STUDIA LINGUISTICA
A JOURNAL OF GENERAL LINGUISTICS

THE NANOSYNTAX OF SPATIAL DEIXIS*

Eric Lander & Liliane Haegeman

Abstract. This paper provides a fine-grained morphosyntactic analysis of spatial deixis. We propose that the universal core of spatial deixis is a three-way contrast: Proximal 'close to speaker', Medial 'close to hearer', and Distal 'far from speaker and hearer'. This system arises from three features merged as heads in a single universal functional sequence: $Dx_3 > Dx_2 > Dx_1$. The hierarchy is understood in terms of superset-subset relations, such that Proximal [Dx_1] is a subset of Medial [Dx_2 [Dx_1]], which in turn is a subset of Distal [Dx_3 [Dx_2 [Dx_1]]]. Evidence comes from patterns of syncretism and morphological containment in the demonstrative systems of a number of genetically diverse languages. Regarding syncretisms, languages can show a transparent three-way morphological contrast, or some sort of syncretism: Medial/Proximal vs. Distal, Distal/Medial vs. Proximal, or a totally syncretic Distal/Medial/Proximal (i.e. a neutral demonstrative). These syncretisms entail that the features responsible for the Proximal and Medial readings be adjacent and that the features responsible for the Distal and Medial readings be adjacent in the fseq. Regarding containment, we show that Proximal can be structurally contained within Medial and that Medial can be structurally contained within Distal, meaning that Medial structures are larger than Proximal structures, and that Distal structures are larger than Medial structures, confirming our hierarchy. We show that these facts are naturally accounted for by nanosyntactic principles of spellout. We end the paper by accounting for potential counterexamples and other issues.

1. Introduction

The focus of this paper is the internal syntax of demonstratives encoding spatial-deictic readings such as 'close to speaker', 'close to hearer', or 'far from speaker and hearer'. Based on morphological evidence from a sample of different languages discussed in the literature, we will argue that such demonstratives have a complex inner structure. To be more precise, we will identify three distinct features encoding spatial deixis, and we will provide evidence that these features are not independent but rather are

*This work has its roots in a nanosyntax weblab held in November and December of 2012. Special thanks to Michal Starke, Sebastian Bican-Miclescu, and Bartosz Wiland for discussion of the data. We are grateful to the members of GIST for comments on a previous version of this talk (May 7, 2014). Thanks to Lena Baunaz and Frédérique Berthelot for help with French. We are also grateful to the audience of IGG 41 in Perugia for questions and comments. Special thanks to our anonymous reviewers for their helpful comments and suggestions, which helped to improve this paper in various ways. Abbreviations include: DEM.PRO = pronominal demonstrative, DEM.ADN = adnominal demonstrative, N(EUT) = neuter, F(EM) = feminine, M(ASC) = masculine, CM = common gender, ABS = absolutive, SG = singular, PL = plural, DU = dual, AN = animate, INAN = inanimate, IE = Indo-European, *coll.* = colloquial. For the languages discussed we provide the family in brackets, e.g. Ewe [Niger-Congo]. This work is funded by BOF grant 01D30311 awarded by Ghent University (Eric Lander) and FWO project 2009-Odysseus-Haegeman-G091409 (Liliane Haegeman and Eric Lander).

Studia Linguistica ••(•) 2016, pp. 1–66.
Published by John Wiley & Sons Ltd, 9600 Garsington Road, Oxford OX4 2DQ, UK, and 350 Main Street, Malden, MA 02148, USA

articulated as heads in a hierarchical system. The evidence we use will be drawn from syncretisms and from morphological containment relations.

The empirical generalizations we bring together in this paper will be used to support an analysis of spatial deixis couched in the theoretical framework known as nanosyntax (Starke 2009, 2011ab, 2013, Caha 2009, Ramchand 2008, Taraldsen 2009, Fábregas 2009, Pantcheva 2011, and Vangsnes 2013). Though we commit ourselves to a nanosyntactic analysis, we stress that the empirical patterns and generalizations presented below are interesting for nanosyntacticians and non-nanosyntacticians alike.

1.1. *Background*

Demonstratives have at least four main uses, as illustrated in the diagram in (1) (from Diessel 1999:6). For discussion, see also, among others, Fillmore (1971, 1982, 1997), Lyons (1977), Levinson (1983), Himmelmann (1997, 2001), and Diessel (1999).

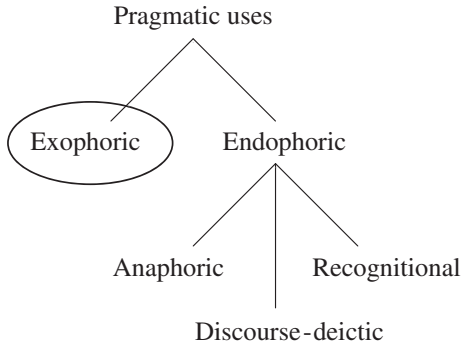


Figure 1. Demonstrative uses

(1) a. **That** book in the window over there is wonderfully illustrated. (*exophoric*)
b. My friend's dog is so friendly. I'll dogsit **that** little guy any time. (*anaphoric*)
c. . . .and they lived happily ever after. **That** was the end of our fairy tale. (*discourse-deictic*)
d. Have you heard about **that** terrible measles epidemic? (*recognitional*)

This paper addresses only the (gestural) exophoric use of demonstratives (Diessel 1999:94), which we will here refer to as *spatial deixis*. That is, we focus on the use of demonstratives for pointing at objects in the physical environment of the speech participants, with possible indication of their relative distance from speaker and/or hearer. As such, the

exophoric use is traditionally taken to be the most basic of the demonstrative functions in Figure 1. The exophoric use can also be considered the most 'concrete' use in Figure 1, since endophoric uses are more anchored in the discourse itself, rather than in the physical speech situation.[1]

1.2. *Main claims*

We make three main claims in this paper. The first claim is that spatial deixis is semantically encoded in Universal Grammar as a three-way contrast.

(2) Universal three-way contrast

Proximal	'close to speaker'
Medial	'close to hearer'
Distal	'far from speaker and hearer'

The system in (2) is in line with traditional views (e.g. Fillmore 1982) on this topic.

Our second claim is more theoretically oriented. Adopting a cartographic approach according to which the syntactic structure is built up around syntactico-semantic features constrained by the 'one feature/one head' principle (Cinque & Rizzi 2008:50), we assume that features are associated with specialized functional heads which head functional projections in the syntax. We posit that the three readings in (2) arise from three functional features (labeled Dx_1, Dx_2, and Dx_3) which are always merged in a single order, as seen in Figure 2.

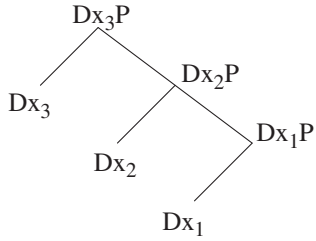


Figure 2. Functional sequence of spatial deixis

The functional features/heads Dx_1, Dx_2, and Dx_3 – and hence also their projections Dx_1P, Dx_2P, and Dx_3P – are structurally organized into a functional sequence (abbreviated as fseq) which we take to be universal. The feature Dx_1 is the head of the projection Dx_1P, which is the

[1] For the exophoric/endophoric distinction, Meeuwis & Stroken (2012) prefer the terms 'situational' and 'non-situational', respectively. See also Rauh (1983).

complement of the head Dx_2. Dx_2 projects Dx_2P, which is the complement of Dx_3, which projects Dx_3P.

In other words, we will show that these features are not just associated with individual lexical items that constitute demonstratives but rather that they constitute a single morphosyntactic system and a single functional domain. The claim in Figure 2 can be contrasted with the idea that there is a single functional head, say Deix (as in Svenonius 2010) or $Dx^{[PLACE]}$ (as in Den Dikken 2010), whose value is determined by the presence of one specific feature. According to Figure 3, if the head Deix is projected, then one of the values Prox/Med/Dist is chosen to the exclusion of the other two. That is, the three features in Figure 3 are in complementary distribution.

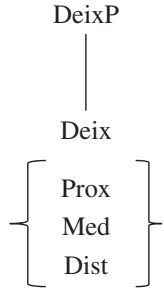


Figure 3. A single head for deixis

In other words, our functional sequence in Figure 2 amounts to a decomposition of Deix(P) in Figure 3.

Our third claim has to do with the way the features in the fseq in Figure 2 are to be understood in relation to one another. According to our proposal, the three features Dx_1, Dx_2, and Dx_3 are understood to be unary and additive, such that the structure underlying the Proximal reading corresponds to $[Dx_1]$, the Medial reading corresponds to $[Dx_2\ [Dx_1]]$, and the Distal reading corresponds to $[Dx_3\ [Dx_2\ [Dx_1]]]$. This is shown in Figure 4.

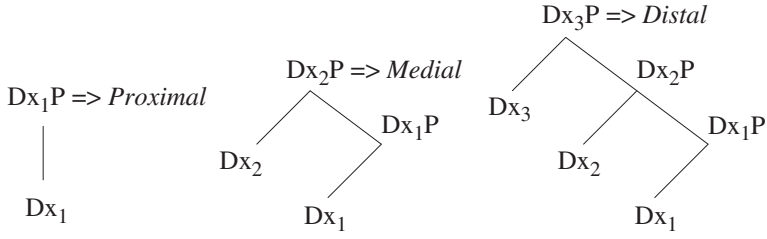


Figure 4. Additive features

Put differently, the Proximal is a subset of the Medial, and the Medial is, in turn, a subset of the Distal. Informally, Medial is larger than Proximal, and Distal is larger than Medial.

As mentioned already, our evidence for the hierarchy in Figure 2 will be drawn from two types of morphological evidence: syncretisms and morphological containment relations. For the empirical basis of our paper we have based our discussion on a variety of typologically and genetically diverse languages, the choice being determined to a large extent by the quality of the available descriptive literature, namely those works that offer a sufficiently detailed description of the relevant demonstratives. These data are supplemented with some additional information from informants. A list of languages that have been used and the secondary source material on which our discussion is based are provided in the appendix.

1.3. *Organization of the paper*

The paper is organized as follows. Section 2 discusses how the data have been idealized and gives some further background. Section 3 discusses the syncretism facts that support the hierarchy proposed here. It will be seen that languages can show a Med/Prox syncretism, a Dist/Med syncretism, or a syncretism of all three. These syncretisms are evidence for the relative ordering of our Dx features in Figure 2. Section 4 discusses the evidence from morphological containment. Here it will be shown that Med and Dist can morphologically contain Prox in a number of languages; also attested is the containment of Med within Dist. These containment data are evidence for the hierarchy in Figure 2 and the structures in Figure 4: Med is structurally larger/higher than Prox and Dist, in turn, is structurally larger/higher than Med. In section 5 we provide a nanosyntactic account of the facts. Section 6 is more speculative: it is devoted to the discussion of a number of potential empirical problems for the analysis and shows specifically how our approach could account for cases that seem, at first sight, not to fit into the system developed here. Section 7 concludes the paper.

2. Cleaning up the data

In order to determine what the core of spatial deixis (or any functional domain) is, it is necessary to engage in data idealization. By this we mean that the raw data need to be arranged to show clear and consistent patterns, with potential counterexamples abstracted away from. The set of data thus obtained can then serve as input to a formal analysis. Here we carry out this crucial first step by starting out with a set of twelve logically plausible deictic readings and narrowing this down to a much smaller set of three, by applying various empirical and

methodological criteria. We note here that authors of descriptive grammars often differ in their terminology, and even the admirable collection of data in the World Atlas of Language Structures (WALS; Dryer & Haspelmath 2013) nevertheless suffers from various inconsistencies that require more careful work to be done in order to extract meaningful generalizations. However, they are certainly useful starting points for work like ours.

2.1. *Computing the possibilities*

In the literature there seems to be a consensus that the encoding of spatial deixis in natural language involves relative distance ('close to', 'far from') of a referent and that the distance of the relevant referent is evaluated from a deictic center (or anchor or *origo*).

With respect to the nature of the deictic center, Fillmore (1982) and Anderson & Keenan (1985) distinguish 'distance-oriented' and 'person-oriented' systems of spatial deixis. In distance-oriented systems, only the speaker serves as the deictic center. In person-oriented systems, in addition to the speaker, non-speakers such as the hearer can also serve as the deictic center. According to Diessel (1999:50) the two systems differ in terms of the encoding of distance: distance-oriented systems have at most a three-way system of distance contrasts, while person-oriented systems may have four (or more) contrasts. As we shall see, there are in fact reasons to be skeptical about systems with more than three contrasts. More generally, we believe that the 'distance-oriented' vs. 'person-oriented' distinction is a false dichotomy.

Sticking to the traditional classification for now, a natural way to account for person-oriented systems might be to bundle person features with distance features. Fortis & Fagard (2010:10–11), for instance, identify the Speaker (S), Hearer (H), Third Person (Th), and S and H together as crosslinguistically possible anchors.[2] On the basis of the combinations of distance oppositions with person features, there are at least twelve different possible combinations (and hence readings) available, as indicated in Table 1 and Table 2. Table 1 lists the relevant feature systems; Table 2 shows the possible feature combinations.

[2] Imai (2003: §2.3) lists three additional anchors: Participant, Non-participant, and Object. While we are not in principle denying the possibility of the existence of such anchors, it remains true that they are very rare in his sample and marked by idiosyncratic properties. For instance, the Huallaga Quechua morpheme *qa* indicating an Object anchor is optional and "should be excluded from a paradigm of deictics" (Imai 2003: 70, n.5). Indeed, similar issues will arise below for the Third Person anchor, casting doubt on the validity of that particular anchor as well.

Table 1. Hypothesis using two kinds of features

Distance features	Person features
distal 'far'	[1] = S
medial 'medium distance'	[2] = H
proximal 'close'	[3] = Th
	[1] + [2] = S + H

Table 2. Readings resulting from the feature combinations in Table 1

	Feature bundles	Interpretation	Label
(a)	? Dist + S	'far from S'	S-based distal
(b)	? Med + S	'medium distance from S'	S-based medial
(c)	**Prox + S**	**'close to S'**	**S-based proximal (= *Proximal*)**
(d)	*Dist + H	'far from H'	H-based distal
(e)	*Med + H	'medium distance from H'	H-based medial
(f)	**Prox + H**	**'close to H'**	**H-based proximal (= *Medial*)**
(g)	*Dist + Th	'far from Th'	Th-based distal
(h)	*Med + Th	'medium distance from Th'	Th-based medial
(i)	??Prox + Th	'close to Th'	Th-based proximal
(j)	**Dist + Inclusive**	**'far from S and H'**	**Incl-based distal (= *Distal*)**
(k)	*Med + Inclusive	'medium distance from S and H'	Incl-based medial
(l)	? Prox + Inclusive	'close to S and H'	Incl-based proximal

Based on the empirical descriptions available in the literature, it is clear that this system overgenerates. So far none of the readings marked with an asterisk in Table 2 have been found in the descriptions of spatial deixis we have examined. The readings with question marks are reported in the literature but their status is dubious for reasons to be discussed in section 2.2. Out of the twelve possible readings generated by the combination of person features with distance contrasts, only three are undoubtedly attested as described in the literature. These three core readings are given in Table 3.

Table 3. Spatial deixis: The core readings

	Interpretation	Label
(c)	'close to S'	S-based proximal (= *Proximal*)
(f)	'close to H'	H-based proximal (= *Medial*)
(j)	'far from S and H'	Incl-based distal (= *Distal*)

From this discrepancy we conclude that it is unlikely that the encoding of spatial deixis results from the combination of person features and distance features, and we will not pursue an approach in which person features are involved in the expression of spatial deixis. In other words, person and deixis features will be kept distinct. See section 2.4 for more discussion.

For the sake of organizing the discussion in the rest of this section we will be referring to Table 2 with the twelve possible readings (reading (a), reading (b), etc.).

2.2. *The anchor*

In natural language, spatial deixis anchors an entity in the environment to a speech participant, typically the speaker (S) or the hearer (H). With regard to this anchoring role of S and H, the literature is not always exhaustive and fully explicit and we discuss the main issues here in the light of our own analysis. Our discussion is heavily indebted to Imai (2003), to whose work we refer for additional discussion.

