixes in Plains Cree (though note his identification of referential and morphosyntactic person):

(31) The personal prefixes ki-, ni-, and o- ~ Ø mark the basic person categories in the possessive paradigm of nouns and in the independent order of verbs. ki- marks the second person, or addressee; ni- marks the first person, or speaker; and o- ~ Ø marks the person which includes neither speaker nor addressee, namely the third...ki- takes precedence over ni- and o- ~ Ø, and ni- in turn over o- ~ Ø. That is whenever a form involves a second person, whether as actor or goal, the prefix is ki-; etc. The ordering of the set of personal prefixes reflects a fundamental order principle of Cree: among the person categories, second precedes first which in turn precedes third.

At any rate, it is clear that the Algonquian pronominal prefixes involve a hierarchy of person, in some sense of person. If this is a hierarchy of referential (or semantic) person, then we are in trouble, since our putatively universal hierarchy in (13) is 1 > 2 > 3, but here the hierarchy is as in (15), that is 2 > 1 > 3.

If, on the other hand, we interpret the Algonquian hierarchy as involving some aspect of morphosyntactic person, then there need be no inconsistency: the hierarchy of reference remains, and the I+II, I-II and other forms still follow the order of dominance in (13) with respect to their reference; we understand the Algonquian categories of person just as we understand those in Palaung (17) or Nokuku (18). What Algonquian has is a hierarchy in addition to (13).

Our only problem in stating the Algonquian hierarchy properly is that of somehow putting together second person forms with first person inclusive forms, as against first person exclusive forms. But the symbolism I introduced in (9) above (with I, I+II, I-II, II, III as names for morphosyntactic categories) very nearly suffices for this purpose. All we need do is make explicit the complex character of the categories I+II and I-II; this can be done by treating I, II, and III as binary features (roughly in the manner of Postal 1966); ±I, ±II, and ±III. We will need to add some special assumptions about the relationships among these features, so as to obtain the results that

(32) A morphological system with three person distinctions has exactly the categories +I, +II, and +III.
(33) A morphological system with four person distinctions has exactly the categories +I+II, +I-II, +II, and +III.

(and perhaps still further universals in the same vein). Within this framework we can then state the Algonquian hierarchy in terms of the features ±I, ±II, and ±III:

(34) +II > +I > +III

5. Hypothetical test cases. To be fair, I must point out that the Algonquian system does not require (34) in addition to (13). The way in which morphemes are associated with their meanings could perfectly well be described by means of (15) instead of (34). I have argued that assuming (34) in addition to (13) allows us to avoid positing contradictory referential hierarchies in a single language. It is possible, however, to imagine systems in which the referential and morphosyntactic hierarchies must be stated separately if the facts are to be described adequately. I do not know of any actual languages that serve as crucial test cases in this regard, but what we would need is a language that is otherwise like an Algonquian language, but in which the morphosyntactic hierarchy has III dominating I (I assume that the referential hierarchy in (13) holds); there are three possibilities:

(35) +III > +I > +II
(36) +III > +II > +I
(37) +II > +III > +I

Hierarchy (35) will do as an example. We are supposing, then, that some hypothetical language has a morphological system with four person distinctions and that there are three affixes selected on the basis of the hierarchy in (35). By (33), the four morphosyntactic categories in this language will be +I+II, +I-II, +II, and +III. Given the hierarchy in (35), +I-II Pl will pattern with +I+II Pl and will be dominated by +III Pl--this despite the fact that

every reference set covered by +I-II Pl contains a 3 (see (16) above), just like all the reference sets covered by +III. That is, the hierarchy in (35) is distinguishable from a hierarchy stated in terms of referential categories:

(38) 3 > 1 > 2

In our hypothetical pseudo-Algonquian, (35) holds but (38) does not, since (38) would predict that +I-II Pl forms pattern with +III forms, while (35) says that +I-II Pl forms are dominated by +III forms. Similarly for (36) and (37) versus corresponding hierarchies stated in terms of referential categories.

