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Person and deixis in Heiltsuk pronouns

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Abstract

Harbour (2016) argues for a parsimonious universal set of features for grammatical person distinctions, and suggests (ch. 7) that the same features may also form the basis for systems of deixis. We apply this proposal to an analysis of Heiltsuk, a Wakashan language with a particularly rich set of person-based deictic contrasts (Rath 1981). Heiltsuk demonstratives and third-person pronominal enclitics distinguish proximal-to-speaker, proximal-to-addressee, and distal (in addition to an orthogonal visibility contrast). There are no forms marking proximity to third persons (e.g., 'near them') or identifying the location of discourse participants (e.g., 'you near me' vs. 'you over there'), nor does the deictic system make use of the clusivity contrast that appears in the pronoun paradigm (e.g., 'this near you and me' vs. 'this near me and others'). We account for the pattern by implementing Harbour's spatial element χ as a function that yields proximity to its first- or second-person argument.

Keywords: person, deixis, pronouns, Heiltsuk

Résumé

Harbour (2016) propose un ensemble universel et parcimonieux de traits universels pour rendre compte des distinctions grammaticales de personne, et suggère (ch. 7) que ces mêmes traits peuvent également servir de base aux systèmes de deixis. Nous appliquons cette approche à une analyse de heiltsuk, une langue wakashan avec un système particulièrement riche de

contrastes déictiques basés sur la personne (Rath 1981). Les démonstratifs de heiltsuk, ainsi que les enclitiques pronominaux à la troisième personne, distinguent entre le proximal au locuteur, le proximal à l'écouteur, et le distal (en plus d'un contraste orthogonal de visibilité). Il n'y a pas de formes qui marquent la proximité à une troisième personne (p. ex. 'près d'eux') ni qui situent les participants au discours (p. ex. 'vous près de moi' vs 'vous à distance'). Le système démonstratif n'utilise pas non plus le contraste de clusivité qui figure dans le paradigme pronominal (par exemple, 'celui près de toi et de moi' vs 'celui près de moi et d'autres'). Nous expliquons ce système en modifiant l'élément spatial χ de Harbour (2016), en une fonction qui retourne une relation de proximité par rapport à son argument de première ou de deuxième personne.

Mots-clés: personne, deixis, pronoms, heiltsuk

1. Introduction

Heiltsuk, a Wakashan language spoken in British Columbia and sometimes known as Bella Bella, combines grammatical person and deixis in a rich pronominal paradigm that offers insight into the semantic connections between these categories, and into the typology of their morphosyntactic representations.[1] As illustrated in (1), Heiltsuk demonstratives and third-person pronominal clitics have a three-way contrast among 'close to speaker' (labelled I and II by Rath 1981), 'close to addressee' (Rath's III and IV), and 'over there' (V and VI), cross-classifying with a visibility distinction, and supplemented by a seventh category for 'absent' or 'gone'.[2]

(1) a. Heiltsuk demonstratives (Rath 1981: 87–88, 91)

	CLITIC	FULL	GLOSS
I	*gaχ*^{w}	*gáq*^{w}	'this' (here with me)
II	*gatsχ*^{w}	*gátsq*^{w}	'this' (here with me, invisible)
III	*quχ*^{w}	*qúq*^{w}	'that' (there with you)
IV	*quχtsχ*^{w}	*qúχ*^{w}*tsq*^{w}	'that' (there with you, invisible)
V	*qiχ*^{w}	*qíq*^{w}	'that' (over there / under discussion)
VI	*qitsχ*^{w}	*qítsq*^{w}	'that' (over there / under discussion, invisible)
VII	*qkiχ*^{w}	*qkíq*^{w}	'that' (absent / gone)

b. Heiltsuk pronouns (Rath 1981: 77)

		SUBJECT	OBJECT	
1st	sg.	*=nug*^{w}*(a)*	*=entɬ(a)*	
1st	incl.	*=ents*	*=entɬents*	
1st	excl.	*=entk*^{w}, *=entx*^{w}	*=entɬentk*^{w}, *=entɬentx*^{w}	
2nd		*=su*, *=tsu*	*=utɬ(a)*	
3rd	I	*=k*$^{(w)}$, *=x*$^{(w)}$	*=qk*, *=qx*	(3rd near me)
3rd	II	*=k*$^{(w)}$*ts*, *=x*$^{(w)}$*ts*	*=qkts*, *=qxts*	(3rd near me, invis.)
3rd	III	*=uq*^{w}, *=ux*^{w}, *=u*	*=q*^{w}	(3rd near you)

[1]The following abbreviations are used: 1st/2nd/3rd: first/second/third person; AGR: agreement; EXCL: exclusive; INCL: inclusive; INVIS: invisible; SG: singular; UG: Universal Grammar; WALS: World Atlas of Language Structures.

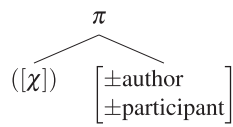
[2]Throughout this paper, forms have been adapted from Rath's orthography to something closer to IPA.