It is widely assumed that S is the universal primary anchor of spatial deixis (Imai 2003), and the spatial deixis systems of many languages are indeed described as being purely S-based, with proximal, medial, and distal readings with respect to S. There is some reason to doubt the empirical validity of these descriptions, however. We illustrate this with two examples from Imai's work. First, consider the case of Venda [Niger-Congo], which has been claimed to have a four-way distance-oriented system: 'immediately next to speaker', 'relatively close to the speaker', 'further away from the speaker', and 'relatively remote from both the speaker and the person addressed' (Poulos 1990:107, cited in Imai 2003:97). However, on the basis of native speaker elicitation, Imai (2003: §4.3.3) concludes that Venda in fact shows only a three-way system and that H is the anchor in the medial form; the fourth item 'immediately next to speaker' is more accurately an item for emphasis or givenness (Imai 2003:99). Similarly, Malagasy [Austronesian] has been claimed to have as many as seven S-based distance contrasts (Anderson & Keenan 1985). Again on the basis of experiments, Imai (2003: §4.3.2) demonstrates that Malagasy actually has a three-way system, which also involves the H anchor in parts of the system. The impression of a very rich distance-oriented system can be attributed to additional parameters outside of distance (i.e. boundedness and visibility, as well as the existence of a neutral demonstrative; Imai 2003:96, §4.7). Regarding the state of our understanding with regard to spatial deixis, Imai points out the following:

> Popular languages that are studied in the literature in more detail than less popular languages tend to be analyzed as being addressee-anchored: for example, Basque, Finnish, Hawaiian, Japanese, Korean, and Maori. Less popular languages tend to be described as a speaker-anchored three-degree distance contrast. It is, however, possible that some researchers failed to

> correctly detect the addressee anchor in these less-studied languages. (Imai 2003:21)

We will assume a strong version of Imai's intuition that the H anchor is underreported, and we formulate the hypothesis that all languages should be described not only in terms of a S anchor but also in terms of a H anchor. In specific cases, syncretisms may obscure the H anchor, of course, a point to which we return, but nonetheless readings anchored by the H should exist in every language. We are confident that our hypothesis will be further confirmed as the descriptive adequacy of the typological literature improves.

As indicated in (a–c) in Table 2, the encoding of S-based proximal 'close to S' (reading (c)) is safely reported in the literature, but for now, given the lack of clarity for languages like Venda and Malagasy, we question the existence of purely S-based medials 'medium distance from S' (reading (b)) and distals 'far from S' (reading (a)) (though see section 6). This is signaled by superscripted question marks in Table 2. We will call the S-based proximal (reading (c)) the *Proximal*.

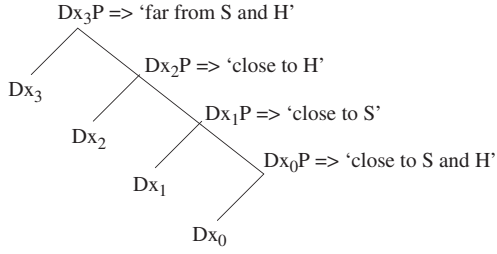
With respect to the hearer (H) anchoring of spatial deixis, H-based proximals 'close to H' (reading (f)) have been identified, as will be more fully demonstrated below. We refer to the H-based proximal as the *Medial*. H-based medials 'medium distance from H' (reading (e)) and distals 'far from H' (reading (d)) are, as far as we can tell, unattested, as indicated in Table 2 by asterisks.

With regard to the Th(ird person) anchor, according to Imai (2003:171) no language expresses more than a single degree of distance from a Th anchor, namely 'close to Th' (reading (i)). Thus, the Th-based medial 'medium distance from Th' (reading (h)) and distal 'far from Th' (reading (g)) have been marked by an asterisk in Table 2. However, even the Th-based proximal (reading (i)) has rarely been identified and there are a number of reasons to doubt that the Th anchor is actually a valid category. First, though Imai (2003:25–26) claims that languages like Kikuyu [Niger-Congo] and Inuktitut [Eskimo-Aleut] have morphologically encoded Th anchors, he himself points out that such readings resemble "pragmatically conditioned perspective shifts" whereby "the deictic center has been transferred from the speaker to another person." Thus the 'close to Th' reading seems to have more to do with logophoricity than with spatial deixis. Moreover, the prefix that Inuktitut uses as its 'field shifter', *-ta*, is *optional* and therefore "should be excluded from a paradigm of deictics" (Imai 2003:70, n.5). This casts doubt on the status of Th as an anchor. Furthermore, Imai (2003:25–26) observes that, apart from Kikuyu and Inuktitut, no other language seems to mark such shifts in their morphology. On the basis of these considerations we tentatively conclude that further research on Kikuyu and Inuktitut would be needed to confirm Th as a deictic anchor.

Let us finally turn to the Incl(usive) readings: 'far from S and H', 'medium distance from S and H', and 'close to S and H'. From the literature it is clear that the distal reading 'far from S and H' (reading (j)) is attested. This is the reading we have labeled the *Distal*. As far as we can tell the Incl-based medial 'medium distance from S and H' (reading (k)) has not been reported and we assume it is unattested. For the Incl-based proximal 'close to S and H' (reading (l)), Imai (2003:22–23) mentions that, though quite rare, it is attested in languages such as Paamese [Austronesian], Quileute [Chimakuan], Bemba [Niger-Congo], and various languages of the Philippines [Austronesian]. However, it is unclear how, in fact, the Incl-based proximal reading 'close to S and H' differs from the more clearly attested S-based proximal with the meaning 'close to S' (namely reading (c)). Moreover, Imai (2003:22–23) points out that the relative proximity denoted by 'close to S' as compared to 'close to S and H' is not crosslinguistically consistent. In Binukid [Austronesian], for instance, the form *ʔi* 'close to S and H' seems to denote an object closer than the form *ʔini* 'close to S', but in languages like Waray-Waray [Austronesian] and Quileute [Chimakuan] the 'close to S' form seems to indicate closer proximity than the 'close to S and H' form (Imai 2003:23). Furthermore, in most languages there is no morphological distinction between the two readings (cf. Janssen 2004:989–990 on English *this*, Tahitian *teie*, and Japanese *ko-*). Due to the somewhat peripheral status of the Incl-based proximal reading and the semantic fuzziness associated with it, we abstract away from it in this paper until further research can be conducted.[3]

[3] There are a few possible ways of deriving this reading. The most dramatic possibility is that another feature is required, turning our three-way system into a four-way system, where the lowest feature, Dx_0 in (i), has semantics along the lines of 'in the space of the discourse participants'.

(i) Four-way system



This might potentially make sense of the Binukid data, where we see that the 'close to S and H' form *ʔi* is contained within the 'close to S' form *ʔini* (i.e. [*ʔi* [-*ni*]]). While we are not in principle opposed to the addition of another layer to our fseq, more research on the Incl-based proximal is clearly needed. Indeed, the fact that languages seem to differ as to which of the proximals ('close to S and H' or 'close to S') indicates a shorter distance than the other (Imai 2003: 23) is a hint that something more complicated than (i) is happening under the surface. It may be that modifiers are involved in deriving one of the readings in at least some languages (cf. our section 6), which would make the Incl-based reading a more superficial variation on our underlying three-way system.

To sum up, though the typological literature may appear to demand a complex inventory of deictic centers and hence an array of spatial contrasts, we have found that the crosslinguistic variation is, on the whole, actually quite modest. Indeed, in their extensive studies both Diessel (1999:36, 40) and Imai (2003:171–173) conclude that all languages have at least two distance contrasts[4] and that three contrasts is the upper limit for the vast majority of languages (see also Fillmore 1982:48–51).[5] For discussion of additional contrasts see section 6.

2.3. *Cumulative sub-classification*

The three-way system of spatial deixis that we are developing here should be thought of in terms of a *cumulative sub-classification* of privative features (see Caha 2009:19–22), as seen in Figure 5.

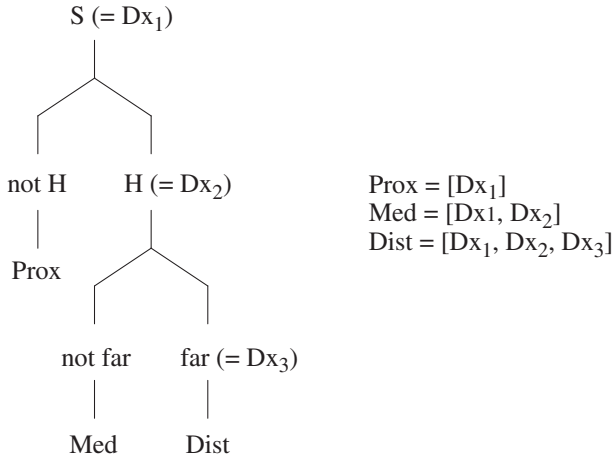


Figure 5. Cumulative sub-classification of spatial deixis

[4] Though some languages have a neutral demonstrative, as we shall see in section 3.4, with no distance contrasts displayed, these languages will often have locative adverbs available which make at least a two-way contrast.

[5] More 'exotic' languages like Dyribal, Inuktitut, or West Greenlandic are said to display dozens of contrasts involving parameters like 'visible/invisible', 'movement toward/away/across', 'up/down', 'downhill/uphill', 'upriver/downriver', 'north/south coastline', 'in/out', etc. (Diessel 1999: 42-47 and sources cited there; see also Imai 2003: 176 for an exhaustive list). Following Fillmore (1982: 48-51) we assume that these are not part of the core of spatial deixis. First, it is reasonable to think that (in)visibility should be considered an evidentiality feature of some kind. The parameter of directionality/movement, moreover, is clearly part of the Path system carefully studied by Pantcheva (2011), i.e. 'movement toward' corresponds to her Goal, 'movement away' to her Source, and 'movement across' perhaps to her 'Route'. Second, it would appear that many of the remaining parameters embody extralinguistic/conceptual properties. If so, these do not even belong to UG proper, much less the core spatial deixis system.

If we assume that Dx features are built on top of something like PlaceP or SpaceP, then the schema in Figure 5 can be said to derive the readings in (3).

(3) Prox = in the space of the S = 'close to S'
Med = in the space of the H = 'close to H'
Dist = far from the space of the H and the S = 'far from S and H'

That is, Prox is composed of the single feature Dx_1, which corresponds to 'speaker'. Med is composed of Dx_1 plus Dx_2, with Dx_2 corresponding to 'hearer'. Dist, finally, is composed of Dx_1 plus Dx_2 plus Dx_3, with Dx_3 corresponding to 'far from'. Note that according to this proposal, S is a subcomponent of H, compositionally speaking. We take this to reflect the fact that the existence of H necessarily entails the existence of S (i.e. there must be something spoken by S for it to be heard by H).

The cumulative sub-classification schema presented above captures both the ordering of the fseq $Dx_3 > Dx_2 > Dx_1$ as well as the privative or additive nature of these features. The system can also be visualized, perhaps more intuitively, as in Figure 6.

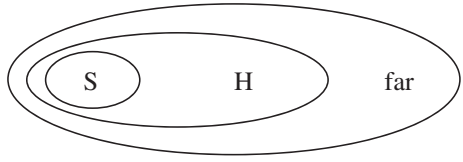


Figure 6. Nesting

Crucially, the nesting in Figure 6 will be seen in the patterns of morphological containment presented in section 4 below.

2.4. *Addressing an alternative*

Before moving on we feel it is necessary to address suggestions made by our anonymous reviewers that spatial deixis be treated as an extension of person, a view which is also advanced by Harbour (forthcoming) (see also Leu 2015: §2.7.2 on Turkish). Here we present reasons not to adopt such a view.

According to the alternative hypothesis, person features can combine with a single feature such as [close] to yield readings like 'close to first person', 'close to second person', and 'close to third person'. One reviewer gives the concrete suggestion that person be thought of in terms of containment relations in the same way that we have thought of deixis (cf. Figure 4), such that all three persons share the feature [person], first and second person have the feature [participant], and only first person has the feature [speaker]. This is sketched in Figure 7.

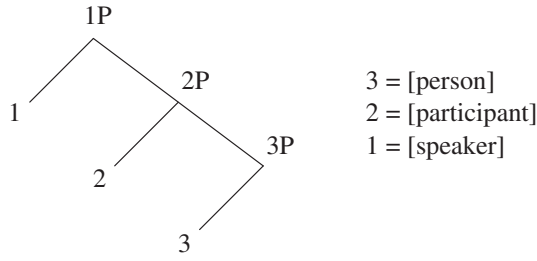


Figure 7. Person fseq

Indeed, this is exactly what Starke (2013) and Vanden Wyngaerd (2014), who follows work by Cysouw (2003), have proposed is the nanosyntactic structure of person. The structure in Figure 7, with third person at the bottom, reflects the well known fact that third person is morphologically unmarked (i.e. the default or 'non-person' in some sense) (see Harley & Ritter 2002). In Turkish, for instance, the third person singular pronoun *o* is unmarked compared to the rest of the forms in the paradigm, as seen in Table 4.

Table 4. Turkish personal pronouns (Vanden Wyngaerd 2014:17)

	SG	PL
1	b-en	b-iz
2	s-en	s-iz
3	o	on-ler

We agree that the internal structure of person is [1 [2 [3]]], as sketched here. Crucially, though, the containment relation for person is the exact opposite containment relation we observe for spatial deixis. As we shall see in detail below, Dist (supposedly the 'third person' reading) contains Med (supposedly the 'second person' reading), and Med contains Prox (supposedly the 'first person' reading), giving us [Dist '3' [Med '2' [Prox '1']]]. Note that the addition of the feature [close], wherever we choose to insert it into the structure, will make no difference to the underlying containment relation between person features.[6]

[6] Nor will the introduction of an additional feature [far] or [distal], in addition to the [close]/[proximal] feature, help much, as suggested by one reviewer in connection with the Hausa data to come below. Again, this is moving in the direction of the 'bundling' approach which we have already rejected on the basis of the fact that such a system overgenerates.

A second reason we think it is unwise to conflate person and deixis is that certain predictions are made by such a hypothesis which are not confirmed. For instance, if person and deixis are the same, then we might expect there to be some kind of correlation such that languages with a rich set of pronouns will also have a rich set of deictic contrasts. By doing a rough search on WALS (Dryer & Haspelmath 2013), where it is possible to combine the value 'distance contrasts in demonstratives' with the value 'inclusive/exclusive distinction in independent pronouns', we find that this prediction is not borne out. For instance, Navajo [Na-Dene] and Koasati [Muskogean] have rich deictic systems but no inclusive/exclusive distinction in pronouns. On the other side of the coin, WALS gives a total of 21 languages which do have an inclusive/exclusive distinction in pronouns but display only a two-way deictic contrast. There is even a language, Kera [Afro-Asiatic], which shows an inclusive/exclusive pronoun system but apparently *no* distance contrasts in its demonstrative system. Virtually all combinations in between these extremes are found as well. Thus there does not appear to be any significant crosslinguistic correlation between person and deixis.

A third problem for the hypothesis that person and spatial deixis should be united is the fact that deictic systems, on the whole, make rougher distinctions than person systems. Person can be combined with number and gender features. Though it is certainly true that pronominal and adnominal demonstrative can display number and gender distinctions, this is not the point we are trying to make. The point is whether or not the *deictic contrasts* encoded in demonstratives can display number and/or gender distinctions, which we might expect on the view that deixis can be reduced to person. Deictic forms, however, do not, as far as we know, show readings such as 'close to you.SG' vs. 'close to you.PL' (singular vs. plural), or 'close to him' vs. 'close to her' (i.e. masculine vs. feminine).

Finally, a semantic problem for the person-based approach to spatial deixis is the characterization of Distal as 'close to third person'. While Proximal and Medial are accurately characterized as 'close to speaker' and 'close to hearer', Distal does not necessarily need to make reference to a third party. Therefore we find our characterization of Distal as 'far from speaker and hearer', where Distal is defined negatively, to be more accurate. Even if third person is defined as a 'non-person' in some sense, this brings us back to the containment issue: if third person corresponds to the absence of features, then we expect it to be the smallest structure, yet below we show that Distal is in fact the largest structure.

Since person displays precisely the opposite ordering of what the evidence for spatial deixis dictates and since it makes various predictions which are not supported by the facts, we conclude that person and spatial deixis should not be united but rather must be kept separate. Indeed, from the theoretical perspective of nanosyntax, according to which

linguistic structures are made up of many extremely fine-grained features, we would expect more functional domains rather than fewer.[7]

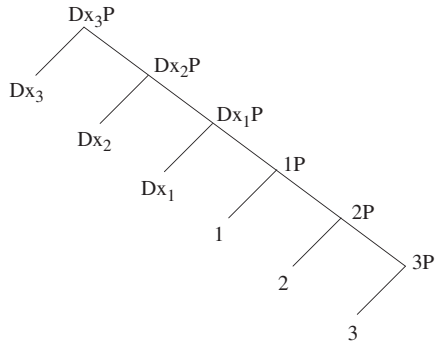
3. Syncretism

Informally put, a syncretism may be described as a kind of polysemy or a coalescence of two forms. Syncretism arises when a single linguistic form is ambiguous between two or more semantic readings. The concept is of course part of the traditional philological tradition, but it has received renewed attention in recent developments in formal syntax and in particular in a relatively recent formal approach to morphology and syntax referred to as nanosyntax (Starke 2009, 2011ab, 2013, Caha 2009, Ramchand 2008, Taraldsen 2009, Fábregas 2009, Pantcheva 2011, Vangsnes 2013). Here we approach the spatial deixis data from the perspective of syncretism, and we will give a nanosyntactic analysis of the syncretisms we find.