6. The role of morphosyntactic person. Up to this point I have argued that the selection of pronominal prefix morphemes in Algonquian--that is, the selection of which morpheme to go along with which meaning--is properly a matter of morphosyntactic categories rather than referential categories. I venture to suggest that this is not merely a fact about Algonquian, but is really a universal:

(39) Only the morphosyntactic categories +I, +II, and +III, and not the referential categories 1, 2, and 3, can figure in principles for the selection of morphemes.

From (39) we can predict the absence of a pronominal system like (14)--with exactly three plural pronouns and the hierarchy of reference 2 > 1 > 3, as in (15). Such a system can't occur because, on the one hand, the only possible set of morphosyntactic categories is +I, +II, and +III (by (32)), while on the other hand, hypothesis (39) rules out morpheme selection on the basis of the categories 1, 2, and 3, so that there is no way to put together reference sets like 2+2 (which is +II) and 1+2 (which is +I), even though both reference sets contain the referential element 2.

Hypothesis (39) can probably be extended from the selection of morphemes to their ordering. Indeed, hierarchy (34), +II > +I > +III, applies to the ordering of morphemes in Cree as well as to the selection of morphemes in that language:

(40) This ordering principle [(34)] is also manifest in the fixed order of affixes in both noun and verb inflection. Non-third markers always precede third-person markers, and among non-third markers, second-person markers precede first-person markers. (Wolfart 1973:15)

An extension of hypothesis (39) would also permit the formulation of a surface structure constraint requiring clitic pronouns to occur in the order

(41) +II +I +III

as in the treatment of Spanish by Perlmutter 1970, but would bar the formulation of a similar constraint mentioning referential categories. What would be ruled out would be a language which had three plural pronouns (like Spanish) and which required clitic pronouns to occur in the order

(42) 2 3 1

Such a language would have the first plural pronoun preceding the third plural pronoun if the first plural pronoun was understood inclusively (as, say 1+2) but following the third plural if the first plural was understood exclusively (as, say 1+3). I know of no ordering principles that have to be stated like (42) rather than like (41), and so I suggest (with the usual warning about its tentativeness) the hypothesis

(43) Only the morphosyntactic categories +I, +II, and +III, and not the referential categories 1, 2, and 3, can figure in principles governing the ordering of morphemes.

In contrast to hypotheses like (39) and (43), which concern themselves with situations in which morphosyntactic rather than referential categories are at work, there are hypotheses to be stated about situations of the opposite sort, in which referential rather than morphosyntactic categories are the key. One example of this sort is the summing up of person in conjoined noun phrases, illustrated in the choice of reflexive pronouns in

(44) You and I should behave ourselves.
She and I will give ourselves a treat.
You and Janet and I have to get ourselves going.
You and Harold shouldn't have perjured yourselves.
Margot and Esther made themselves scarce.

We would not want to sum up morphosyntactic person, for then the choice of anaphoric pronoun would have to be stated in terms of a hierarchy

(34) +I > +II > +III

that exactly duplicates the independently required hierarchy of reference (13). Instead, we may propose, with McCawley 1968:145 that

(46) the index of a conjoined noun phrase be the set-theoretic union of the indices of its conjuncts.

in the sense that the reference set associated with a conjoined noun phrase be the combination of the reference sets associated with its conjuncts.

7. Jottings on person systems. I turn now to several questions that concern person systems in general. My comments here barely scratch the surface; this is no Beitrag zur allgemeinen Personlehre. And as above, my remarks treat person distinctions only and do not touch on such related features as deference, proximity, definiteness, gender, obviation, individuation, collectivity, and so on.