3rd	IV	= *uχʷtɬ*	=*qʷtɬ*	(3rd near you, invis.)
3rd	V	= *i*	=*qi*	(3rd over there)
3rd	VI	= *itɬ*	=*qitɬ*	(3rd over there, invis.)
3rd	VII	= *kʲʷ)i*	=*qki*	(3rd absent / gone)

Within the third-person forms (both pronouns and demonstratives), then, Heiltsuk seems to partially recapitulate the contrasts made in the person paradigm as a whole, but with two potentially significant omissions: there are no forms marking proximity to third persons ('there with them'), and the clusivity contrast in the first-person pronouns is not made in the deictic system (i.e., there is no distinction between 'here with you and me' and 'here with me'). This raises two questions for theories of universal person features such as those of Harbour (2016) and Cowper and Hall (2019), who both posit that languages with three-way (1st vs. 2nd vs. 3rd) and four-way (1st exclusive vs. 1st inclusive vs. 2nd vs. 3rd) person systems use the same two features ([±participant] and [±author]), but organize them differently. If these same features give rise to person-based deictic systems, does this mean that in Heiltsuk, person features occur in two different syntactic configurations: one for the referential properties of the pronouns, and the other for the orientation of demonstratives and third-person pronouns? And given the presence of a clusivity distinction in the first of these and its absence in the second, is it possible for a single language to use two different configurations of person features?

We argue here that the Heiltsuk paradigms can be accounted for with a single consistent organization of person features, with the I/II and III/IV demonstratives derived by the application of a modified version of Harbour's (2016) spatial head χ. We propose an interpretable feature [χ] that optionally occurs on the same head that hosts person and number features (π); [χ] is semantically interpreted as a function that takes an individual as its argument and returns the property of being near that individual. The proposed structure of the π head is thus as in (2).

(2)



The paper is structured as follows: section 2 presents theoretical background on person features and the connection between person and deixis; section 3 describes the Heiltsuk data to be accounted for; section 4 presents our analysis and shows how it derives the system of contrasts in the Heiltsuk paradigms; and section 5 discusses the implications of the analysis and the directions it suggests for future work.

2. Theoretical Context: Person Features and Deixis

2.1 Person features and their typological motivation

In an extensive cross-linguistic survey of grammatical person systems, Harbour (2016) finds that the attested range of person contrasts is strikingly limited. Positing an ontology of persons that comprises a unique author (or speaker/signer)

i, a unique addressee *u*, and arbitrarily many others *o*, *o′*, *o″*, etc., Harbour first notes that person systems can distinguish up to four combinations of these entities: i_o (the author and zero or more others, i.e. first person exclusive), iu_o (the author, the addressee, and zero or more others, i.e. first person inclusive), u_o (the addressee and zero or more others, i.e. second person), and o_o (one or more others, i.e. third person). Mathematically, a set with four members – in this case, the set $\{i_o, iu_o, u_o, o_o\}$ – can be partitioned in 15 distinct ways (see Harbour 2016: 41 for the list of possibilities, or Rota 1964 for discussion of the mathematics of set partitions more generally). As Harbour points out, only five of these fifteen partitions occur as person systems in natural languages; these five are listed in (3).[3]

(3) a. 'Monopartition': no contrasts
$\{i_o, iu_o, u_o, o_o\}$

b. Author bipartition: first *vs.* non-first
$\{i_o, iu_o\}$ / $\{u_o, o_o\}$

c. Participant bipartition: non-third *vs.* third
$\{i_o, iu_o, u_o\}$ / o_o

d. Standard tripartition: 1st *vs.* 2nd *vs.* 3rd
$\{i_o, iu_o\}$ / u_o / o_o

e. Quadripartition: 1st excl. *vs.* incl. *vs.* 2nd *vs.* 3rd
i_o / iu_o / u_o / o_o

The narrow range of attested partitions suggests that languages represent person using a limited number of features that pick out natural classes. Harbour (2016) proposes that UG provides just two person features, [±author] and [±participant]. This straightforwardly accounts for the first three systems in (3): Monopartition languages (the system in (3a)) use neither of these features; author bipartition languages (3b) use only [±author]; and participant bipartition languages (3c) use only [±participant].

Languages with more than a two-way person contrast must use more than one binary feature; the challenge is to allow for both the standard tripartition (3d) and quadripartition (3e) without introducing an additional feature (such as [±addressee]) that would predict an unattested bipartition (such as $\{iu_o, u_o\}$ / $\{i_o, o_o\}$). Harbour's (2016) crucial innovation is to define the features in such a way that their ordering matters: tripartition and quadripartition each use both [±author] and [±participant], but in different orders. For Harbour, this is accomplished by defining the features as operations on sets of sets of persons. Positive feature values add elements to a semilattice; negative feature values subtract elements. Reordering the features changes the order in which the operations apply, and so the two possible orders of [±author] and [±participant] yield the standard tripartition and quadripartition.