Let us first clarify in general terms how we will use data from syncretisms in our study of spatial deixis. We formulate the hypothesis that the three-way system we have set up is universal, i.e. that all

[7] One possibility we are willing to entertain, which may in some ways converge with the person-based deixis hypothesis, is that our Dx features are merged on top of the person domain, as in (ii).

(ii) Hypothesis about position of Dx features



What is potentially interesting about (ii) is the idea that Dx features are always merged on top of the full person fseq. Since the full structure [1P [2P [3P]]] corresponds to first person, this could very well account for why the speaker is the universal primary anchor of deixis. Indeed, languages like Turkish where person morphemes appear to be used for the deictic system (DEM.PRO ***b****-u(n)* 'close to the speaker and hearer' – ***ş****-u(n)* 'further away from speaker and hearer' – ***o****(-n)* 'far away from speaker and hearer'; Leu 2015: §2.7.2, citing Kornfilt 1997: 311) may require a more complex analysis of syncretic elements involving both the Dx and Person domains. However, it is unclear in Turkish if person morphemes are being used to build demonstratives (as Leu claims) or the other way around, namely that deictic roots are being used to build personal pronouns (see Bhat 2013 on demonstratives being used as pronouns, as well as some relevant discussion in Diessel 1999: 167, fn.50). The directionality of the relationship between personal pronouns and demonstratives (plausibly subject to variation from language to language as well) seems to us to be crucial.

languages encode the three meanings Proximal, Medial, and Distal. Some languages transparently show this underlying system. These languages have three morphologically distinct forms, one corresponding to each of the three readings. Other languages, though, may use one form to encode more than one meaning: for instance, a form may be used for both Proximal and Medial, or for both Medial and Distal. Indeed, some languages have only one form for the three readings. This, however, is not to say that in such languages the relevant semantic oppositions do not exist; rather, in these languages one lexical item is ambiguous between two or even three readings. In sum, there are four patterns of syncretism attested, as shown in Table 5.

Table 5. Four attested syncretisms

Distal	Medial	Proximal
Distal	Medial	Proximal
Distal	Medial	Proximal
Distal	Medial	Proximal

One logically possible syncretism is not attested, the so-called ABA pattern (cf. Bobaljik 2007, 2012 and Caha 2009), as shown in Table 6.

Table 6. One unattested syncretism (*ABA)

Distal	Medial	Proximal

*

We believe that syncretism gives us a novel perspective on the (well known) spatial deixis data.

As an example from a different grammatical domain, consider the directional prepositions of English (4) versus French (5), discussed by Pantcheva (2011).

(4) English (Pantcheva 2011:236–237)
   a. I ran **at** the stadium. (Location)
   b. I ran **to** the stadium. (Goal)
   c. I ran **from** the stadium. (Source)

(5) French (Pantcheva 2011:238)
   a. J'ai couru **au** stade.
      I.have run at/to.the stadium
      'I ran at the stadium.' (Location)
      'I ran to the stadium.' (Goal)

b. J'ai couru **du** stade
I.have run from.the stadium
'I ran from the stadium.' (Source)

In English the Location, Goal, and Source readings are expressed by three distinct prepositions: *at*, *to*, and *from*, respectively. In French, however, the Location and Goal readings are expressed by the same preposition, namely *à*, as seen by the ambiguity in (5a). French does have a separate preposition expressing the Source reading, however, namely *de*. The fact that *à* is used for both Location and Goal cannot mean that French speakers are unable to make this semantic distinction, rather it just so happens that French shows a Location/Goal syncretism in its prepositional system, while English does not.[8]

Returning to the expression of spatial deixis, section 3.1 lists examples of no syncretism (i.e. a three-way contrast), section 3.2 lists examples of Med/Prox syncretisms, section 3.3 lists examples of Dist/Med syncretisms, and section 3.4 lists examples of Dist/Med/Prox syncretisms.

3.1. *No syncretism (Dist ≠ Med ≠ Prox)*

Three-way systems of spatial deixis are well attested crosslinguistically. That is, many languages deploy specific lexical items to morphologically encode precisely the three readings 'close to S', 'close to H', and 'far from S and H'. Such languages have the system schematically summarized in Table 7, with one lexical item per reading.

Table 7. Three-way system (no syncretism)

Distal 'far from S&H'	Medial 'close to H'	Proximal 'close to S'

In (6–21) we provide a sample of 16 languages that have been reported to display exactly such a system. For the sake of transparency we have not altered the basic glosses as they appear in our secondary sources (for the morphosyntactic categories considered, and their abbreviations, see the titular footnote). In connection with this, note that in (6) we consider the gloss '3 vis', meaning 'close to third person and visible', to be a relic of Bach's (2006) particular descriptive terminology and we do not attach too much importance to it. For our purposes we consider such glosses to

[8] A reviewer asks if we consider the ambiguous *I hit the boy* ***with a stick*** to be a case of syncretism. According to Caha's (2009) case system this is indeed a syncretism, with the preposition *with* being syncretic between the instrumental (i.e. the hitting was done with a stick) and comitative (i.e. the boy who was hit has a stick) readings, which in his feature system correspond to the K_5 and K_6 layers, respectively.

conform to the Distal reading we have established, namely 'far from S and H'.

(6) Kwakw'ala [Wakashan] (Bach 2006:270)
DEM.PRO suffixes
-k '1 vis' [= close to first person and visible]
-uχ '2 vis' [= close to second person and visible]
-iq '3 vis' [= close to third person and visible]

(7) Passamaquoddy [Algic] (Ng 2002:94)
DEM.PRO/ADN [Type 3]

AN.SG	**INAN.SG**	
wot	yut	'near speaker'
not	nit	'near addressee'
yat	yet	'away from speaker and addressee'

(8) Wari' [Chapacura-Wanham] (Everett & Kern 1997:149)
DEM.ADN

M/F	**N**	
cwa'	ca'	'proximate to the speaker'
ma'		'proximate to the hearer'
cwain	cain	'far away (distal) from the interlocutors'

(9) Latin [IE] (Bennett 1918: §87)
DEM.PRO/ADN

M.SG	**F.SG**	**N.SG**	
hīc	haec	hōc	'this (where I am)'
iste	ista	istud	'that (where you are)'
ille	illa	illud	'that (something distinct from the speaker)'

(10) Iraqw [Afro-Asiatic] (Mous 1993:90–91)
DEM.ADN

-í (NEUT -ká)	'near the speaker'
-síng	'near the addressee'
-qá'	'near neither of them but still visible'[9]

(11) Kiswahili [Niger-Congo] (Okombo & Habwe 2007:82–83)
DEM.PRO/ADN

huyu	'proximal to the speaker and listener'
hicho	'proximal to the addressee and distal to the speaker'
kule	'away from the speaker and addressee'

[9] There is also a distal-invisible item *-dá'* which we do not include, as we think evidential features encoding visibility must lie outside the core spatial deixis fseq we are trying to uncover here.

(12) Sinhala [IE] (Chandralal 2010:228)
DEM.ADN
mee ‘proximal to speaker, or to both speaker and hearer’
oyə ‘proximal to hearer’
arə ‘distal from both speaker and hearer; in sight’[10]

(13) Khasi [Austro-Asiatic] (Diessel 1999:43)
ROOTS
-ne ‘proximal’
-to ‘medial (near H)’
-tay ‘distal’

(14) Korean [isolate] (Diessel 1999:20–21)
DEM.ADN
i ‘near the speaker’
ku ‘near the hearer’
ce ‘away from both speaker and hearer’

(15) Japanese [Japonic] (Diessel 1999:59)
ROOTS
ko- ‘near S’
so- ‘near H’
a- ‘away from S+H’

(16) Yimas [Lower Sepik-Ramu] (Foley 1991:112)
ROOTS
-k ‘near speaker’
m- ‘near hearer’
-n ‘near neither speaker nor hearer’

(17) Arapesh [Torricelli] (Aronoff 1994:98)
DEM.PRO [gender viii]

SG	**PL**	
eñuda’	ešuda’	‘pro-near-me’
neñuda’	nešuda’	‘pro-near-you’
ñeiñuda’	šeišuda’	‘pro-over-there’

(18) Tukang Besi [Austronesian] (Donohue 1999:137, 147)
DEM.PRO/ADN
ana ‘near the speaker’
atu ‘nearer the addressee than the speaker’
iso ‘at a distance from either the speaker or the listener(s)’

[10] Here again there is also a distal-invisible *ee* which we do not include.

(19) Tahitian [Austronesian] (Tryon 1970:24)
DEM.ADN
teie ‘near the speaker’
tēna ‘near the person addressed’
tēra ‘not near the speakers’

(20) Ket [Yeniseian] (Werner 1997:137)
DEM.PRO
ki ‘neben dem Sprechenden’
tu ‘neben dem Zuhörenden’
qa ‘vom Sprechenden und Zuhörenden entfernt’

(21) Basque [isolate] (Hualde & de Urbina 2003:123)
DEM.PRO/ADN
(h)au(r) ‘this. . .indicates proximity to the speaker’
(h)ori ‘that (just there). . .[indicates] proximity to the addressee’
(h)ura ‘that (over yonder). . .[indicates] remoteness from both’

Importantly, the fundamental three-way system of spatial deixis is overtly marked in all of these languages. In the rest of section 3 it will be seen that languages may appear to have two-way or even one-way systems, but we will still interpret these to be three-way systems in which syncretisms have simply morphologically conflated the underlying distinctions. That is to say, even if a language has only two morphologically distinct demonstrative elements (or even one), it still has a semantically active three-way system, namely the one in Table 3.

3.2. *Med/Prox syncretism (Dist ≠ Med = Prox)*

When a language has a two-way system with one reading ‘close to S or H’ and the other reading ‘far from S and H’, there is a Med/Prox syncretism, as summarized schematically in Table 8. In such a language the two categories ‘close to H’ and ‘close to S’ will be expressed by the same lexical item.

Table 8. Med/Prox syncretism

Distal ‘far from S&H’	Medial ‘close to H’	Proximal ‘close to S’
	‘close to S *or* H’	

Languages displaying a Med/Prox syncretism include Bulgarian and Apurinã. The relevant forms are presented in (22) and (23), respectively.

(22) Bulgarian [IE] (Imai 2003:23, citing Yajima 1984)

DEM.ADN			
M.SG	**F.SG**	**N.SG**	
toozi	taazi	tovaa	'close to speaker or hearer'
onzi	onazi	onova	'distal'

(23) Apurinã [Arawakan] (Facundes 2000:356)

DEM.ADN		
M	**F**	
iye	oye	'close to the speaker or to the hearer'
ukira	okira	'far from the speaker and hearer'

For Apurinã, Facundes (2000:356, fn.4) mentions that for certain speakers there is also a form *nakara* "for referents out of the visual field". As discussed in footnote 5, this type of deictic element involves additional features (most likely evidentiality features of some kind) outside of our core Dist-Med-Prox system, and we will therefore abstract away from such items in this paper.

Fijian [Austronesian] provides evidence in the prepositional system for a Med/Prox syncretism. Geraghty (1976) reports that the prepositions *e* and *mai* are usually glossed as 'locative–close to S' and 'locative–far from S', respectively, as seen in (24).

(24) Fijian [Austronian] *e* and *mai* (Geraghty 1976:513)

a. Sā tiko **e** **waqa** na kato.
   PRT *is* *on* *boat* *the box*
   'The box is on the boat (Speaker is on boat)'

b. Sā tiko **mai** **waqa** na kato.
   PRT *is* *on* *boat* *the box*
   'The box is on the boat (Speaker not on boat)'

On the basis of information obtained from native informants, Geraghty is able to tease out more precise readings for these prepositions. He finds that (24a) is still possible if the S is not on the boat but the H is; however, (24b) can never be used if the S and/or the H happens to be on the boat (Geraghty 1976:514–515). Thus he concludes that *e* refers to a "location close to speaker or hearer" while *mai* marks "location remote from both speaker and hearer" (Geraghty 1976:515). Geraghty's description is an improvement on previous accounts, which did not take into account the H anchor, and thanks to this kind of descriptive precision we are able to uncover another attestation of a Med/Prox syncretism.

The history of Catalan shows a shift from a three-way system in Old Catalan (25) to a two-way system with a Med/Prox syncretism in modern Catalan (26).

(25) Old Catalan [IE] (Imai 2003:24, citing Otaka 1987)
DEM.PRO/ADN

M.SG	F.SG	
aquest	aquesta	'proximal to the speaker '
aqueix	aqueixa	'proximal to the addressee'
aquell	aquella	'distal'

(26) Catalan [IE] (Imai 2003:23–24, citing Hualde 1992)
DEM.PRO/ADN

M.SG	F.SG	
aquest	aquesta	'proximal to either the speaker or the addressee'
aquell	aquella	'distal'

Thus there is a diachronic path by which Med and Prox can coalesce.

A pattern found in Basque also hints at such a Med/Prox syncretism. As seen above in (21), Basque belongs to the group of languages with a three-way system. However, one specific fact from the history of this language hints at the availability of a Med/Prox syncretism. According to Hualde & de Urbina (2003:122), western varieties of Basque have a 'proximate article' in the plural, as shown for instance in *gizon-ok* 'the men here'. In earlier texts, a proximate article was attested also in the absolutive singular, realized in different variants: *-ori*, *-or*, *-au*, and *-o*. It should be noted that the variant *-au* resembles the Proximal *(h)au(r)* in (21), while the *-ori* and *-or* variants are clearly related to the Medial *(h)ori* instead. Thus, this overlap in the absolutive singular proximate article could be argued to instantiate at least a partial coalescence of Prox and Med.

We have now reviewed the evidence for Med/Prox syncretisms. In languages with such a syncretism, there is a single form with the meaning 'close to S or H' (Med/Prox), set against a form with the meaning 'far from S and H' (Dist). In the next section we will provide evidence for a different kind of syncretism, namely Dist/Med. Anticipating this discussion, the reported attestations in the secondary literature might give the impression that Dist/Med syncretisms – with more than twice as many cases reported – are more frequent than Prox/Med syncretisms – for which we found only five instances. If this were indeed the case, then an explanation would be called for. However, the discrepancy that emerges from the literature may be an artifact of Med/Prox syncretisms being underreported or even misdescribed. As mentioned above, it is rather common in the typological literature that the H anchor in demonstrative systems is overlooked or ignored, so the likelihood of missing a reading like 'close to S *or H*' is, generally speaking, relatively high.[11]

[11] Interestingly, Andrew Nevins (p.c.) has pointed out to us that there is experimental evidence that AAB patterns (of which the Med/Prox pattern is one) are in general less stable than, say, the ABB pattern (of which Dist/Med is one). See also Bobaljik (2007: 20-22, §4.2.2; 2012: §§5.3, 5.4) for relevant discussion.

3.3. *Dist/Med syncretism (Dist = Med ≠ Prox)*

The system for encoding spatial deixis in a language with a Dist/Med syncretism would be schematically represented as in Table 9. In the literature, such languages are often reported as having a two-way 'distance-oriented' system, with one item meaning 'far from (or not close to) S' and the other meaning 'close to S'. In these languages the categories 'far from S and H' and 'close to H' are expressed by the same lexical item.

Table 9. Dist/Med syncretism

Distal 'far from S&H'	Medial 'close to H'	Proximal 'close to S'
'far from/not close to S'		

This type of system is found in English, as seen in (27).

(27) English [IE]
DEM.PRO/ADN
this 'close to S'
that 'not close to S'

With respect to the interpretation of *that* in English, observe that the 'close to H' reading is available, in that if a referent is close to the H then *that* (and not *this*) will be used. It just so happens that the item *that* will be used for a referent far from both S and H as well. As a result of this syncretism, the specific H anchor associated with the Medial reading is obscured in the English system. However, given that the anchor is overtly available in other languages (and given that we assume the oppositions to be universal), we postulate that such a reading must be available in the underlying system.[12]

Additional examples of a two-way system with a Dist/Med syncretism are given in (28–37). The condition for inclusion as a language displaying a Dist/Med syncretism was not only that a 'proximal' vs. 'distal' system

[12] As a reviewer points out, many items in this paper can be decomposed further than what we have done, but for the sake of presentational parsimony we provide only the segmentations necessary to highlight the syncretism and containment patterns we are interested in. Note that this less refined decomposition does not affect our generalizations about syncretism and containment. To take the example of English, it has been proposed that *this* and *that* can be decomposed as *th-is* and *th-at*, respectively, where the first component corresponds to D (Leu 2007, 2008, 2015; Déchaine & Wiltschko 2008; Kayne & Pollock 2010). Though this approach more precisely pinpoints the deictic element involved (i.e. *-is* vs. *-at*), it does not change the basic syncretism pattern observed for this language (Prox *this* or *-is* vs. Dist/Med *that* or *-at*).

be reported in the secondary source for the language in question, but crucially that this system be reported as being S-anchored. Thus, in the examples below, where glosses are not sufficient, we have also provided the relevant passage reporting the anchor.