A morphological system with forms expressing the semantic categories +I+II, +I-II, +II and +III is nearly as complex as person systems get. This four-category system naturally resolves itself into two binary features, ±Speaker and ±Addressee (or, as some writers prefer, ±Ego and ±Tu, or ±Me and ±You); indeed, dozens of analysts (for instance, Hale 1973:322 and Burling 1970:16) have come up with a two-by-two arrangement like

(47)

	+Speaker	-Speaker
+Addressee	+I+II	+II
-Addressee	+I-II	+III

The referential correlates of the features in (44) are simple. ±Speaker means that the reference set contains/does not contain 1, and ±Addressee means that the reference set contains/does not contain 2. The correspondence principle in (12) and the hierarchy of reference in (13) can be restated in terms of these features, should anyone want to do this:

(48) (a) If +Speaker, then +I;
  (i) if +Addressee, then +I+II;
  (ii) otherwise, +I-II;
 (b) otherwise, if +Addressee, then +II;
 (c) otherwise, +III.

However, the question is whether the features are needed in addition to, or instead of, the classification into morphosyntactic persons. I will argue that they are not, at least as part of a universal vocabulary for language description.

But first I should point out that the feature ±Addressee has some utility, since it can be used to predict syncretisms of person forms. The reasoning here depends on certain assumptions about the most expected directions of levelling in morphological systems, ultimately upon the hypothesis that 'les lois qui dirigent les syncrétismes sont en rapport avec les lois dirigeant la structure du système' (Hjelmslev 1935:104), but more immediately on assumptions like the following:

(49) The forms most likely to be represented by the same morpheme are those distinguished by a single feature.

The assignment of features in (47) along with the hypothesis in (49) predicts a formal connection between the inclusive first person plural (+I+II) and the second person (+II), since these persons share the feature +Addressee and differ only in the feature ±Speaker. This formal connection has in fact been observed. Thus, for verbs in the Veracruz dialect of Aztec (problem 110 in Nida 1949):

(50) (a) +I Sg and +I-II Pl share a prefix, ni-;
 (b) +II Sg and +I+II Pl share a prefix, ti-;
 (c) +II Pl has a distinct prefix, aŋ-.

(The formal connection between +I+II and +II is to be seen in (50a)).

And in the Yawelmani dialect of Yokuts (Newman 1944:231f.), the subject pronouns

(51) (a) +I Sg na', +I-II Du na'ak, +I-II Pl na'an share initial na', while
 (b) +I+II Du mak, +I+II Pl may show the initial ma of second person forms like +II Sg ma', +II Du ma'ak, and +II Pl ma'an,

so that there is a formal connection between +I+II and +II to be observed in (51b).[5]

From (47) we would expect +I+II forms to show similarities to other first person forms as well as to second person forms, and this prediction is again borne out, most strikingly in those pidgins that have constructed an inclusive first person plural pronoun by compounding the first person singular pronoun with the second person singular pronoun, as in Neo-Melanesian jumi 'we (incl.)' = ju 'you (sg.)' + mi 'I', which contrasts with mifɛlə 'we (excl.)' and jufɛlə 'you (pl.)' (Hall 1966:50f.).

The assignment of features in (47) also predicts a formal connection between the second and third persons (as opposed to the first persons), since +II and +III share the feature -Speaker and differ only in the feature ±Addressee. Some cases of syncretism of this sort have been reported in the Paleosiberian languages:

(52) In Gilyak the neutral moods alone possess a personal and number indication in opposing the first to the non-first person singular; a common form for the second and third person is a frequent phenomenon in the conjugation of all Luorawetlan languages. (Jakobson 1942:617)

There are also languages with similarities in form between +II and +III, short of neutralization as in Luorawetlan. The Menomini personal pronouns given in (23) above show three stems, for instance:

(53) (a) -nah in Sg;
(b) -na? in +I+II Pl and +I-II Pl;
(c) -nua? in +II Pl and +III Pl.

(The similarity in form is exhibited in (53c).)

On the other hand, the arrangement of features in (47) predicts one formal connection that has never to my knowledge been reported—between third person and exclusive first person (the +III and +I-II categories sharing the feature -Addressee and differing only in the feature +Speaker), as opposed to second person and inclusive first person.