[3]In identifying this typology, Harbour abstracts away from morphological syncretisms within grammars to consider only the overall set of persons distinguished in each language as a whole. For example, a particular pronoun or agreement paradigm might include a form that conflates iu_o and u_o to the exclusion of i_o and o_o, but this can only happen in a language that has quadripartition as in (3e); there are no languages that systematically make the tripartition i_o / $\{iu_o, u_o\}$ / o_o or the bipartition $\{iu_o, u_o\}$ / $\{i_o, o_o\}$.

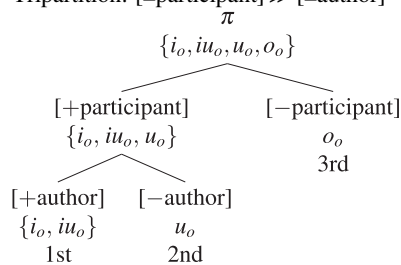
Cowper and Hall (2019) show that the same result can be achieved with features defined in the more familiar way as first-order predicates, if those features are organized into a contrastive hierarchy of the sort used in phonology (Dresher 2009). In this approach, the ordering of features corresponds to their hierarchical scope, rather than to the order of operations. Cowper and Hall define the feature values as in (4), following Halle (1997).

(4) a. [+author] = 'includes the speaker'
b. [−author] = 'does not include the speaker'
c. [+participant] = 'includes a(t least one) discourse participant'
d. [−participant] = 'does not include a discourse participant'

The features successively divide the set π of possibly distinguishable persons, $\{i_o, iu_o, u_o, o_o\}$, into subsets, as in the procedure described by Dresher (2009: 16).[4] This recursive division can be represented in tree form. While the resulting structures superficially resemble feature geometries of the type used in phonology by, for instance, Clements and Hume (1995) and applied to morphosyntax by Harley and Ritter (2002), they do not purport to show how features are organized in the representations of individual lexical syntactic objects. Rather, they represent the relative scope of contrasts in the person system as a whole.[5]

If [±participant] takes scope over [±author], as in (5), the result is the standard tripartition (3d). The set π is first divided by [±participant], which distinguishes third persons from the set of entities containing discourse participants. The set consisting of just o_o cannot be further divided, so [±author] is contrastive only within the [+participant] branch, where it distinguishes first persons from second, resulting in a three-way person system with no clusivity contrast.

(5) Tripartition: [±participant] ≫ [±author]

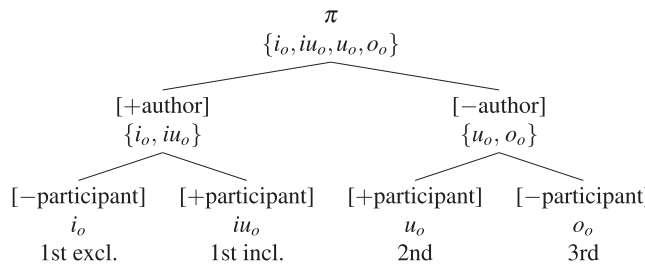


[4]Dresher's (2009: 16) Successive Division Algorithm for assigning features to phonological inventories terminates when each underlying phoneme has a distinct representation, and does not presuppose a fixed set of features. As applied to person features by Cowper and Hall (2019), the algorithm terminates when the chosen set of features has been exhausted, and does not necessarily end up fully differentiating the members of π, as can be seen in (5).

[5]See Harbour and Elsholtz (2012) and Hall and Cowper (2016) for arguments against the use of feature geometries in morphosyntax.

Quadripartition is derived by giving [±author] wider scope, as in (6). In order for [±participant] to be contrastive in the [+author] branch, its interpretation must be narrowed to '{includes, does not include} a discourse participant *other than the author*'; it can then distinguish inclusive from exclusive first persons. Cowper and Hall argue that this narrowing can be taken to apply automatically, in the same way that the phonetic interpretation of a phonological feature can depend on its scope in a phonological contrastive hierarchy.[6] In the [−author] branch, [±participant] will distinguish second person from third (whether or not narrowing applies). The result is quadripartition (3e).

(6) Quadripartition: [±author] ≫ [±participant]



The narrowing of the interpretation of [±participant] in (6) serves the same descriptive purpose as Halle's (1997) parameter allowing or disallowing the feature combination [+author, −participant], but in a less ad-hoc way. The semantic breadth or narrowness of [±participant] is naturally tied to the breadth or narrowness of its contrastive scope. Furthermore, no analogous narrowing of the interpretation of [±author] can be applied to allow full cross-classification of features in (5); the notion 'author other than a discourse participant' is incoherent.

In the rest of this paper, we assume Cowper and Hall's (2019) revision of Harbour's (2016) person features. This allows the features to be treated as first-order predicates while still capturing Harbour's typological generalizations. However, it would also be possible to adapt our analysis of Heiltsuk to Harbour's original definitions of the person features. What is crucial to our analysis is what Harbour's and Cowper and Hall's systems have in common: the only two person features are [±author] and [±participant], and the difference between tripartition and quadripartition is derived by their ordering.