(28) Klallam [Salish] (Montler 2007:411, 419–420)
DEM.PRO/ADN

non-FEM	**FEM**	
tiə	tsiə	'near'
təsə	łəsə	'far'

"the far and near demonstratives indicate distance from the speaker, not necessarily the addressee" (Montler 2007:419)

(29) Epena Pedee [Choco] (Harms 1994:45)
DEM.ADN
na 'this (here) / physically proximate to the speaker'
hã 'that (there) / physically distant from the speaker'

(30) Macushi [Cariban] (Abbott 1991:105)
DEM.PRO/ADN

AN	**INAN**	
mîserî / *coll*. insemoro	seni / *coll*. sîrîrî	'near to the speaker'
mîîkîrî / *coll*. inkamoro	siini / *coll*. mîrîrî	'remote from the speaker'

(31) Pirahã [Mura] (Everett 1986:285)
DEM.PRO/ADN
gíisai 'this / proximal'
gáihi 'that / distal'
"distinguished by the proximity of the referent to the speaker" (Everett 1986:285)

(32) Lingala [Niger-Congo] (Meeuwis & Stroeken 2012:148)
DEM.ADN
óyo 'close to the speaker'
wâná 'close to the hearer or away from both speaker and hearer'[13]

(33) Mandarin Chinese [Sino-Tibetan] (Yip & Rimmington 2004:48)
DEM.PRO/ADN
zhè 'close to the speaker'
nà 'away from the speaker'

[13] In fact, it is explicitly stated that "*wâná* covers both the medial and the distal scopes" (Meeuwis & Stroeken 2012: 148).

(34) Limbu [Sino-Tibetan] (Tumbahang 2007:149–150)
DEM.PRO STEMS
ABS.SG
ba- 'close to the speaker. . .even if it is far away from the hearer'
hamba- 'remote. . .from the speaker. . .[even] if the referents are closer to the hearer than to the speaker'

(35) Semelai [Austro-Asiatic] (Kruspe 2004:192)
DEM.PRO/ADN
(ʔ)nɔʔ 'this'
ke 'that'
"based on simple distance orientation from the speaker" (Kruspe 2004:192)

(36) Gooniyandi [Australian] (McGregor 1990:144)
DEM.PRO(?)/ADN
ngirndaji 'this'
ngooddoo 'that'
"distance with respect to the speaker" (McGregor 1990:144)

(37) Evenki [Altaic] (Nedjalkov 1997:210–213)
DEM.PRO/ADN
er 'this / near the speaker'
tar 'that / not considered by the speaker to be near'

In section 4.3 we also illustrate the Dist/Med syncretism in Wargamay [Australian], Gulf Arabic [Afro-Asiatic], and Welsh [IE].

Thus from the survey of the literature that we have explored it would appear that Dist/Med syncretisms are crosslinguistically common (five cases of Med/Prox vs. thirteen cases of Dist/Med).[14] It remains true, though, that a great many reference grammars characterize such systems as simply opposing 'proximal'/'this' vs. 'distal'/'that', with no

[14] The Scandinavian languages also display the Dist/Med vs. Prox kind of system, e.g. Swedish N.SG *det där*, CM.SG *den där*, PL *dom där* 'that/those there; far from S' vs. N.SG *det här*, CM.SG *den här*, PL *dom här* 'that/those here; close to S'. Note that in this case the locative reinforcers are spelling out the relevant deixis features. Scandinavian also has a Dist/Med vs. Prox distinction in Dist/Med N.SG *det*, CM.SG *den*, PL *dom* vs. N.SG *det-ta*, CM.SG *den-na*, PL *dessa* (again Swedish). Anticipating the discussion of containment in section 4, we point out that here it looks as though there is containment of Dist/Med within Prox in the singular forms [[*det*]-*ta*] and [[*den*]-*na*], which would be a counterexample to our generalization in section 4. We can at this point make three observations about this. First, if the colloquial language is to be considered it would appear that the locative-reinforced items (*den*/*det*/*dom här* vs. *den*/*det*/*dom där*) are the genuine members of the two-way distance system, and there is no containment observed in these forms. Second, observe that the reinforced forms contain the item *det*/*den*/*dom*, which is not only a Distal demonstrative (of some kind) but also the prenominal (adjectival) definite article. Thus something extra needs to be said about *det*/*den*/*dom*. Third, we note that it would be possible to hypothesize the existence of a null Distal morpheme, giving the Distal forms [[*det*]-*Ø*] and [[*den*]-*Ø*]. This would mean that there is in fact no containment in the first place.

additional reference to participant anchors. Without explicit indication of the anchor, it is impossible to distinguish Med/Prox syncretisms from Dist/Med syncretisms, and thus we have excluded them. Careful empirical work with informants should clarify the nature of such systems. Despite such descriptive shortcomings in the literature, we conclude that the empirical evidence for Dist/Med syncretisms is robust.

3.4. *Dist/Med/Prox syncretism (Dist = Med = Prox)*

If we assume that Prox, Med, and Dist are universal semantic categories then we have to conclude that it may also be possible to have a total syncretism which lexically conflates all three readings in this domain. That is to say, we should find languages that display a single demonstrative form that can be used as a Proximal, Medial, or Distal. Schematically such a language would have the one-way system in Table 10. Languages like this will have what we will refer to as a 'neutral' demonstrative. Put differently, these demonstratives are (or seem to be) 'unmarked' for spatial deixis.

Table 10. Dist/Med/Prox syncretism

Distal 'far from S&H'	Medial 'close to H'	Proximal 'close to S'

neutral demonstrative

Diessel (1999:36–39) reports that while all languages have at least two locative adverbs expressing a contrast like 'here' vs. 'there', some languages do indeed have neutral demonstratives. The seven languages with neutral demonstratives in Diessel's (1999) sample are Alamblak [Sepik], Czech [IE], French [IE], German [IE], Koyra Chiini [Nilo-Saharan], Supyire [Niger-Congo], and Tok Pisin [English creole]. In these languages the neutral demonstrative is very close to a definite article or the like, and it is possible that the demonstrative is developing in this direction (i.e. from exophoric to endophoric). Diessel is careful to mention, though, that for now they retain their exophoric usage.

Again a methodological issue arises here. Because our hypothesis that there are universally three core readings in the spatial deixis domain is not universally adopted, it is quite difficult to glean precise glosses from the descriptive literature, and thus it is difficult to verify if the three readings we are concerned with are available for the neutral demonstrative of the language in question.

However, a simple example from a familiar language can show how the neutral demonstrative works. In French, there is one adnominal demonstrative, whose form varies in number and gender: M.SG *ce*, F.SG *cette*, PL *ces*. The item can be used in all three of the deictic contexts we have postulated. We illustrate this in detail in (38), providing the relevant discourse contexts.

(38) French [IE]
S and H are sitting facing each other at a table; S points to a book at location (a, b, c) and says:
Ce livre est vraiment bon; tu devrais le lire.
CE *book is truly good you should it read*
a. ✓ 'close to the S' (directly in front or beside)
b. ✓ 'close to the H' (directly in front or beside)
c. ✓ 'far from S and H' (on a table at the other side of the room)

For the sake of completeness we add that our informants report that the locative adverbs *(i)ci* (usually glossed as 'here') and *là* (usually glossed as 'there') are actually distance-neutral. Rather than distinguishing proximity or remoteness, these items are in fact used for contrastive purposes when two or more referents are involved. As such they are not used in any of the three contexts in (38). The locative adverb *là-bas* 'over there', however, does carry a distinct distal or remote-type reading, and may optionally be used in (38c).[15] Thus, in French we have a clear-cut case of a neutral gestural demonstrative, *ce(tte)/ces*, which can be used in Proximal, Medial, and Distal contexts. In other words, French *ce(tte)/ces* displays a Dist/Med/Prox syncretism.

West Flemish [IE] has a mixed system which includes a neutral demonstrative. In the adnominal system (M.SG *dienen*, F.SG *die*, N.SG *dat*), there is total syncretism, as seen in (39), where *dienen*/*die*/*dat* is possible in all three contexts.[16]

(39) West Flemish adnominal system (Dist = Med = Prox)
S and H are standing in front of a shop-window, and S says:
a. k'Een **dienen broek / die bloese / dat emde** HIER
I.have these trousers / this blouse / this shirt HERE
gekocht.
bought
'I bought these trousers/this blouse/this shirt HERE.'
[pointing to S's clothing]

[15] Frédérique Berthelot (p.c.) points out that it is important to distinguish *ce livre-là* from *ce livre*, *lá*. In the latter structure *là* is a topic marker and as such can be used in any context, regardless of distance or number of referents.

[16] Note that the prosody arising with focally stressed *HIER* 'HERE' (i.e. 'in this shop') in these examples and below precludes an interpretation where 'here' is a reinforcer adverb that goes with the demonstrative.

b. Ee-j **dienen broek / die bloese / dat emde** HIER
have.you those trousers / that blouse / that shirt HERE
gekocht?
bought
'Did you buy those trousers/that blouse/that shirt HERE?'
[pointing to H's clothing]

c. Ee-j **dienen broek / die bloese / dat emde**
have.you those trousers / that blouse / that shirt
geprobeerd?
tried
'Did you try on those trousers/that blouse/that shirt?'
[pointing to clothing in the window]

While the adnominal system of West Flemish has a total Dist/Med/Prox syncretism for all three genders, the pronominal system is different. In the neuter pronoun there is a full syncretism, with N.SG *dat* being used in all three spatial-deictic contexts (40).

(40) West Flemish neuter pronoun (Dist = Med = Prox)

a. k'Een **dat** HIER gekocht.
I.have this HERE bought
'I bought this HERE.' [pointing to S's clothing]

b. Ee-j **dat** HIER gekocht?
have.you that HERE bought
'Did you buy that HERE?' [pointing to H's clothing]

c. Ee-j **dat** geprobeerd?
have.you that tried
'Did you try that on?' [pointing to clothing in the window]

However, in the masculine and feminine pronouns, only Distal and Medial are syncretic (M.SG *den dienen*, F.SG *de die*), while Proximal is rendered by a distinct item (M.SG *den dezen*, F.SG *de deze*) (41).

(41) West Flemish masculine and feminine pronouns (Dist = Med ≠ Prox)
S and H are standing in front of a shop-window; S says:

a. k'Een **den dezen / de deze** HIER gekocht.
I.have the this / the this HERE bought
'I bought this HERE.' [pointing to S's clothing]

b. Ee-j **den dienen / de die** HIER gekocht?
have.you the that / the that HERE bought
'Did you buy that HERE?' [pointing to H's clothing]

c. Ee-j **den dienen / de die** geprobeerd?
have.you the that / the that tried
'Did you try that on?' [pointing to clothing in the window]

The West Flemish spatial-deictic system is summarized in Table 11.

Table 11. West Flemish split system

DEM.ADN	Distal	Medial	Proximal
DEM.PRO (NEUT)	Distal	Medial	Proximal
DEM.PRO (MASC and FEM)	Distal	Medial	Proximal

As seen here, West Flemish displays a split system, with total syncretism in the adnominal demonstratives of all genders and the neuter pronominal demonstrative, but with a Dist/Med vs. Prox pattern in the masculine and feminine pronominal demonstratives.[17]

3.5. *Nanosyntax and the missing syncretism*

The theory of nanosyntax (see Starke 2009 for a concise overview) has had significant success as a theory of syncretism (see, among others, Caha 2009 on Case, Taraldsen 2009 on Bantu noun classes, and Pantcheva 2011 on Path; see also Bobaljik 2007, 2012 for influential and foundational work in Distributed Morphology). A keystone of the nanosyntactic approach to syncretism is what is known as the *ABA theorem, which states that syncretism systematically targets features which are *adjacent* in the functional sequence. We adopt the *ABA theorem here.

Consider the three Ancient Greek syncretism patterns in Table 12: NOM/ACC, ACC/GEN, and GEN/DAT.

Table 12. Syncretisms in Ancient Greek (Caha 2009:8–9)

NOM	ACC	GEN	DAT
NOM	ACC	GEN	DAT
NOM	ACC	GEN	DAT

In other words, syncretism reveals the linear order of formal features. By the *ABA theorem, then, we know on the basis of these syncretisms that

[17] Interestingly many other Flemish dialects have the Dist/Med vs. Prox system throughout. We will not go into this here but clearly it would be interesting to explore what is at the basis of this microvariation. Also interesting is the fact that the pronominal forms in West Flemish contain a determiner (*de(n)*) while the adnominal forms do not.

the NOM and ACC features must be adjacently merged heads, that the ACC and GEN features must be adjacently merged heads, and that the GEN and DAT features must be adjacently merged heads in the underlying functional sequence.

Above we have presented evidence for the syncretism patterns in Table 13.

Table 13. Syncretisms in the domain of spatial deixis

Distal	Medial	Proximal
Distal	Medial	Proximal
Distal	Medial	Proximal
Distal	Medial	Proximal

Since there is a Med/Prox syncretism attested, the features for Med (Dx_2) and Prox (Dx_1) must be adjacent in the underlying functional sequence according to the *ABA theorem. Since there is a Dist/Med syncretism also, we know that the features for Dist (Dx_3) and Med (Dx_2) must be adjacent as well. Importantly, there is one logical pattern which is missing, namely a syncretism between Dist and Prox to the exclusion of Med (i.e. the *ABA pattern).

Table 14. The missing syncretism: Dist/Prox vs. Med (*ABA)

*		
Distal	Medial	Proximal

Note that there is evidence for a syncretism between Dist and Prox only when the Med is involved too, as with the neutral demonstratives discussed above for French and West Flemish. According to the nanosyntactic approach adopted here (whereby syncretism is a function of the internal organization of features), the non-availability of the pattern in Table 14 is not an accidental gap, rather such a syncretism is in principle excluded. All in all, the patterns identified here combined with the nanosyntactic approach to syncretism and the *ABA theorem tell us that the linear order of spatial-deictic features is Dist | Med | Prox (more precisely Dx_3 | Dx_2 | Dx_1 (cf. sections 1.2 and 2.3), but we will continue using the more descriptive labels Dist, Med, Prox below). In section 5 we show how the *ABA theorem can be derived using nanosyntactic principles of spellout.

4. Morphological containment

The syncretism data establish a linear order of heads: Prox is next to Med, and Med is next to Dist (i.e. Med is merged between Prox and Dist, preventing the illicit ABA pattern corresponding to a hypothetical Dist/Prox syncretism). What syncretism does not tell us, however, is the hierarchical order of these features. That is to say, is the functional hierarchy Dist > Med > Prox or Prox > Med > Dist? The phenomenon of morphological containment (pioneered by Bobaljik 2007, 2012 in the framework of Distributed Morphology and put to nanosyntactic use by Caha 2009, Pantcheva 2011, Starke 2011b, 2013, among others) will be of help here. Morphological containment is a phenomenon that reveals underlying structural organization in an especially transparent way, since smaller structures are observed to be overtly nested or contained within larger structures. To take a simple example from Bobaljik's (2007, 2012) work, we can clearly see that the basic (or positive) form of an adjective (Adj), e.g. *great*, is structurally smaller than and contained within the comparative (Cmpr) form, e.g. *great-er*. Since the comparative is bigger than the positive, we can posit (assuming that syntax builds from the bottom-up) the underlying hierarchy Cmpr > Adj or [Cmpr [Adj]].

Regarding spatial deixis, we have found languages in which the Medial form overtly contains the morpheme for Proximal, and other languages in which the Distal form overtly contains the morpheme for Medial. As will be shown below, these containment relations are not unconstrained: while the Proximal may be contained within the Medial or within the Distal, and the Medial may be overtly contained within the Distal, so far we have not come across any convincing (see footnote 14) cases of the Medial being contained within the Proximal, or of the Distal being contained within the Medial or the Proximal. We will take these overt containment relations observed in these languages to be significant and to reflect a unique internal organization of additive features, in particular the fact that the three spatial-deictic features are hierarchically organized as functional heads in an fseq universal to all languages.

First let us illustrate the reported patterns of containment.

4.1. *Medial contains Proximal*

In some languages we see that the Proximal morpheme is overtly contained within the Medial (42–45).

As seen in (42a) the Ma'di Proximal morpheme *dî* is contained within the Medial item *ɨlɛ́dî*. The containment relation is sketched in (42b) using

brackets, showing that the Medial item is actually bimorphemic, with one of the morphemes being the Proximal form.

(42) Ma'di [Nilo-Saharan] (Blackings & Fabb 2003:123)[18]
  a. DEM.ADN
    dɨ́ 'this N (proximal in the physical context)'
    ɨlédɨ́ 'that N near you (in the physical context)'
  b. CONTAINMENT
    [Med [Prox]]
    [ɨlé-[dɨ́]]

Nkore-Kiga (43) also shows the Proximal morpheme contained within the Medial structure, in this case [[Prox] Med].

(43) Nkore-Kiga [Niger-Congo] (Taylor 1985:135–136)
  a. DEM.PRO/ADN
    ogu ~~'proximal' (more precisely 'close to speaker')~~
    ogwo ~~'medial' (more precisely 'close to hearer')~~
  b. CONTAINMENT
    [[Prox] Med]
    [[ogu]-o] > *ogwo*

The same pattern is seen in Boumaa Fijian (44) and Palauan (45).