Moreover, the assignment of features in (47) fails to predict one formal connection that has been widely observed, that between +I and +II taken together, as opposed to +III--for instance in the many languages in which the +III forms differ from the others by resembling demonstrative pronouns or nouns, or (as in Latin) in which demonstrative forms serve as +III pronouns; or in the Paleosiberian language Yukaghir, where 'the first person and the second tend to fuse' (Jakobson 1942:617); or in the Athabaskan language Chippewayan (Forchheimer 1953:137f.), where the distinction between the +I Pl and +II Pl disjunctive pronouns is neutralized (+I Sg si and +II Sg nen versus +I Pl and +II Pl nukni); or in the Mexican language Sierra Popoluca, which has among its verb suffixes

(54) -ta?m, used when either the subject or object...is in the first or second person, and pluralizing either the subject or object; -yah, used when either the subject or object is in the third person, and pluralizing either the subject or object. (Foster and Foster 1948:18).

Our difficulty in getting (47) to fit the known facts of language via linking assumptions like (49) seems to arise from the great variety of internal relationships among the persons in the languages of the world. Although there are some relationships (like the one between +I-II and +III) that have not been exemplified, virtually all the others have been, even some that fit none of the classificatory schemes I have been discussing; thus Jakobson 1942: 617 reports a (rare) case of a neutralization (in the Paleosiberian language Ket) of +I and +III forms as opposed to +II. The internal intricacy of the person categories is well known; it is the source of difficulties that scholars of language universals have had in deciding which of the categories is the most marked and which the most unmarked (see the brief discussion in Greenberg 1966:44f., and also Benveniste). In any case, the number of categories under analysis is quite small, so that if there are more than a few internal relationships several different and incompatible analyses into features will be possible. As a result, I see no rational way of deciding whether (47) is the 'right' componential analysis, as opposed to, say

(55)

	+Subjective	-Subjective	
+Local	+I-II	+II	
-Local	+I+II	+III	

(an analysis distantly related to the distinctions made by Benveniste 1971:197-204).

Whatever might be the best analysis for systems with four distinct persons, no system of features like those in (47) or (55) can suffice for the universal analysis of person systems, since there are languages with more than four distinct categories. Sierra Popoluca, in particular, has three first person plural affixes in verbs:

(56) The exclusive plural excludes the person or persons addressed. The limited inclusive plural includes the speaker and the person or persons addressed, and excludes any others who may be present or referred to. The generalized inclusive plural includes the speaker, person or persons addressed, and any other person or persons present, or absent and referred to. (Foster and Foster 1948:19)

The first person exclusive plural, like the second person plural in Sierra Popoluca, is indicated (optionally) by the number suffix -ta?m (see (54) above), and is obviously the least marked category of the three; the limited inclusive plural is indicated by the prefix ta(n)-; and the generalized inclusive, clearly the most marked category of the three, is indicated by ta(n)- plus ta?m.

In the framework of symbolism I have been developing here, the Sierra Popoluca categories are as follows:

(57)

name	morphosyntactic category	reference sets covered in Pl
general inclusive first person	+I+II+III	1+2+3, 1+2+2+3, 1+2+3+3,...
limited inclusive first person	+I+II-III	1+2, 1+2+2, 1+2+2+2,...
exclusive first person	+I-II	1+3, 1+3+3, 1+3+3+3,...
second person	+II	2+2, 2+3, 2+2+3, 2+3+3,...
third person	+III	3+3, 3+3+3, 3+3+3+3,...

This system presents truly new aspects, since 3 dominates 2 in +I+II (though not, of course, elsewhere).

These new details suggest that if any language distinguishes inclusive and exclusive second person plurals—I know of none that do, but expect that there are some--the forms would be:

(58) +II+III: 2+3, 2+2+3, 2+3+3,... (inclusive)
+II-III: 2+2, 2+2+2, 2+2+2+2,... (exclusive)

The prediction would be that no language distinguishes two grammatical persons covering the reference sets:

(59) (a) 2+2, 2+2+2, 2+2+3, 2+2+2+2, 2+2+2+3, 2+2+3+3,...
(b) 2+3, 2+3+3, 2+3+3+3,...