2.2 The relation between person and spatial deixis

As the Heiltsuk demonstrative paradigm in (1) shows, person and spatial deixis are clearly connected in at least some languages. What is less obvious is whether these two forms of deixis are universally bound up with each other, or whether they can be separate.

[6]An explicit, if cumbersome way of unifying the denotation of [±participant] would be to say that it means '{includes, does not include} at least one discourse participant whose presence is not already established by a feature with higher scope in the contrastive hierarchy'.

Some spatial deictic systems seem to be based directly on person contrasts, like that of Japanese, shown in (7). The three-way spatial contrast corresponds directly to the tripartition in the person system.

(7) Japanese: Person-based tripartite spatial deixis

a. *kore* 'this near me'

b. *sore* 'that near you'

c. *are* 'that far from us both'

Other languages, such as English, seem to express spatial deixis purely in terms of distance, without direct reference to person contrasts. However, it is difficult to rule out the possibility that two-way contrasts like the one in (8) are also based on person in some way. Distance-based systems refer to a contextually determined deictic centre that typically coincides with the speaker's location, so that 'not near me' and 'not near here' are indistinguishable.[7]

(8) English: Distance-based bipartite spatial deixis

a. *this* (proximal)

b. *that* (distal)

Languages with unambiguously person-based spatial deixis are less common than ones with distance-based systems, but are robustly attested. In the World Atlas of Linguistic Structures (WALS), Diessel (2013) reports on the number of distinctions exhibited by demonstrative systems cross-linguistically. The majority of languages in Diessel's survey have only a two-way distance contrast in demonstratives; for such languages, as in English, it is not possible to distinguish a purely distance-based system from one based on person. For languages with three or more distinctions among demonstratives, however, intermediate grades of demonstratives show a difference. In a purely distance-based system, an intermediate demonstrative is at a middle distance from the speaker, while in a person-based system, an intermediate demonstrative is instead proximate to the addressee. Table 1 shows, for those languages in Diessel's survey for which we have been able to obtain grammars, how many systems with three or more distinctions in the demonstrative system are person-based, as opposed to based purely on distance or visibility.

The fourteen three-way person-based systems in this survey include Amele, Ewondo, Guaraní, Hawaiian, Japanese, Ket, Korean, Maori, Nunggubuyu, Passamaquoddy-Maliseet, Ponapean, Taslhlhiyt, Tuvaluan, and Yimas; other languages with three-way person-based systems include Turkish (Harbour 2016: 176),[8] and Katla (Tucker and Bryan 1966).

Hausa and Iraqw are the two potentially four-way person-based demonstrative systems identified in Table 1, but both these languages in fact exhibit a three-way

[7]Cowper and Hall (2002, 2014a) note that English *this* and *that* can mark either a spatial or a discursive proximal–distal contrast.

[8]Turkish is incorrectly identified in Diessel (2013) as having only a two-way contrast in demonstratives.

	Person	Distance	(Unable to Determine)	Total
3 distinctions	14	71	(3)	88
4 distinctions	2	6	—	8
5+ distinctions	1	3	—	4

Table 1. Person and distance contrasts in demonstrative systems included in WALS

person partition together with a further contrast in visibility. The combination of person and visibility is illustrated in (9) for Iraqw (Mous 1993: 90):

(9) Iraqw: Person-based tripartition + visibility spatial deixis

a. *í* or *ká* 'this near me'

b. *síng* 'that near you'

c. *qá'* 'that near neither of us, but still visible'

d. *dá'* 'that far away'

Koasati is the only language in Diessel's (2013) survey with a five- or more-way person-based demonstrative system. According to Kimball (1991), Koasati has ten demonstratives, but like the four-way demonstrative systems just mentioned, it exhibits only a tripartition in person, seen in the bolded forms in (10).

(10) Koasati: Person-based tripartition + visibility and distance spatial deixis

a. yólli 'this very one'

b. yín 'this here'

c. yá 'this'

d. **yaʔá** 'this by me'

e. má 'that'

f. **maʔa** 'that by you'

g. **yá:fa** 'that away from us both, but not too far off'

h. má:fa 'that there'

i. mă::fa 'that way over there'

j. akkó 'that very far away, or out of sight'

Investigation of the database of personal and demonstrative pronominal systems in Bliss and Ritter (2009) yielded one other five-way demonstrative system, Marshallese (Bender et al. 2016: 179). Interestingly, this is the only demonstrative system we have found with a person-based quadripartition, to which is added a fifth "remote" demonstrative.[9] Two other languages, Waray-Waray and Cebuano, are identified by Harbour (2016: 171–178) as having four-way person-based demonstrative systems.

[9]Like Turkish, Marshallese is included in Diessel's (2013) survey, but is identified there as exhibiting only a two-way distinction among demonstratives.