(44) Boumaa Fijian [Austronesian] (Finegan 2013:212; dialect A in Dixon 1988)
  a. DEM.PRO/ADN
    o$^{\eta}$go 'near the speaker'
    o$^{\eta}$gori 'near the hearer'
  b. CONTAINMENT
    [[Prox] Med]
    [[o$^{\eta}$go]-ri]

(45) Palauan [Austronesian] (Janssen 2004:989–990)
  a. DEM.PRO
    ngile 'this / related to the first person exclusive'
    ngilecha 'that / related to the second person'
  b. CONTAINMENT
    [[Prox] Med]
    [[ngile]-cha]

These containment relations will be given a more detailed treatment in section 5.

[18] For the sake of completeness we add here that it is not clear from the description if *dɨ́* is S-anchored. Importantly, however, the item *ilédɨ́* is explicitly mentioned as H-anchored.

4.2. *Medial and Distal contain Proximal*

In other languages we see that the Proximal is overtly contained within both the Medial and Distal items (46–47).

In Wailevu Fijian (46), for instance, the Proximal form is *γā*; this morpheme is contained within the bimorphemic Medial *γā-ri* and also within the bimorphemic Distal *γa-ðei*.

(46) Wailevu Fijian [Austronesian] (Ross 2007:278)

a. DEM.PRO/ADN

γā ‘near speaker’
γāri ‘near addressee’
γaðei ‘distant from both speaker and addressee’

b. CONTAINMENT

[[Prox] Med]
[[γā]-ri]
[[Prox] Dist]
[[γa]-ðei] (provided *γā* surfaces as *γa* here)

As seen in the paradigms in (47), Ewondo also shows containment of the Proximal within both the Medial and Distal forms. In noun class 2, for example, the Proximal singular *ū* is contained within the Medial singular *ū-lú* and also within the Distal singular *ū-lí*. The same pattern is instantiated in the plural, where the Proximal *mī* is contained within both Medial *mī-lí* and Distal *mī-líí*. The observed containment is fairly systematic across noun class and number. See also section 4.5 for additional discussion.

(47) Ewondo [Niger-Congo] (Diessel 1999:18, citing Redden 1980)

a. DEM.PRO/ADN

	1	2	3	4	5	6	
SG	ɔ́	ū	dī	dzī	ī	ū	‘near S’
	ɔ́lō	ūlú	dīlí	dzīlí	īlí	ūlú	‘near H’
	ɔ́lí	ūlí	dílí	dzílí	ílí	ūlí	‘away from S+H’
PL	bá	mī	mā	bī	mā	dī	‘near S’
	bálā	mīlí	mālá	bīlí	mālá	dīlí	‘near H’
	bálí	mīlíí	mālí	bīlíí	mālí	dīlíí	‘away from S+H’

b. CONTAINMENT

[[Prox] Med]
[[Prox] Dist]

	1	2	3	4	5	6	
SG	ɔ́	ū	dī	dzī	ī	ū	Prox
	[[ɔ́]-lō]	[[ū]-lú]	[[dī]-lí]	[[dzī]-lí]	[[ī]-lí]	[[ū]-lú]	Med
	[[ɔ́]-lí]	[[ū]-lí]	dílí	dzílí	ílí	[[ū]-lí]	Dist

PL	bá	mī	mā	bī	mā	dī	Prox
	[[bá]-lā]	[[mī]-lí]	[[mā]-lá]	[[bī]-lí]	[[mā]-lá]	[[dī]-lí]	Med
	[[bá]-lí]	[[mī]-líí]	[[mā]-lí]	[[bī]-líí]	[[mā]-lí]	[[dī]-líí]	Dist

4.3. *Distal/Medial contains Proximal*

The Proximal can also be overtly contained within an item which is syncretic for Distal and Medial (Dist/Med).

First take Wargamay, which has a two-way system consisting of a syncretic Dist/Med vs. Prox. In (48) we see, furthermore, that Wargamay's syncretic Distal/Medial form *ɲuŋga-gi* contains the Proximal form *ɲuŋga*.

(48) Wargamay [Australian] (Dixon 1981:44–45)
  a. DEM.PRO/ADN
     ɲuŋga 'this one (near speaker)'
     ɲuŋgagi 'that one (distant from speaker)'
  b. CONTAINMENT
     [[Prox] Dist/Med]
     [[ɲuŋga]-gi]

Another language that patterns along similar lines is Gulf Arabic (49). In this language the Proximal forms M.SG *haadha* and F.SG *(haa)dhi* are contained within the syncretic Distal/Medial items M.SG *(haa)dha-ak* and F.SG *(haa)dhi-ich*.

(49) Gulf Arabic [Afro-Asiatic] (Holes 1990:172–173)
  a. DEM.PRO

M.SG	**F.SG**	
haadha	(haa)dhi	'this / near to the speaker'
(haa)dhaak	(haa)dhiich	'that / remote...from the speaker'

  b. CONTAINMENT
     [[Prox] Dist/Med]
     [[haadha]-ak]
     [[(haa)dhi]-ich]

In Welsh (50) we also see a version of this phenomenon.

(50) Welsh [IE] (Borsley, Tallerman & Willis 2007:176)
  a. DEM.PRO/ADN

M.SG	**F.SG**	**N.SG**	
hwn	hon	hyn	'proximal / this'
hwnnw	honno	hynny	'distal / that'

b. CONTAINMENT
[[Prox] Dist/Med]
[[hwn]-nw]
[[hon]-no]
[[hyn]-ny]

It should be noted that the Welsh system is in a state of flux, as the *hwn* and *hwnnw* systems are falling together semantically. Concurrently with this coalescence, a new Distal form is emerging with the form M.SG *hwnna*, F.SG *honna*, N.SG *hynna* 'physically distant from the speaker' (Borsley, Tallerman & Willis 2007:176). Here too, though, we observe containment of the Proximal within the new Distal: [[*hwn*]-*na*], [[*hon*]-*na*], and [[*hyn*]-*na*].

As a final example, consider Limbu (51). In this language, the Proximal stem is *ba-*, a morpheme which is contained within the Distal/Medial stem *ham-ba-*.

(51) Limbu [Sino-Tibetan] (Tumbahang 2007:149)
a. DEM.PRO STEMS
ba- 'close to the speaker'
hamba- 'remote…from the speaker'
b. CONTAINMENT
[Dist/Med [Prox]]
[ham-[ba-]]

4.4. *Distal contains Medial*

Examples of the Medial contained within the Distal are harder to come by, but we have identified one language showing the phenomenon sufficiently clearly to be mentioned here. The language is a variety of Fijian (52). In Boumaa Fijian the Medial is *yā*, which is clearly contained within the bimorphemic Distal *ma-yā*.

(52) Boumaa Fijian [Austronesian] (Ross 2007:278; dialect B in Dixon 1988:58)
a. DEM.PRO/ADN
yā 'near addressee'
mayā 'distant from both speaker and addressee'
b. CONTAINMENT
[Dist [Med]]
[ma-[yā]]

4.5. *Distal contains Medial contains Proximal*

Consider Ewondo from (47) again. This language displays cases of what might be called 'total nesting'. Recall from above that parts of

this language's paradigm show containment of the Proximal within both the Medial and the Distal. For instance, the plural class 2 Proximal *mī* is contained within both Medial *mī-lí* and Distal *mī-líí*. We now observe, additionally, that here there is a containment relation between the Distal and the Medial as well: Medial *mīlí* is contained within Distal *mīlí-í*. As shown in (53), this also goes for the plural of classes 4 and 6.

(53) Ewondo [Niger-Congo] (Diessel 1999:18, citing Redden 1980)

a. Class 2.PL mīlí 'near H'
mīlíí 'away from S+H'
Class 4.PL bīlí 'near H'
bīlíí 'away from S+H'
Class 6.PL dīlí 'near H'
dīlíí 'away from S+H'

b. CONTAINMENT
[[[Prox] Med] Dist]
[[[mī]-lí]-í]
[[[bī]-lí]-í]
[[[dī]-lí]-í]

In the plural Distal forms of classes 2, 4, and 6, then, we see all three layers of the spatial-deictic fseq morphologically realized, a case of 'total nesting'.

4.6. *Hierarchy of Dist, Med, and Prox*

Morphological containment is the key to understanding how the functional sequence is merged, i.e. if the hierarchy of spatial-deictic features is Dist > Med > Prox or alternatively Prox > Med > Dist. The morphological containment relations discussed in sections 4.1 through 4.5 above can be succinctly summarized as follows:

- Prox is smaller than both Med and Dist.
- Med is smaller than Dist.

That is to say, Dist is larger than Med and Med is larger than Prox, giving the hierarchy Dist > Med > Prox. To take Ewondo as a highly illustrative case in point, the plural Distal form *mīlíí* is, as mentioned above, triply nested: the Distal is the full form *mī-lí-í* 'far from S and H'; the Medial arises by subtracting the morpheme *-í*, giving *mī-lí* 'close to H'; and the Proximal arises by subtracting yet another morpheme, *-lí*, yielding *mī* 'close to S'.

The structural superset-subset relations at stake are given in Figure 8.

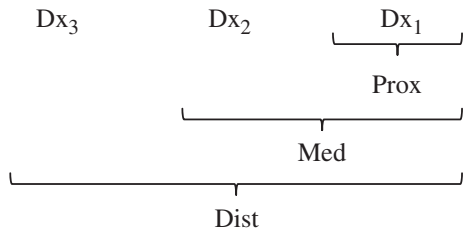


Figure 8. Superset-subset relations

Observe that it is not the case that the Proximal combines *with* the Medial, or that the Medial combines *with* the Distal; rather, the Medial is larger than and also *comprises* the Proximal, and the Distal, in turn, is larger than and also *comprises* the Medial.

The facts suggest a tight fit between form and meaning. Observe that Prox 'close to S' is at the bottom of the spatial deixis hierarchy. Importantly, this makes sense from a semantic viewpoint. Adopting the fseq proposed here, then, corresponds to saying that the speaker's perspective is built first, giving spatial deixis an egocentric foundation (cf. Bühler 1934). From here the domain of spatial reference is extended to that of the hearer, by most accounts the next-important participant in the speech situation. Finally, the domain is extended beyond the immediate surroundings, to an area beyond the speaker and hearer. This is a common way to characterize the semantics of spatial deixis, but, importantly, we have shown here that morphological form parallels the semantics.

In the next section we provide a fuller nanosyntactic analysis of the various empirical patterns encountered above, explaining how morphosyntactic structure is lexicalized (or *spelled out*) by structures stored in lexical entries in the lexicon.

5. (Phrasal) spellout in nanosyntax

What we have seen is that in some languages each layer of the spatial deixis fseq directly corresponds to one morpheme, while in other languages there is syncretism; languages may also display containment relations. Syncretism and containment may cooccur. Using examples drawn from the languages discussed we will show in this section how we can capture these manifestations in terms of the representation in Figure 8 within a nanosyntactic framework.

Let us begin by assuming that the feature system we have uncovered is universal and also make the stronger hypothesis that the order in which these features are merged (i.e. the functional sequence $Dx_3 > Dx_2 > Dx_1$) is universal. Moreover, we adopt the cartographic maxim of 'one feature/

one head' (OFOH) (Cinque & Rizzi 2008:50), meaning that each feature is merged as its own head that projects in the functional spine. Applying the OFOH maxim to our spatial-deictic features in Figure 8 gives the fseq in Figure 9. Following Kayne (1984, 1994), we assume that syntax builds only binary- and right-branching structures.

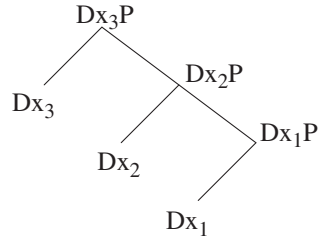


Figure 9. Functional sequence of spatial deixis

As demonstrated clearly by the containment facts, these features should be understood in additive terms, as illustrated in Figure 10.

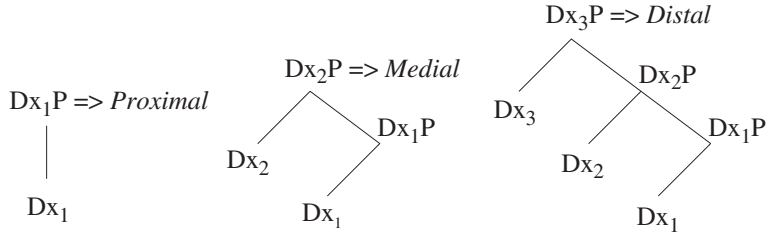


Figure 10. Additivity

Again, the Proximal is structurally contained within the Medial and the Medial is structurally contained within the Distal. This applies to *all languages*, even when there is no overt morphosyntactic evidence from containment. On a more general level, this necessitates that the system allow for phrasal spellout, i.e. that entire XPs can be targeted for lexicalization (alternatively referred to as spellout or matching).

Adopting a nanosyntactic approach, we assume that morphosyntactic structure must be matched or spelled out by lexical structure (i.e. structures which are stored in the lexicon as part of lexical entries). Spellout, moreover, is regulated by certain principles (Starke 2009, 2011abc, Lundquist 2008, Muriungi 2008, Ramchand 2008, Caha 2009, Taraldsen 2009, Fábregas 2009, Pantcheva 2011, Vangsnes 2013, among

others). We introduce the two most important principles here.[19] The first one is defined in (54). (Note here that 'match' implies feature identity.)

(54) Superset Principle[20]
Match a lexically stored tree (L) to a syntactic tree (S) if L is the same size as or bigger than S.

Syncretism (e.g. English *that* has two readings, either Medial or Distal) is a case of a single lexical tree (L) which applies in more than a single morphosyntactic (S) environment. We can understand syncretism in terms of the Superset Principle in (54): syncretism happens when a single L matches more than one S.

The second principle is defined in (55).

(55) Elsewhere Principle
Given a number of Ls that match S, pick the L that fits best.

The Elsewhere Principle guarantees that when multiple Ls compete to spell out an S, only the best-fitting L (meaning the one with the least amount of extra features compared to S) will be chosen.

All in all, the (language-specific) content of the lexicon will determine how the same (universal) morphosyntactic structures will be realized. Concrete examples are discussed next.

5.1. *Spelling out the pattern Dist ≠ Med ≠ Prox*

In languages like Latin where there is no syncretism in the spatial-deictic system, there is a separate lexical entry (L) for each morphosyntactic structure (S). A simplified version of the Latin lexicon is given in Figure 11. A lexical entry is here taken to consist of a phonological form (here, for the sake of simplicity, provided in conventional orthography) linked to a morphosyntactic tree (L).

[19] There is a third principle, the Override Principle, which states that later/higher spellouts override earlier/lower spellouts. Though it becomes crucial when we take into account the step-by-step (feature-by-feature) details of derivations in nanosyntax, it is not relevant for our purposes here.

[20] As opposed to DM's Subset Principle (Halle 1996: 128): "...a Vocabulary item is inserted...if the item matches all or a subset of the grammatical features specified in the terminal morpheme."

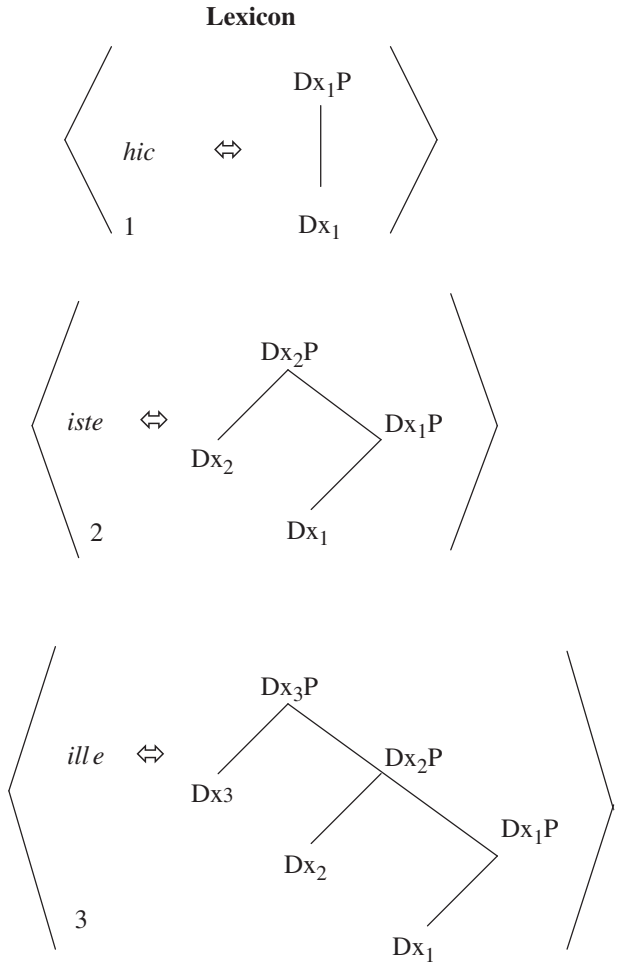


Figure 11. Latin (no syncretism)

In Figure 11 the lexical entry for *hic* 'close to S' corresponds to Dx_1P (L1), the lexical entry for *iste* 'close to H' corresponds to $[Dx_2P\ [Dx_1P]]$ (L2), and the lexical entry for *ille* 'far from S and H' corresponds to $[Dx_3P\ [Dx_2P\ [Dx_1P]]]$ (L3).