(in which the 'inclusive' second person in (59a) includes two 2s, while the 'exclusive' second person in (59b) excludes a second 2).

Given all of the observations so far, we can work out the fullest possible system of morphological persons. This would have six categories--

(60)

category	reference sets covered
+I+II+III	1+2+3, 1+2+2+3, 1+2+3+3,...
+I+II-III	1+2, 1+2+2, 1+2+2+2,...
+I-II	1, 1+3, 1+3+3, 1+3+3+3,...
+II+III	2+3, 2+2+3, 2+3+3,...
+II-III	2, 2+2, 2+2+2, 2+2+2+2,...
+III	3, 3+3, 3+3+3,...

plus three possible 'common' or unspecified categories--

(61)

category	subsumes
+I+II	+I+II+III, +I+II-III
+I	+I+II, +I-II
+II	+II+III, +II-III

so that there is a total of nine possible person categories (excluding distinctions of deference, proximity, and the like). I know of no language with anything like this total, and (interestingly enough) the relative parsimony of existing person systems arises only in part from the absence of complex categories like +I+II+III; it arises also from the absence of common or unspecified categories in systems that have more complex categories--in some ways a rather surprising absence, given the frequency of unspecified terms elsewhere in the vocabularies of languages. We frequently find triples like the English person (sex unspecified), woman (sex specified as female), and man (sex specified as male), but corresponding examples in person systems are very hard to come by. We do not find languages with three distinct pronouns for the categories +I Du ('me and someone else'), +I+II Du ('me and you'), +I-II Du ('me and him'), though these would parallel person, woman, and man in the sphere of person rather than gender. What we do find (sometimes) is the neutralization in one number of subcategorization made in another, as in the 'common' +I Pl pronoun kisu in the Himalayan language Lower Kanawari (Forchheimer 1953:115), a pronoun that

subsumes both +I+II Pl and +I-II Pl, though the Du has distinct forms, +I+II Du nisi and +I-II Du kasu.

Footnotes

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1. I have left out reference sets like 1+1, 1+1+2, and 1+1+3, sets that would correspond to a true first person plural, involving reference to several speakers (in contrast to reference to one speaker plus one or more people other than the speaker): 'If there cannot be several "I"s conceived of by an actual "I" who is speaking, it is because "we" is not a multiplication of identical objects but a junction between "I" and the "non-I", no matter what the content of this "non-I" may be' (Benveniste 1971:202). No language has been reported with multiple speaker morphemes distinct from speaker plus other morphemes, even though there are occasional circumstances--Greek choruses and some jointly written texts--in which several people speak simultaneously or as one, and for which multiple speaker forms would be appropriate. First person plural forms are used on such occasions. As it happens, this is just what is predicted by the discussion below, so that the omission of multiple speaker reference sets from (8) is not significant.

2. Something like (10) has figured in many discussions of person in languages, most recently perhaps in Sadock 1974:28-30, where disjunctively ordered rules are stated.

3. Though the names or symbols for those categories vary quite a bit: (inclusive/exclusive) first person plural, 1st Pl (incl/excl), I Pl (Incl/Excl), 12 vs. 1p, 12 vs. 11, among others.

4. Pike and Erikson are here writing in response to Hockett 1948 on Potawatomi; Hockett 1966 is a reply in turn.

5. Notice that the Nokuku system in (18) above is unusual, in that it has +I-II (first person exclusive) forms resembling the +II forms: +I-II Du, +II Du, +I-II Tr, and +II Tr share the morpheme om-, while +I-II Pl emam and +II Pl emiu contrast with +I+II Pl rie and +III Pl i rir/rire. The peculiarity is apparently widespread in Austronesian.

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