Harbour (2016) argues that cross-linguistically, features of both person and distance are used in deictic systems. For person-based systems, deixis is encoded by a projection χ above the person projection π. χ is a predicate that takes a set of individuals satisfying a person specification in π, and returns a "characteristic space" of the (set of) individuals (Harbour 2016: 179). A tripartite deictic system could thus be derived from the person tripartition, as in (11):

(11) a. Proximal [+part, +author]
b. Medial [+part, −author]
c. Distal [−part]

In such a system, medial distance would be associated with proximity to the addressee. As Harbour notes, however, this cannot capture the more complex distinctions found in demonstrative systems, given that there are four and five-way distance-based contrasts (which could not be modelled with a person tripartition), and three-way systems where the medial demonstrative is at a distance from both speaker and hearer ('proximal–distal–yonder', as in some varieties of Gan; see Chen 2015).

Nonetheless, we might still expect that in any language that makes person-based contrasts in the deictic system, these will be based on the same partition (i.e., the same ordering of features) that is used in the person paradigm proper. As this would predict, among the 123 languages included in the Calgary Pronoun Database (Bliss and Ritter 2001, 2009), no language makes more person-based distinctions in its demonstrative system than in its personal pronoun system.

One possible exception is Heiltsuk, which seems to use person features in two different ways within the pronoun system itself (Rath 1981). As noted in the introduction, this system raises two important questions. First, are person features represented in two different syntactic positions in Heiltsuk? And second, can a language hierarchically order person features differently in different areas of the grammar?

3. Heiltsuk: Pronouns and Demonstratives

In the Heiltsuk demonstrative system, there is a three-way person contrast that follows the standard tripartition, combined with a visibility distinction. Rath (1981) labels the contrasting demonstratives with roman numerals as shown in the paradigm in (12), repeated from (1a).

(12) Heiltsuk demonstratives (Rath 1981: 87–88, 91)

	CLITIC	FULL	GLOSS
I	*gaχ*^{w}	*gáq*^{w}	'this' (here with me)
II	*gatsχ*^{w}	*gátsq*^{w}	'this' (here with me, invisible)
III	*quχ*^{w}	*qúq*^{w}	'that' (there with you)
IV	*quχ*^{w}*tsχ*^{w}	*qúχ*^{w}*tsq*^{w}	'that' (there with you, invisible)
V	*qiχ*^{w}	*qíq*^{w}	'that' (over there / under discussion)
VI	*qitsχ*^{w}	*qítsq*^{w}	'that' (over there / under discussion, invisible)
VII	*qkiχ*^{w}	*qkíq*^{w}	'that' (absent / gone)

The 'absent/gone' forms (VII) behave differently enough from classes I–VI that they may constitute a different kind of nominal altogether. For example, they can have other pronominal clitics III–VI stacked on top of them; see Rath (1981: 79). We therefore set them aside in the following discussion to focus on the person-based contrasts in I–VI.

Examples of the use of demonstratives of two different classes are shown in (13). The suffixes glossed as AGR1 and AGR2 are what Rath calls 'primary and secondary deictics'; they agree with the person and deixis features of the demonstrative, as indicated by the immediately following roman numeral.

(13) a. *gaχ^{w} wísem-ga-χga*
this.I man-AGR1.I-AGR2.I
'This man' (Rath 1981: 88)

b. *qiχ^{w} wísm-á-χi*
that.V man-AGR1.V-AGR2.V
'This man (talked about), that man (over there)' (Rath 1981: 88)

Taken by itself, the demonstrative paradigm in (12) exhibits a large but not necessarily surprising set of deictic contrasts. The picture becomes more complex if we compare the demonstratives with the pronominal system in (14), repeated from (1b):[10]

(14) Heiltsuk pronominal enclitics (Rath 1981: 77)

		SUBJECT	OBJECT
1st	sg.	*=nug^{w}(a)*	*=ent̓(a)*
1st	incl.	*=ents*	*=ent̓ents*
1st	excl.	*=entk^{w}, =entx^{w}*	*=ent̓entk^{w}, =ent̓entx^{w}*
2nd		*=su, =tsu*	*=ut̓(a)*
3rd	I	*=k$^{(w)}$, =x$^{(w)}$*	*=qk, =qx*
3rd	II	*=k$^{(w)}$ts, =x$^{(w)}$ts*	*=qkts, =qxts*
3rd	III	*=uq^{w}, =ux^{w}, =u*	*=q^{w}*
3rd	IV	*=uχ^{w}ts*	*=q^{w}ts*
3rd	V	*=i*	*=qi*
3rd	VI	*=its*	*=qits*
3rd	VII	*=k$^{(w)}$i*	*=qki*

Examples of the use of pronominal clitics are shown in (15). (15a) shows a pronominal subject and nominal object; (15b) shows both subject and object pronouns.[11]

(15) a. *dáduq^{w}la =í w'ác'-iá-χi*
watch =3rd.V dog-AGR1.V-AGR2.V
'They (over there) watch (the) dog (over there).' (Rath 1981: 92)

[10]Rath refers to the forms in (14) as "pronominal agreement markers", a type of "Category C suffixes", but notes (1981: 75) that they are in fact clitics rather than affixes, and they are in many contexts in complementary distribution with overt arguments. For these reasons we assume that these are pronominal argument clitics, and refer to them as pronouns.