Consider now the three S-structures which the syntax can build. The first is Dx_1P, with the meaning 'close to S' (Proximal).

Figure 12. S1 (Proximal) => *hic*

All three L-structures in Figure 11 are the same size or bigger than S1, so by the Superset Principle any one of them could spell out S1. However, the Elsewhere Principle tells us that L1 is the best fit, so S1 is spelled out as *hic* in Latin, as seen in Figure 12.

The next S-structure which the syntax can build is [Dx_2P [Dx_1P]], with the meaning 'close to H' (Medial).

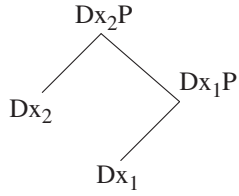


Figure 13. S2 (Medial) => *iste*

By the Superset Principle, L1 (*hic*) is too small to spell out S2. However, both L2 (*iste*) and L3 (*ille*) are big enough to spell out S2. By the Elsewhere Principle, L2 is a better fit, so S2 is spelled out as *iste* in Latin, as seen in Figure 13.

The next S-structure which the syntax can build is [Dx_3P [Dx_2P [Dx_1P]]], with the meaning 'far from S and H' (Distal).

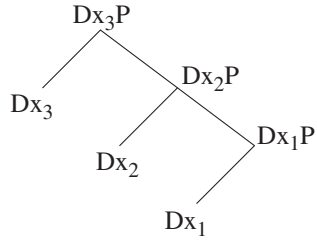


Figure 14. S3 (Distal) => *ille*

By the Superset Principle, L1 (*hic*) and L2 (*iste*) are too small to spell out S3. The only possible match, then, is L3. S3 is therefore spelled out as *ille* in Latin, as seen in Figure 14.

5.2. *Spelling out the pattern Dist ≠ Med = Prox*

In languages like Bulgarian where there is a Med/Prox syncretism in the spatial-deictic system, there are only two lexical entries (rather than Latin's three) in the lexicon. A simplified version of the Bulgarian lexicon is given in Figure 15.

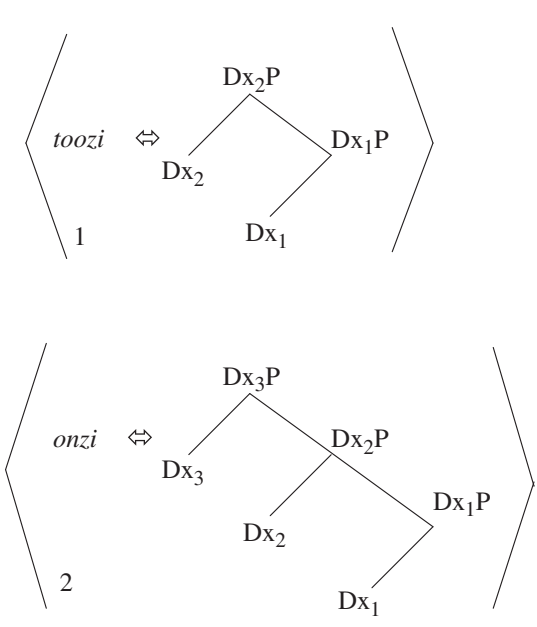


Figure 15. Bulgarian (Med/Prox vs. Dist)

In Figure 15 the lexical entry for *toozi* 'close to S or H' corresponds to [Dx_2P [Dx_1P]] (L1), and the lexical entry for *onzi* 'far from S and H' corresponds to [Dx_3P [Dx_2P [Dx_1P]]] (L2).

Consider now the three S-structures which the syntax can build. The first is Dx_1P, with the meaning 'close to S' (Proximal).

Figure 16. S1 (Proximal) => *toozi*

Both L-structures in Figure 15 are big enough to spell out the S1, so by the Superset Principle either one of them is an option. However, L1 (*toozi*) has only one extra feature (Dx_2) compared to S1, whereas L2 (*onzi*) has two extra features (Dx_2 and Dx_3) compared to S1. Thus, by the Elsewhere Principle, S1 is spelled out in Bulgarian as *toozi*, as seen in Figure 16.

The next S-structure which the syntax can build is [Dx_2P [Dx_1P]], with the meaning 'close to H' (Medial).

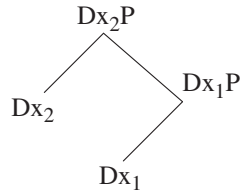


Figure 17. S2 (Medial) => *toozi*

By the Superset Principle, both lexical entries can again, in principle, spell out S2. By the Elsewhere Principle, however, L1 (*toozi*) is a better fit, since its L-structure matches S2 perfectly, whereas L2 (*onzi*) has a superfluous feature (Dx_3) when compared to S2. Thus S2 is spelled out as *toozi* in Bulgarian (Figure 17), and the Med/Prox syncretism emerges: since the L-structure of *toozi* is [Dx_2P [Dx_1P]] it can spell out either S1 (Dx_1P) or S2 ([Dx_2P [Dx_1P]]). Importantly, moreover, there is no lexical entry in the Bulgarian lexicon like Latin's < *hic* ⇔ Dx_1P > (which would be a better match for the Proximal structure S1 than *toozi*'s L-structure [Dx_2P [Dx_1P]]).

The next S-structure which the syntax can build is [Dx_3P [Dx_2P [Dx_1P]]], with the meaning 'far from S and H' (Distal).

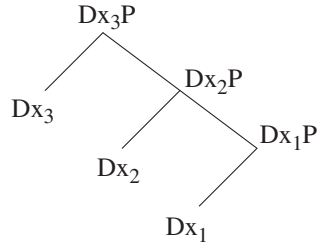


Figure 18. S3 (Distal) => *onzi*

The only possible match for S3 is L2 (*onzi*), since L1 (*toozi*) is simply too small. S3 therefore spells out as *onzi* in Bulgarian, as seen in Figure 18.

5.3. *Spelling out the pattern Dist = Med ≠ Prox*

In languages like English where there is a Dist/Med syncretism, set against a distinct Prox form, there are two lexical entries available in the lexicon. A simplified (again, see our footnote 12) version of the English lexicon is given in Figure 19.

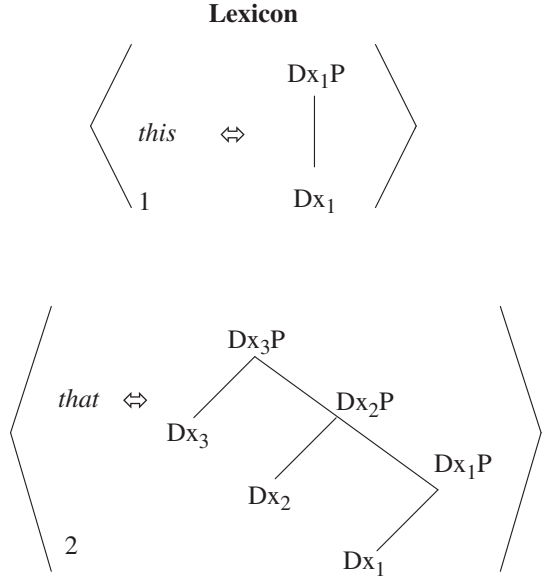


Figure 19. English (Dist/Med vs. Prox)

In Figure 19 the lexical entry for *this* 'close to S' corresponds to Dx_1P (L1), and the lexical entry for *that* 'not close to S' corresponds to $[Dx_3P\ [Dx_2P\ [Dx_1P]]]$ (L2).

Consider now the three S-structures which the syntax can build. The first is Dx_1P, with the meaning 'close to S' (Proximal).

Figure 20. S1 (Proximal) => *this*

Both L-structures in Figure 19 are big enough to spell out S1 by the Superset Principle, but the Elsewhere Principle guarantees that L1 (*this*) is chosen, since it is a perfect match for S1 while L2 (*that*) has two extra

features (Dx_2 and Dx_3) compared to S1. Thus S1 is spelled out as *this* in English, as seen in Figure 20.

The next S-structure which the syntax can build is [Dx_2P [Dx_1P]], with the meaning 'close to H' (Medial).

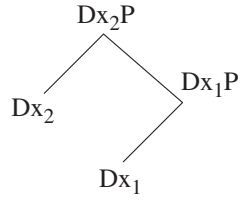


Figure 21. S2 (Medial) => *that*

This time L1 (*this*) is too small to spell out S2. In fact, only L2 (*that*) is big enough to spell out S2. Even though L2 still has one extra feature (Dx_3) compared to S2, it is the only option in the lexicon for lexicalizing this S-structure, so S2 is spelled out as *that* in English, as seen in Figure 21.

The next S-structure which the syntax can build is [Dx_3P [Dx_2P [Dx_1P]]], with the meaning 'far from S and H' (Distal).

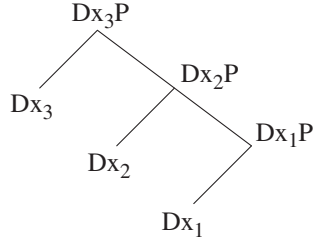


Figure 22. S3 (Distal) => *that*

Again only L2 (*that*) is big enough to spell out S3, and this time it is a perfect match for the S-structure. S3 is therefore spelled out as *that* in English, as seen in Figure 22. The Dist/Med syncretism is accounted for in the following way: by the Superset Principle, L2 (*that*) can match either S2 'close to H' or S3 'far from S and H'. Even though L2 is not a perfect fit for S2 (Med), L1 (*this*) is too small to spell out this S-structure, so L2 (*that*) must step in to lexicalize it.

5.4. *Spelling out the pattern Dist = Med = Prox*

In languages like French there is a neutral demonstrative which can take any one of the three spatial-deictic readings. In these kinds of languages there is one lexical entry, as seen in Figure 23 for French.

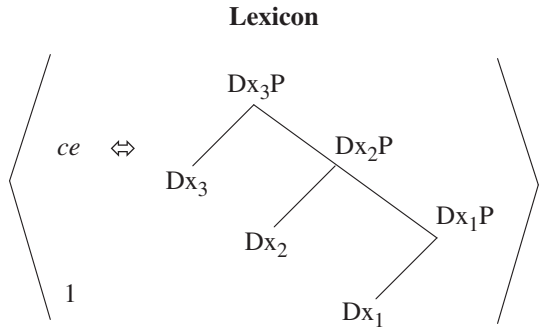


Figure 23. French (Dist/Med/Prox)

In Figure 23 the lexical entry for *ce* 'close to S' corresponds to the full structure [Dx_3P [Dx_2P [Dx_1P]]] (L1).

Consider now the three S-structures which the syntax can build. The first is Dx_1P, with the meaning 'close to S' (Proximal).

Figure 24. S1 (Proximal) => *ce*

L1 (*ce*) is a suitable match for S1 by the Superset Principle. Even though L1 is not a perfect fit for S1 (i.e. L1 has two extra features, Dx_2 and Dx_3), there is no other lexical entry available to compete with it by the Elsewhere Principle. Thus S1 is spelled out as *ce* in French, as seen in Figure 24.

The next S-structure which the syntax can build is [Dx_2P [Dx_1P]], with the meaning 'close to H' (Medial).

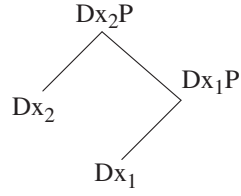


Figure 25. S2 (Medial) => *ce*

Again, even though L1 (*ce*) is not a perfect fit for S2, it is a licit match by the Superset Principle and the only available entry in the lexicon in any case. S2 is therefore spelled out as *ce* in French, as seen in Figure 25.

The next S-structure which the syntax can build is [Dx_3P [Dx_2P [Dx_1P]]], with the meaning 'far from S and H' (Distal).

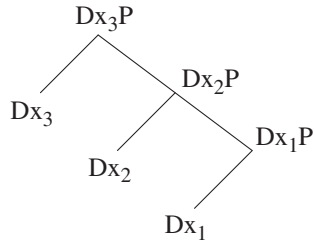


Figure 26. S3 (Distal) => *ce*

L1 (*ce*) is a perfect fit for S3 and thus S3 spells out as *ce* in French, as seen in Figure 26. In sum, total syncretism (Dist/Med/Prox) is modeled in nanosyntax as a single available lexical entry which can spell out all three S-trees by the Superset Principle (with no competition arising from the Elsewhere Principle).

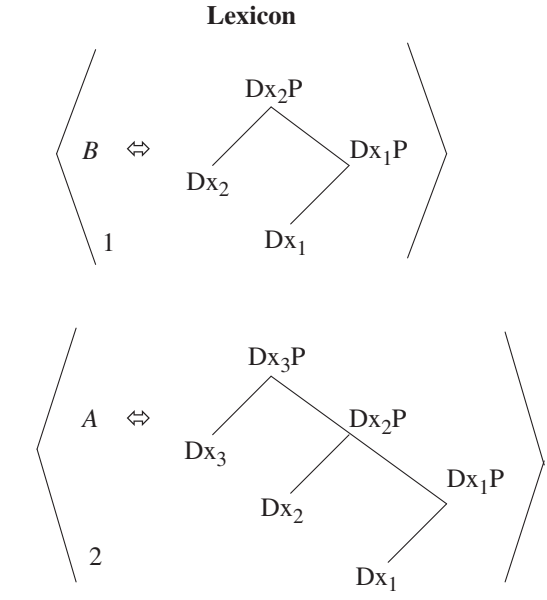
5.5. *The absence of Dist = Prox (≠ Med)*

Finally we can, on principled grounds, account for why the unattested syncretism Dist/Prox (vs. a distinct Med) does not arise. The Dist/Prox syncretism is a case of the *ABA pattern, and, following Caha (2009: §2.3), the *ABA pattern is excluded due to the interaction between the Superset Principle and the Elsewhere Principle. In (56) we illustrate what the *ABA pattern would mean for spatial deixis.

(56) *ABA would mean:
[Dx_3P [Dx_2P [Dx_3P]]] => *A* 'far from S and H'
[Dx_2P [Dx_1P]] => *B* 'close to H'
[Dx_1P] => *A* 'close to S'

That is to say, the Distal structure ([Dx_3P [Dx_2P [Dx_1P]]]) and the Proximal structure (Dx_1P) would both spell out as *A*, with the (decidedly odd) meaning 'far from S and H *or* close to S', while the Medial structure ([Dx_2P [Dx_1P]]) spells out as *B* 'close to H'.

Now, an attempt at deriving such a pattern would have to go by the following logic. First of all, the L-structure for *A* would need to correspond to [Dx_3P [Dx_2P [Dx_3P]]], since it needs to spell out the Distal structure. By the Superset Principle, moreover, it could also spell out Dx_1P. Second, the L-structure for *B* would correspond to [Dx_2P [Dx_1P]], making it a perfect fit for the Medial structure. This situation, however, will not produce an ABA pattern, as sketched in Figure 27.



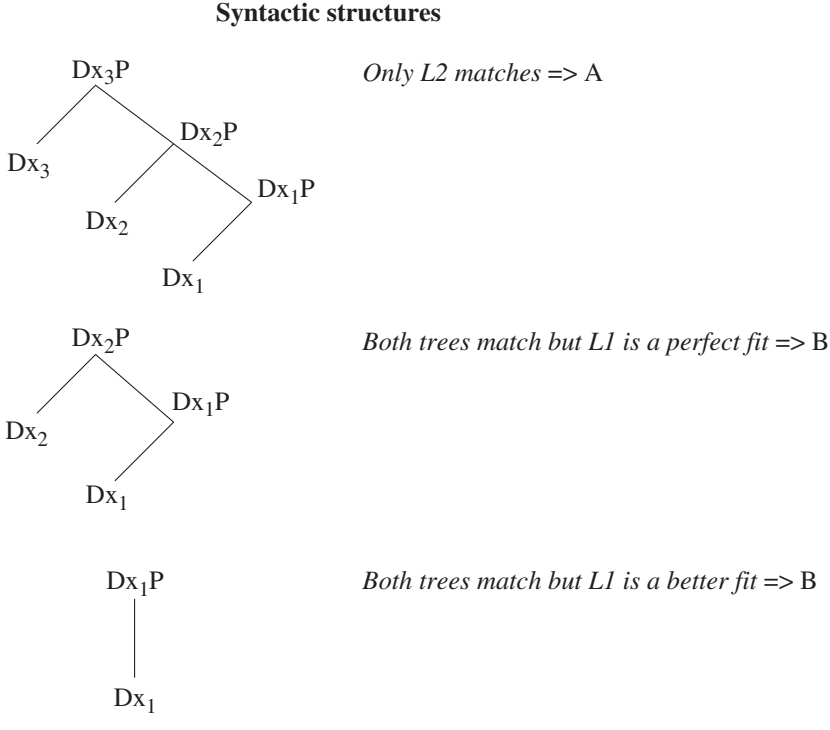


Figure 27. Failure to produce ABA pattern

In other words the ABA pattern Dist/Prox vs. Med is ruled out by nanosyntactic principles of spellout.