[11]As Heiltsuk third-person pronouns mark neither number nor gender (Rath 1981: 79– 80), the English words *they* and *them* in the translations in (15) should be read as intentionally ambiguous between the plural and the epicene singular.

b. *dáduq^{w}la =í =qi*
watch =3rd.v = 3rd.v
'They (over there) watch them (over there).' (Rath 1981: 93)

Both the differences and the similarities between the pronoun paradigm in (14) and the demonstrative paradigm in (12) raise questions that potentially challenge the formalization of grammatical person articulated in section 2.1, in which each language derives its person system from zero, one, or both of the universal features [±participant] and [±author], organizing the features into a contrastive hierarchy if both are used.

While the demonstratives in (12) show only a three-way person contrast – Harbour's (2016) standard tripartition – the pronouns in (14) encode a clusivity contrast, and so exhibit quadripartition. From a functional point of view, this is not particularly surprising: the inclusive–exclusive distinction is more likely to be relevant in identifying persons as opposed to places. Formally, though, if quadripartition and tripartition involve the two different contrastive hierarchies in (5) and (6), does that mean that Heiltsuk has two different ways of ordering its person features?

More strikingly, the third-person pronouns make the same sevenfold deictic contrast as the demonstratives. Are the features that distinguish first and second persons from third person the same as the ones that make person-based locative contrasts within the third-person category? If so, do the person features appear in more than one position in the structure underlying Heiltsuk pronouns?

4. Our Analysis

In this section, we provide an account of person features in Heiltsuk that answers the two questions just posed.

4.1 Tripartition within quadripartition

Turning first to the question raised by the different numbers of person contrasts in (12) and (14), do we need to say that Heiltsuk organizes person features into two different contrastive hierarchies, to derive the inclusive–exclusive distinction (i.e., quadripartition) in the pronouns, but only tripartition among the third-person and demonstrative forms?

Given a realizational theory of morphology (Halle and Marantz 1993, 1994; Harley and Noyer 1999; Embick and Noyer 2007), the answer to this question is no.[12] We can treat Heiltsuk as a quadripartition language, using only the hierarchy in (6), and derive the tripartition by underspecifying the relevant vocabulary items. The three-way contrast manifest in the demonstrative system can effectively be

[12]We are not claiming that no language organizes person features into two different contrastive hierarchies, rather only that this is not required in Heiltsuk. The pronoun/agreement system of Kunwinjku (Harbour 2016: 211, Evans 2003: ch. 7) exhibits both tripartition and quadripartition, the distribution depending on number, pronoun type, and grammatical role. It is not at all obvious that an account of this language with a single hierarchy is possible.

treated as a syncretism within a quadripartite person system.[13] Schematically, the relevant vocabulary items would be specified as in (16), along with features for case and (in)visibility:[14]

(16) I/II ⇔ [χ, +author]
III/IV ⇔ [χ, −author, +participant]
V/VI/(VII) ⇔ [χ, −author, −participant]

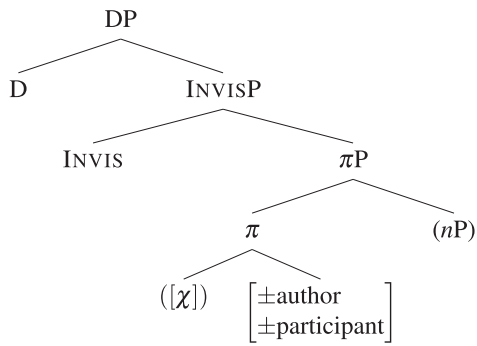
Given these specifications on the vocabulary items, first-person-oriented demonstratives will be spelled out by the underspecified I/II vocabulary item regardless of their specification for [±participant], thus neutralizing the clusivity contrast that appears in the pronouns.

4.2 Person in two places?

The pronoun paradigm in (14) includes not only first and second-person forms but also third-person forms identifiable as 'near speaker' (I/II) and 'near hearer' (III/IV). Does this mean that person features occur in two or more places in the formal representations of Heiltsuk pronouns? Again, we propose that the answer is no. In the analysis outlined below, person occupies a single position in the structure of pronominals, and this contributes to an account of why the Heiltsuk pronoun paradigm exhibits all and only the contrasts that it does.

Modifying Harbour's proposal for a locative head χ, we suggest that in Heiltsuk, and thus potentially in other languages with person-based demonstrative systems, [χ] is a feature of the person head π.[15] Our (maximal) structure for Heiltsuk nominals is shown in (17).

(17)



[13] As pointed out by an anonymous reviewer, this type of account predicts that one might find other languages with a quadripartite pronoun system but an even less articulated person-based demonstrative system, or with a fully articulated, person-based, quadripartite demonstrative system. We know of no such language, but see no compelling reason to rule it out at this point.

[14] The paradigms in (12) and (14) suggest that invisibility is separately spelled out as *ts*, while third-person objects appear to be distinguished from subjects by the addition of *q*.

[15] We do not claim here that χ is universally a dependent of π; we assume, with Cowper and Hall (2014b), that languages differ as to which features they make use of and in how those features map to syntactic projections.

Person features and the optional locative feature [χ] occur on the π head. A demonstrative π takes a (possibly null) complement *n*P; a pronominal π does not. Above π there is potentially another head encoding invisibility, which is present in Rath's (1981) categories II, IV, and VI. Dominating InvisP, or immediately dominating π if Invis is absent, is DP, which is present when its head, D, is required to turn the structure into an argument of type e.

In order to explain the Heiltsuk system of pronouns and demonstratives, we need to account for the range of elements that can and cannot co-occur in the structure in (17). The locative feature [χ] must be able to occur not only on pronouns, but also on demonstratives, which can take *n*P complements. The visibility distinction encoded by the Invis head must apply to third-person pronouns and to demonstratives, but not to first- and second-person pronouns: there is, for example, no contrast between 'you (visible)' and 'you (invisible),' even though such a contrast would be conceptually coherent.

We propose that the attested pattern follows from the semantic types of the person features, [χ], and Invis. Recall that in Harbour's (2016) ontology of persons, the author (*i*) and the addressee (*u*) are each unique, but there are arbitrarily many third persons (*o*, *o*′, *o*″, …). Accordingly, we posit that any combination of the two person features that includes at least one positive value denotes a unique individual: [+author, −participant] denotes *i*, [−author, +participant] denotes *u*, and [+author, +participant] denotes the plural individual *iu*. If both values are negative, on the other hand, no one individual is picked out; we thus take [−author, −participant] to denote the property of not being a discourse participant. In other words, first- and second-person feature combinations are of type e, but third person is ⟨e,t⟩.[16]

Locative [χ] is an ⟨e,⟨e,t⟩⟩ function representing proximity. It takes as an argument an individual *x*, and returns the property of being near *x*. Because [−author, −participant] does not denote an individual, it cannot combine with [χ], but any combination of person features with at least one positive value can. This accounts for the fact that the Heiltsuk system includes forms for 'near me' and 'near you' but not 'near them'.[17] There are thus two ways for a πP to be of type ⟨e,t⟩: either it bears only negatively specified person features, or it bears a [χ] feature that converts positively specified person features into the property of being near a local person.

The invisibility head Invis selects a property of type ⟨e,t⟩. It can therefore combine with any πP that either (a) contains only the features [−author, −participant], and thus denotes the property of being a third person, or (b) contains the [χ] function

[16]We set number aside here. As reflected in (14), Heiltsuk pronouns mark number only in the first person exclusive. The first person exclusive plural is presumably distinguished by some additional feature that indicates the presence of multiple individuals, though crucially not a multiplicity of authors *i*.

[17]Marshallese is described by Bender et al. (2016) as having a demonstrative meaning 'near someone else / a third party', but the examples given in the text would be equally consistent with a meaning 'proximate, though near neither me nor you'. Further investigation would be needed to confirm whether this demonstrative indeed specifically expresses proximity to a third person; if it does, this might reflect a different semantics for third persons in Marshallese.

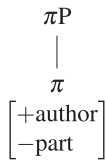
taking some other combination of person features as its argument, and thus denotes the property of being near the speaker or the addressee. It modifies its argument intersectively, adding the property of invisibility and returning another ⟨e,t⟩ predicate. It cannot combine with participant-denoting πPs.

At the top of the structure in (17), D selects a property and returns an individual (which may be a plural individual). This turns an ⟨e,t⟩ predicate into an argument, and is needed if πP either contains [χ] or has negative values for both person features.

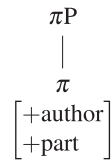
Combined with these assumptions about semantic types and composition, the structure in (17) yields the following representations for Heiltsuk pronouns and demonstratives.[18] First- and second-person pronouns are πPs with at least one positive feature value and no [χ]; they denote individuals and do not have an InvisP or DP layer:

(18) Structures for first- and second-person pronouns

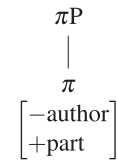
a. 1st exclusive



b. 1st inclusive



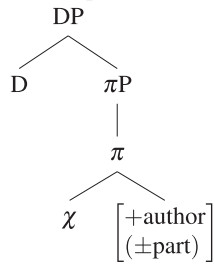
c. Second



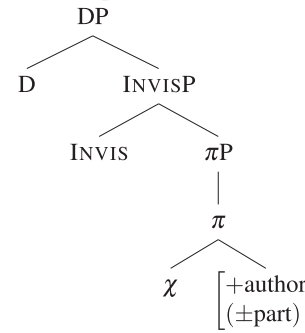
Third-person forms are DPs. The structures shown below correspond to third-person pronouns; the same combinations of features and heads will be spelled out as the demonstratives if π has a complement *n*P.