5.6. *Morphological containment*

Nanosyntax also provides a straightforward way of understanding the phenomenon of morphological containment. Containment can be thought of as a case of two L-structures cooperating to spell out a single S-structure. Take the case of morphological containment seen in Wargamay above, repeated here as (57).

(57) Wargamay [Australian] (Dixon 1981:44–45)
  a. DEM.PRO/ADN
    ɲuŋga ‘this one (near speaker)’
    ɲuŋgaɠi ‘that one (distant from speaker)’
  b. CONTAINMENT
    [[Prox] Dist/Med]
    [[ɲuŋga]-ɠi]

The item *ɲuŋgaɠi* is bimorphemic, composed of the Prox morpheme *ɲuŋga* plus the Dist/Med morpheme *-ɠi*: [$_{\text{Dist/Med}}$ [$_{\text{Prox}}$ ɲuŋga]-ɠi]. To model the fact that the Dist/Med form *ɲuŋga-ɠi* is a cooperative effort between two morphemes, we can propose that the two morphemes are responsible for complementary parts of the functional sequence, so that both ingredients are needed in certain structures (in this case Distal and Medial structures). This is sketched in Figure 28.

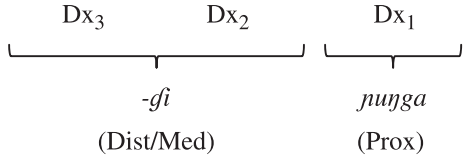


Figure 28. Containment

The lexical entries for *ɲuŋga* and *-ɠi* are given in more detail in Figure 29.

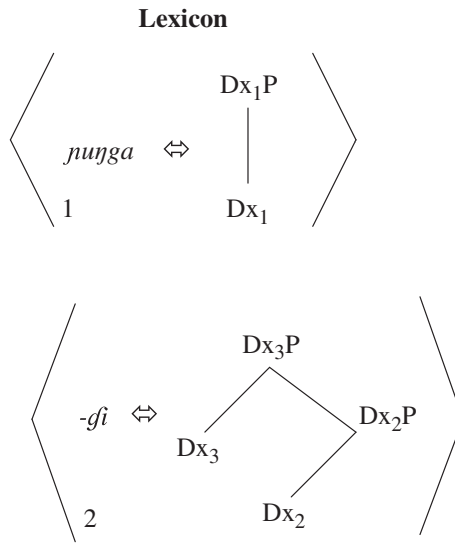


Figure 29. Wargamay's lexicon

Now let us take each S-structure in turn and see how the lexicon in Figure 29 lexicalizes them.

The first S-structure is Dx_1P, with the meaning 'close to S' (Proximal).

Figure 30. S1 (Proximal) => *ɲuŋga*

L1 (*ɲuŋga*) is the only suitable match for S1, since L2 (*-ɠi*) does not even contain Dx_1P in its L-structure. Thus S1 is spelled out as *ɲuŋga* in Wargamay, as seen in Figure 30.

The next S-structure is [Dx_2P [Dx_1P]], with the meaning 'close to H' (Medial).

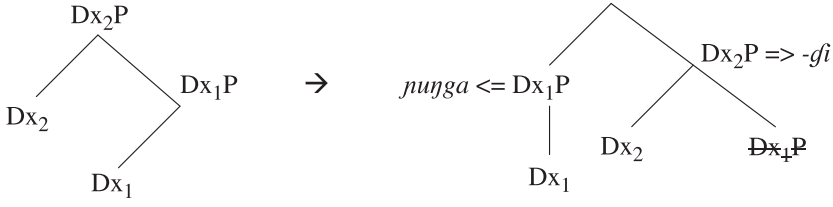


Figure 31. S2 (Medial)

This structure cannot be lexicalized by a single lexical entry. Thus L1 (*ɲuŋga*) must spell out the lower part of S2, namely Dx_1P, while L2 (*-ɠi*) lexicalizes the upper part of S2, namely Dx_2P. Though we will not go into details here, we assume that there is spellout-driven movement (e.g. Starke 2011ab, 2013, Caha 2009, 2010) of Dx_1P to the left of Dx_2P in order to make Dx_1P and Dx_2P independent constituents, as seen in Figure 31. Note also that L2's matching of Dx_2P requires an application of the Superset Principle (i.e. L2's $[Dx_3P\ [Dx_2P]]$ is a superset of S2's Dx_2P). S2 therefore spells out as *ɲuŋga-ɠi* in Wargamay.

The final S-structure is $[Dx_3P\ [Dx_2P\ [Dx_1P]]]$, with the meaning 'far from S and H' (Distal).

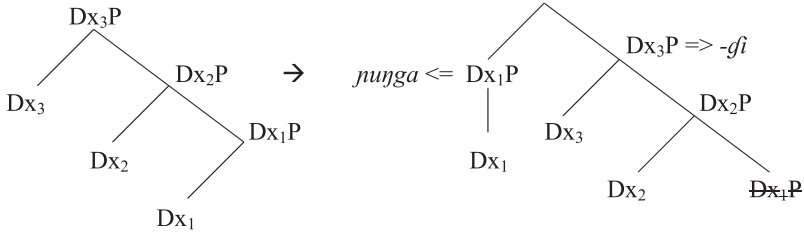


Figure 32. S3 (Distal)

Once again the structure cannot be lexicalized by a single lexical entry. Thus L1 (*ɲuŋga*) must spell out the lower part of S3, namely Dx_1P, while L2 (*-ɠi*) lexicalizes the upper part of S2, namely $[Dx_3P\ [Dx_2P]]$. We assume that spellout-driven movement takes place to make Dx_1P and $[Dx_3P\ [Dx_2P]]$ independent constituents, giving the correct linear ordering of morphemes, i.e. *ɲuŋga-ɠi*, as seen in Figure 32.

6. Interrupting the sequence

In this section we will discuss some further issues that arise from the hierarchical organization of the features of spatial deixis we have elaborated in this paper. In particular, we will be concerned with some problematic data that do not at first glance fit into our system, and we will try to account for them. The following two issues will be addressed: (i) the availability of additional contrasts in the use of demonstratives, and (ii) the absence of expected semantic features within individual language systems. The latter problem also has implications for the formal system of nanosyntax, though this is not the place to delve into this.

Both complications in the system can be viewed as being the result of interruptions in the functional sequence. For the apparent enrichment of the system we propose that the sequence may be interrupted by the presence of a degree modifier associated with one layer of the sequence. This yields an additional reading within the paradigm. For what look like

impoverished systems we are led to propose that in the building of certain Distal structures the feature Dx_2 (Med) may be skipped.

6.1. *Degrees of distance: The use of modifiers*

6.1.1. *Remote*

At first sight, the English demonstrative system is a two-way opposition between *this* and *that*, where *this* is Proximal and *that* is syncretic between Medial and Distal. However, English is sometimes said to display a three-way system of distance contrasts instead, with the third item being the (archaic/dialectal) *thon(der)/yon(der)*. In dialects where this lexical item is not simply an alternative to *that*, *yonder* acts as a Remote demonstrative with the meaning 'at a distance but within view' (OED, P-Z: 3863).[21] Thus at first sight *yonder* would constitute a fourth reading and cannot be captured directly in our three-way system. When used as a Remote, we will indeed propose that this item falls outside the core Dist-Med-Prox system developed here, such that English does indeed have a two-way Prox vs. Dist/Med system, but it also has an extra Remote derived by additional means.

Our proposal is that the English Remote is derived from the Distal enriched with an adverbial modifier expressing degree, i.e. something like 'very', as illustrated in (58).

(58) $[_{AdvP}$ VERY $[Dx_3P\ [Dx_2P\ [Dx_1P]]]]$ = 'very far'

Our proposal finds some support from the observation that *thon(der)/yon(der)* differs from *this* and *that* by being morphologically more complex.[22] Historically speaking, DEM.PRO/ADN *yon* comes from Old English *geon* 'that' (< PGmc **jaino-*/*jeno-* < PIE root **i-*; Watkins 2000:35), cognate with German *jener*. In Old English we also see the closely related adverbial/prepositional forms *geond* and *(be)geondan* 'through(out), beyond', which ultimately contributed to the rise of forms like *yond*, *beyond*, and *yonder* (OED, P-Z: 3863). As the OED makes clear, there has been a great deal of fluctuation and interparadigmatic influences between these various forms throughout the history of English. We would like to point out, crucially, that in the Middle English period the item *yonder* gains a comparative-like reading, i.e. 'farther, more distant' (the OED cites Trevisa and Chaucer as the earliest attestations). This suggests that *yonder* had been synchronically reanalyzed as *yond*

[21] For instance, Henry (2010) notes that *thon(der)* in Belfast English is 'more distant' than *that*/*there*.

[22] Note that if *-at* is the genuine marker of deixis here, then the adverb VERY will be modifying only *-at* rather than the entire *th-at*. We can imagine that a more fleshed-out functional sequence will merge DP below the Dx domain, i.e. $[Dx_3P\ [Dx_2P\ [Dx_1P\ [\ldots DP]]]]$. Thus, with movement of DP *th-* to the left, the underlying structure of *thonder*/*yonder* is ultimately $[_{DP}$ *th-*$][_{AdvP}$ VERY $[_{DxP}$ far [DP]]]. Thanks to a reviewer for pointing this out.

'far, distant' plus the comparative suffix *-er*, yielding the meaning 'farther, more distant'.[23] We tentatively take the complex internal structure of Middle English *yonder* to be evidence for the hypothesis in (58), whereby an extra ingredient must be added to the core system in order to derive the Remote. It may be added here that the more common way for English to form a Remote is to add (*over*) *there*, as in *that* (*over*) *there*. This can be taken as suggestive evidence for our idea that the Remote is a modified Distal as well.

Other languages provide further evidence for a more morphologically complex Remote form. As discussed by Imai (2003:91–94) Spanish[24] and Thai are cases in point. Both languages can be described as two-way systems, with a Distal/Medial syncretic form used either for referents far from the S or close to the H vs. a Proximal for referents close to the S. Based on his elicitation experiments, Imai reports that Spanish and Thai deploy a third form that should be considered an 'emphatic remote' for "when emphasis on far distality or remoteness is required" (Imai 2001:93). In Spanish, this is the item *aquel*, which is clearly very different morphologically speaking from the *ese*/*este* pair.[25] In Thai, the emphatic remote is *nóon*, which also appears to be structurally larger than Prox *ní* and Dist/Med *nán*, at least based on its vowel quantity ('iconic vowel lengthening' used in various languages to denote (extra) distance; Imai 2003:94, also §2.4.1.5).

(59) Spanish [IE] (Imai 2003:91–94)

Prox	este
Dist/Med	ese
Remote	aquel

(60) Thai [Tai-Kadai] (Imai 2003:91–94)

Prox	ní
Dist/Med	nán
Remote	nóon

We take the Remote forms *aquel* and *nóon* to have the structure in (58). We return to Spanish in section 6.1.3.

Recall that English can also form a Remote by adding the phrase (*over*) *there*, as in *that* (*over*) *there*. Crosslinguistically, adding an element, often an adverbial, to the Distal demonstrative is a common strategy for

[23] Also interesting is that the West Flemish Remote locative adverb *gunter*, cognate with English *yonder*, can be inflected in the superlative, i.e. *de gunsten*.

[24] For Spanish see also 6.1.3.

[25] In fact, Spanish *aquel* comes from the Latin reinforcer *accu* (a variant of *eccu* < *eccum* 'here!/look!') plus the demonstrative *ille* (Adams 2013: 466, 469). The forms *este* and *ese* do not derive from reinforced Latin forms.

encoding the Remote reading.[26] Ewe [Niger-Congo], for instance, has a Distal form *kem*. This item can be associated with an additional suffix *-i* to yield *kemi*, with the Remote 'yonder' reading. Furthermore, an adverb *ɖá* 'in the distance' can also be added, giving *kemí ɖá* 'that (yonder) in the distance' (www.let.leidenuniv.nl/verba-africana/ewe/c-ewe-language.htm). Warao, an isolate of South America, has a S-based system with Prox *tamaja* and Dist/Med *amaja* (based on Herrmann 2001). Herrmann (2001) points out that the language has a third item, the Remote *ote amaja* or *otamaja*, where *ote* means something like 'over there'. As before, the Remote forms are based on the Distal with an additional component.[27]

6.1.2. *Enriching S-based systems*

In section 2 we discussed the fact that there have been reports of complex, purely S-based systems. We pointed out in that section that more careful description is needed on the whole, since it may be that in the relevant languages, the H anchor has simply been overlooked. Nonetheless, it seems possible that such systems do exist, which means that we would need to account for S-based systems with morphological encodings of 'close to S' vs. 'medium distance from S' vs. 'far from S'. To account for such patterns we can again exploit the idea that the core system can be enriched with modifiers. We discuss some examples here.

Hdi has been said to have a three-way S-based system.

(61) Hdi [Afro-Asiatic] (Frajzyngier & Shay 2002:84)
ná 'proximate'
yá 'middle distance'
á 'remote'
"three degrees of distance with respect to the speaker" (Frajzyngier & Shay 2002:84)

If this is an accurate description, then an immediate concern is how to derive the 'middle distance from speaker' reading, which we will label as a (lower-case) medial, as opposed to the H-based Medial that we have been using so far. To capture the Hdi system, we can again deploy the strategy introduced to account for the Remote in section 6.1.1. Accordingly, we propose that rather than being an entirely independent entity, the Hdi medial *yá* is in fact a modified Proximal. By inserting a degree adverb like 'somewhat' right above ProxP, we create the reading

[26] Consider demonstrative reinforcers (Bernstein 1997), which are locative adverbs. See also Kayne (2005) and Leu (2007, 2008, 2015), who treat our domain of spatial deixis features as adverbial or reinforcer-like elements.

[27] Welsh also has a 'marginal' Remote with the form *acw* 'yonder', which in some dialects is amalgamated with the proximal to give *hwn acw* > *hwncw* 'that one over there' (Borsley, Tallerman & Willis 2007: 176). With our discussion of containment in section 5.6 in mind, we can assume that *acw* covers the span [VERY [Dx_3P [Dx_2P]]], and *hwn* covers [Dx_1P].

'somewhat close to S'. The resulting structures would be as in (62). We thus assume that the two proximal readings correspond to two different structures, one of which contains a modifier. We also propose that the Medial and Distal are syncretic, with *á* encoding 'close to H' (62c) as well as 'remote from S and H' (62d).

(62) a. Dx_1P => *ná* 'close to S'
b. [$_{AdvP}$ SOMEWHAT [Dx_1P]] => *yá* 'somewhat close to S'
c. [Dx_2P [Dx_1P]] => *á* 'close to H'
d. [Dx_3P [Dx_2P [Dx_1P]]] => *á* 'far from S and H'

The readings we have proposed for *á* are not explicitly mentioned by Frajzyngier & Shay (2002), so it remains to be seen if our hypothesis is accurate.[28]

6.1.3. *Four-way systems?*

In this paper we postulate that spatial deixis is essentially encoded by means of a three-way system. Some languages have been reported to have more than three items in their spatial-deictic systems, though these are rare in the first place (as implied by Diessel 1999:36, 40 and Imai 2003:171–173). Though we are not in principle opposed to the idea of adding features to our hierarchy (provided there is empirical evidence and that the syncretism and containment facts hold), we think our three-way system can be preserved in the face of these apparent counterexamples. Maintaining the system we have set up in this paper, as it stands, entails that any language with more than a three-way system must involve additional modifying elements such as adverbs.

Ainu has been reported to have the four-way system seen in (63).

(63) Ainu [isolate] (Bugaeva 2008:46)
tan 'this: right in front of the speaker'
taan 'this: close to the speaker'
toan 'that: close to the addressee'
toon 'that: far from both the speaker and the addressee'

Leaving aside the item *tan*, Ainu's system is a perfectly transparent Dist (*toon*) vs. Med (*toan*) vs. Prox (*taan*) system, parallel to the languages in (6–21) above, but it also has the additional item *tan* which is like a modified Proximal encoding '*right* in front of the speaker' (our italics).