The third-person forms that mark proximity to the speaker or hearer, namely those labelled I–IV by Rath, have π heads that include [χ]. The structures for first-person-oriented forms are shown in (19):[19]

(19) a. I: Near speaker, visible



b. II: Near speaker, invisible

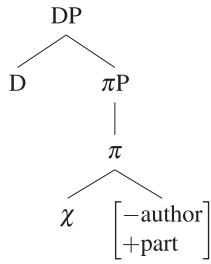


[18]Our proposal here is similar in spirit to Déchaine and Wiltschko's (2002) proposal that different pronouns can realize different syntactic categories, though we do not assume the same semantics for the various projections as they do. See also van Gelderen (2013) for arguments that participant pronouns are *ϕ*Ps while third-person pronouns are DPs dominating *ϕ*Ps.

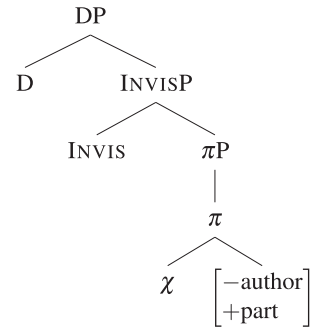
[19]Because the I/II vocabulary items in (16) are not specified for [±participant], it does not matter whether this feature is present in the structures in (19), or, if so, which value it has.

Second-person-oriented forms have the structures shown in (20):

(20) a. III: Near hearer, visible

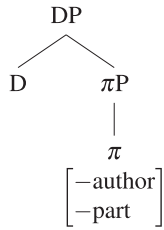


b. IV: Near hearer, invisible

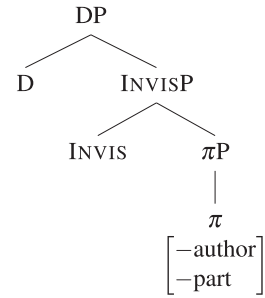


Rath's V and VI have negative values for both person features, and no [χ]:

(21) a. V: Unmarked third person



b. VI: Third person invisible



The structures in (18)–(21) exhaustively account for the person/deixis contrasts attested in Heiltsuk (with the exception of the 'that (absent/gone)' forms, Rath's VII, which we excluded in section 3 as likely belonging to a syntactically distinct category). All pronouns ultimately refer to individuals, but this is accomplished via different amounts of structure. Local pronouns (first and second person) consist of a πP, which itself is of type e due to the presence of at least one positively specified person feature. Third person pronouns, by contrast, involve a more complex DP structure: a πP of type ⟨e,t⟩, converted to type e by a higher D head.

5. CONCLUSIONS

We have argued for an account of Heiltsuk personal pronouns and demonstratives that captures both the presence of a clusivity distinction in the participant pronouns, and the person-based distinctions in the non-participant pronouns and demonstratives. The crucial ingredient in the analysis is that we take the feature [χ] to be an optional feature of the person head π. [χ] selects an individual and returns the property of being near that individual. The account is economical, using a single set of person features in a consistent position in the structure, and it predicts exactly the cross-classification that occurs.

The fact that only third-person pronouns are person-oriented follows from the fact that [χ] changes the way the marked person specifications are interpreted. Without [χ], these features denote individuals; with [χ], the denotation is not an individual but an orientation. In order to have pronouns meaning 'you near me', etc., the system would require person features to function in both ways simultaneously; an impossibility if there is only one position for person features in the structure.

We derive the fact that only first and second persons are targets of orientation from the selectional properties of [χ]. Since [χ] selects an individual, it can only cooccur with π specifications that denote an individual; that is to say, those specified as either [+author] or [+participant]. The fact that only third-person pronouns exhibit the (in)visibility distinction also follows from the semantic types of the various pronouns. INVIS selects a predicate, and only third-person π denotes a predicate. Finally, we account for the often-mentioned cross-linguistic fact that third-person pronouns, unlike participant pronouns, seem to have D-like properties (e.g., van Gelderen 2013) by analysing third-person pronouns as DPs and participant pronouns as πPs.

A property of the Heiltsuk system that does not follow automatically from our account is the fact that while the pronoun system as a whole exhibits the quadripartition pattern, distinguishing inclusive from exclusive first persons, the orientation of the third-person pronouns and demonstratives lacks the clusivity distinction. We have proposed to account for this by underspecifying the relevant Vocabulary Items. However, this approach suggests that we might expect to find a language with the opposite pattern of underspecification, with a quadripartite orientation pattern among demonstratives, but only a tripartite pattern among the pronouns.

Another question that arises from our analysis is why person-based demonstrative systems are as rare as they seem to be, given the numbers obtained from the WALS database, and why participant-oriented third-person pronouns have not been more robustly attested. An obvious possibility is that the position of [χ] in the structure of Heiltsuk pronouns and demonstratives, which allowed the person features to function in two different ways while occupying the same position in the structure, is not universal. It could be that χ behaves like a syntactic head in some languages, while in others, specifically in Heiltsuk, [χ] is a feature attached to another head. Ultimately, it should be possible not only to account for the observed range of attested person/deictic systems and to explain systematic gaps among the logical possibilities, but also to explain why some systems are so much more common than others.

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