To derive the reading of the exceptional item *tan* without moving into a four-way system, there are two options. The first is that advocated

[28] We note that Hdi also presents a potential counterexample to our containment generalization, since *á* can potentially be analyzed as being contained within *yá* and *ná*. For now we are forced to say that *yá* and *ná* are monomorphemic units rather than decomposable as *y-á* and *n-á*.

already: we can encode the specificity of *tan* by inserting a degree modifier like 'very' above Prox, resulting in a reading like 'very close to S'. Observe, though, that a disadvantage of this move is that the item *tan* (at least at first glance) looks less complex than the base form *taan*. The second option addresses this shortcoming: it reinterprets the shorter form *tan* as the base form of the Proximal and it takes *taan* as derived from *tan*. In this scenario *taan* would actually be assigned the reading 'somewhat close to S', as in (62b) above.[29]

Though obviously more careful work on languages like Hdi and Ainu is needed, our main point here is that various degrees of distance from the S anchor can be derived using a basic three-way system system (though we also remain convinced that such systems are in fact probably less common than usually assumed).

Additional language types that raise further complications for our system are pointed out by Imai (2003). Specifically, languages can be 'dual-anchored' or 'addressee-isolated'. We return to the latter in section 6.2. Here we focus on so-called dual-anchored systems such as Japanese and Spanish. In such languages, the Medial 'close to H' item can also be used to indicate medium distance from the S. For instance, in addition to being syncretic between the regular Medial 'close to H' and the Distal 'far from S and H', Spanish *ese* also conveys a S-based medial '*somewhat* close to S'. Thus *ese* conveys three readings, and *este* has the Proximal 'close to S' reading, yielding a four-way system.

The fact that Spanish *ese* can express 'somewhat close to S', 'close to H', and 'far from S and H' can again be captured by means of the modifier approach presented in the previous sections. More specifically, we propose that the S-based medial 'somewhat close to S' be derived by means of a modifier (see Figure 33). Since *ese* also expresses Medial 'close to H' and Distal 'far from S and H', we will claim that *ese* encodes a syncretism of all these layers. By allowing for an adverbial modifier to convey the S-based medial reading 'somewhat close to S', the syncretism postulated respects the nanosyntactic adjacency condition on syncretism.

[29] Here and elsewhere a template of some kind (e.g. *t-V-n*) seems to be involved for the demonstrative system. See Caha & Scheer (2008) for some discussion of Czech templatic morphology.

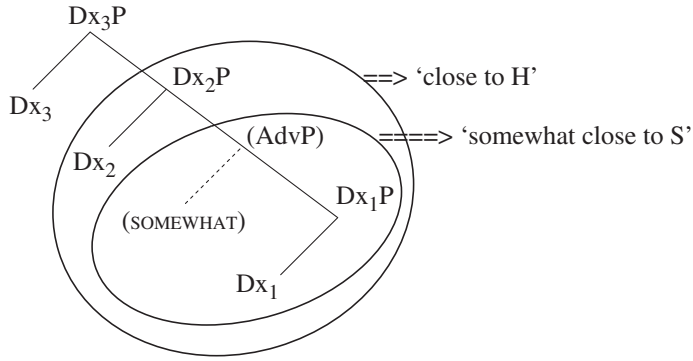


Figure 33. The two medial readings in Spanish

Table 15. Syncretism in Spanish

Dist	Med	(SOMEWHAT)	Prox
ese			*este*

Table 15 is meant to show that *ese* covers the S-based medial '*somewhat* close to S', the Medial 'close to H', and also the Distal 'far from S and H' readings. *Este* covers only the Proximal 'close to S' reading.

6.1.4. *Summary: Enriching by modification*

In this section we have outlined a tentative account for spatial-deictic systems that do not at first glance fit neatly into the three-way system developed in sections 1 through 4. We propose that what look like richer systems can be derived by enriching the simple three-way system and that this enrichment is achieved by the merger of additional modifier projections into the functional sequence, which allows us to derive readings like '*very* far', '*somewhat* close', or '*very* close'. We would like to stress, however, that this strategy should be invoked only when fully motivated by the facts. In future work we hope to elucidate what kinds of restrictions there are on modifier insertion in the fseq of spatial deixis.

In the next section we look at a different situation in which, rather than being enriched, the structure seems to be impoverished.

6.2. *Gaps in the functional sequence*

So far we have elaborated a three-way system of spatial deixis with S and H anchors. However, some languages have been reported to have,

in Imai's (2003) terms, an 'addressee-isolated' system, Korean and Mundari [Austro-Asiatic] being cases in point (Imai 2003:88–91). In 'addressee-isolated' systems, the Medial form is only ever used if there is a pragmatically relevant H present. In other words, in the absence of a H that is somehow salient or important to the S, there seems to be a switch from a three-way system to a two-way system. While we proposed that the enriched systems discussed in section 6.1 be accounted for by adding modifiers to the base system, these two-way systems, on the other hand, could be said to be 'impoverished'. It would appear that such systems can be accounted for if we allow for gaps in the functional sequence.[30] It is clear that postulating the possibility of such structural gaps in the hierarchy will of course have far-reaching consequences for the general system and the consequences of this must be examined further.

Take the example of Korean. Medial *ku* 'close to H' is used only when distance to the H is relevant. Otherwise, the system is a two-way one, with only *i* 'close to S' vs. *ce* 'far from S'. One way of handling these oppositions is to propose that in the absence of a pragmatically relevant H, Korean allows for the gapping of Dx_2 in the fseq. What we mean by this is that the Dx_2 layer can be skipped when the spatial-deictic fseq is being built. That is to say, in such cases any reference to H would be absent. Consider the lexical structures sketched in (64), where the S-structure for *ce* (with Dx_2P is in parentheses) is meant to represent the two possible structures below it, one of which has a Dx_2P gap.

(64) < *i* ⇔ [Dx_1P] > 'close to S'
< *ku* ⇔ [Dx_2P [Dx_1P]] > 'close to H'
< *ce* ⇔ [Dx_3P (Dx_2P) [Dx_1P]] >
- **[Dx_3P ___ [Dx_1P]] 'far from S'**
- [Dx_3P [Dx_2P [Dx_1P]]] 'far from S and H'

We propose that in the presence of a pragmatically relevant H, Dx_2 is always generated, yielding a typical three-way system: *i* 'close to S' (Dx_1P) vs. *ku* 'close to H' ([Dx_2P [Dx_1P]]) vs. *ce* 'far from S and H' ([Dx_3P [Dx_2P [Dx_1P]]]). In the absence of H, however, Dx_2 can be gapped, yielding a two-way system: *i* 'close to S' (Dx_1P) vs. *ce* 'far from S' ([Dx_3P __ [Dx_1P]]). In the latter case, that is, Dx_3 may project immediately above Dx_1P, with consequences for interpretation.

Postulating such a gap would allow us to account for the fact that Korean can switch into a purely S-based system of 'close to S' vs. 'far

[30] The status of the possibility of there being gaps in the fseq is controversial in nanosyntax (see Caha 2009: §9.3, 2013 and Starke 2011c, 2013). We will not go into this theoretical issue here, but we note that if gaps are admitted in principle then the encoding of spatial deixis appears to be an appropriate candidate for a 'gappable' domain, as this is understood in Starke (2011c).

from S' (not 'far from S *and H*'). It stands to reason that in a structure like [Dx_3P __ [Dx_1P]], the absence of Dx_2 entails the absence of the H as an anchor. In languages where Dx_3 is always built on top of both Dx_1 (the basic S ingredient) and Dx_2 (the basic H ingredient), the Distal will mean 'far from S and H'. In languages like Korean, however, where Dx_3 can be added right on top of Dx_1, Distal can mean 'far from S (only)'.

In Korean the Distal *ce* is syncretic, spelling out both the gapped structure and the non-gapped structure. Interestingly, Hausa appears to be a language that shows an overt morphological distinction between these two structures. As seen in (65), locative adverbs in Hausa fall into two separate systems. On the one hand, there is a S-based contrast between proximal *nân* and distal *can*; on the other hand, it is also possible for locative adverbs to "be specified along the person dimension" (Abdoulaye 2008:10), giving rise to a three-way system of Proximal *nân* vs. Medial *nan* vs. Distal *cân*.

(65) Hausa [Afro-Asiatic] (Abdoulaye 2008:6–11)
DEM.ADV
nân 'speaker-proximal'
can 'speaker-distal'
═══
nân 'position of the speaker'
nan 'position of the hearer'
cân 'position of a third party away from both speaker and hearer'

Both systems share the Proximal form *nân*. From there the systems diverge, in that *can* is a 'general distal', while *nan* and *cân* are participant-based. What is interesting for our purposes is that Abdoulaye points out a subtle semantic difference arising when the 'hearer-centered' (i.e. Medial) *nan* (66a) is replaced by the 'general distal' *can* (66b).

(66) Abdoulaye (2008:10, his (14))
a. RìKee shi nan!
hold *3.M.SG* *there.2*
'Keep it there!'
b. RìKee shi can!
hold *3.M.SG* *there.G[eneral]*
'Keep it there!'

Abdoulaye explains that in (66a) the use of the H-based item *nan* means that the S intends to return to the object held by the H, while in (66b) this is not the case. We interpret this to mean that *nan* encodes a location for which the H is pragmatically relevant, since in (66a) the H is in charge of an object that the S will return to. Thus *nan* is a true Medial, spelling out the structure [Dx_2P [Dx_1P]]. The item *can*, on the other hand, encodes a location for which the H is pragmatically irrelevant, since in (66b) the S does not intend to return to the H's position in order to retrieve the

object. Thus there is evidence that *can* spells out the gapped structure [Dx_3P __ [Dx_1P]]. This kind of distal contrasts with the 'true' Distal *cân*, which, as mentioned in (65), refers to the 'position of a third party away from both speaker and hearer'. This is shown in (67).

(67) Abdoulaye (2008:7, his (8c))
Lìttaafìi ya-nàa cân wuri-n Abdù.
book *3.M.SG-be* *there.3* *place-of* *Abdu*
'The book is there with Abdu.'

The item *cân*, then, spells out the non-gapped structure [Dx_3P [Dx_2P [Dx_1P]]].

In sum, the two types of distals which in Korean spell out as the same morpheme (*ce*) are spelled out as two separate morphemes (*can* and *cân*) in Hausa. A morphological distinction justifies positing distinct underlying structures (in this case one involving a gap).

7. Conclusion

In this paper we have developed an account of the expression of spatial deixis that postulates a system consisting of three core syntactico-semantic features in the domain of spatial deixis: Dx_1, Dx_2, and Dx_3, hierarchically organized as $Dx_3 > Dx_2 > Dx_1$. The features postulated are conceived of as unary and additive in the nanosyntactic sense. This three-way distinction is taken to be universal, and is supported by the crosslinguistic frequency of this kind of system.

Our proposal is supported by three sets of data: (i) evidence from a range of languages which display three distinct lexical items reflecting the three layers of structure; (ii) syncretisms in the paradigm of spatial deixis whereby two or even all three readings are expressed by a single lexical item; (iii) morphological containment (or nesting) relations.

Based on the available descriptive literature, we have identified morphemes encoding Proximal, Medial, and Distal readings. We have identified Med/Prox syncretisms, Dist/Med syncretisms, and Dist/Med/Prox syncretisms in the languages of the world. To the best of our knowledge there are no Prox/Dist syncretisms that exclude Med. In the spirit of the nanosyntactic approach developed by Caha (2009) and others, we take syncretisms to be possible only between structurally adjacent features. With respect to containment, both Medial and Distal forms can be seen to morphologically contain the Proximal form, providing support for the hypothesis that the feature Dx_1 is hierarchically lower than Dx_2 and Dx_3; we also see that the Distal can contain the Medial, showing that the feature Dx_2 is lower than Dx_3 in the hierarchy. Data from the morphological phenomenon of structural containment lead to the conclusion that Dx_1 is lower than Dx_2 and that Dx_2 is lower than Dx_3 in the hierarchy.

We adopted a nanosyntactic framework for analyzing the empirical patterns observed. Making use of nanosyntactic principles of spellout – the Superset Principle and the Elsewhere Principle – we showed that syncretism patterns and containment relations can be understood in terms of the structures which happen to be stored in each language's lexicon and how these structures match/spell out the structures which are (universally) built by the syntax.

Finally we discussed a strategy for dealing with some less common readings attested in a few languages which are not immediately accounted for by our system as developed here. The strategy involves 'gapping' in two different guises. The first involves interrupting the spatial-deictic fseq by the insertion of an adverb like 'very' or 'somewhat'. The second involves skipping a feature in the fseq, more specifically leaving out Dx_2 when building the Distal of an 'addressee-isolated' system like the one found in Korean or Hausa.

For an exhaustive account of the syntax and semantics of demonstratives, there are obviously additional questions that need to be addressed. We have so far only discussed exophoric demonstratives. Obviously, it would be important to see how our system carries over (if at all) to endophoric uses of demonstratives. In addition, it is well known that in many languages demonstratives grammaticalized into definite determiners, among other things (Greenberg 1978). Obviously, one would want to know how this definite article grammaticalization can be interpreted in terms of the functional hierarchy here. On a speculative note, we think that with respect to this grammaticalization there is most likely a connection with the neutral, fully syncretic Dist/Med/Prox demonstratives discussed in section 3.4. It is also well known that demonstratives are frequently used as pronouns (see Siewierska 2004). Similarly, one would like to know how the structure of pronouns relates to that of demonstratives, and where they are located in relation to each other in the fseq(s). For instance, pronouns may be seen to be morphologically contained by demonstratives (for instance, as is well known, French DEM.PRO contains strong pronouns: *ce-**lui***, *c-**elle***, *c-**eux***).

Appendix

Ainu	Bugaeva (2008)
Apurinã	Facundes (2000)
Arapesh	Aronoff (1994)
Basque	Hualde & de Urbina (2003)
Binukid	Imai (2003)
Bulgarian	Imai (2003)
Catalan	Imai (2003)

(continued)

Chinese	Yip & Rimmington (2004)
English	Eric Lander
	Craigie, Murray & Simpson (1971) (= OED)
	Henry (2010)
Epena Pedee	Harms (1994)
Evenki	Nedjalkov (1997)
Ewondo	Diessel (1999)
Fijian	Dixon (1988)
	Finegan (2013)
	Geraghty (1976)
	Ross (2007)
French	Frédérique Berthelot (p.c.)
	Lena Baunaz (p.c.)
Gooniyandi	McGregor (1990)
Gulf Arabic	Holes (1990)
Hausa	Abdoulaye (2008)
Hdi	Frajzyngier & Shay (2002)
Iraqw	Mous (1993)
Japanese	Diessel (1999)
Ket	Werner (1997)
Khasi	Diessel (1999)
Korean	Diessel (1999)
	Imai (2003)
Kiswahili	Okombo & Habwe (2007)
Klallam	Montler (2007)
Kwakw'ala	Bach (2006)
Latin	Adams (2013)
	Bennett (1918 [1895])
Limbu	Tumbahang (2007)
Lingala	Meeuwis & Stroeken (2012)
Macushi	Abbott (1991)
Ma'di	Blackings & Fabb (2003)
Nkore-Kiga	Taylor (1985)
Palauan	Janssen (2004)
Passamaquoddy	Ng (2002)
Pirahã	Everett (1986)
Semelai	Kruspe (2004)
Sinhala	Chandralal (2010)
Spanish	Adams (2013)
	Imai (2003)
Swedish	Eric Lander
Tahitian	Tryon (1970)
Thai	Imai (2003)
Tukang Besi	Donohue (1999)
Warao	Herrmann (2001)
Wargamay	Dixon (1981)

(continued)

Wari'	Everett & Kern (1997)
Welsh	Borsley, Tallerman & Willis (2007)
West Flemish	Liliane Haegeman
Yimas	Foley, W.A. 1991.

References

Abbott, M. 1991. Macushi. *Handbook of Amazonian languages, Vol*. 3, eds. D. C. Derbyshire & G. K. Pullum, 23–160. Berlin: De Gruyter.

Abdoulaye, M. L. 2008. Distance and visibility: Two systems in Hausa deixis. *Linguistik online* 36(4/08):3–19.

Adams, J. N. 2013. *Social variation and the Latin language*. Cambridge: Cambridge University Press.

Anderson, S. R. & Keenan, E. L. 1985. Deixis. *Language typology and syntactic description, Vol*. 3, ed. T. Shopen, 259–308. Cambridge: Cambridge University Press.

Aronoff, M. 1994. *Morphology by itself: Stems and inflectional classes*. Cambridge: MIT Press.

Bach, E. 2006. Paradigm regained: Deixis in northern Wakashan. *SOAS working papers in linguistics* 14: 267–281.

Bennett, C. E. 1918 [1895]. *New Latin grammar*, 3rd ed. Norwood: Norwood Press.

Bernstein, J. 1997. Demonstratives and reinforcers in Romance and Germanic languages. *Lingua* 102: 87–113.

Bhat, D. N. S. 2013. Third person pronouns and demonstratives. *The World Atlas of Language Structures*, eds. M. Dryer, M. Haspelmath. Leipzig: Max Planck Institute for Evolutionary Anthropology. Available online at http://wals.info. Accessed 2015–07–18.

Blackings, M. & Fabb, N. 2003. *A grammar of Ma'di*. Berlin: De Gruyter.

Bobaljik, J. D. 2007. On comparative suppletion. Ms., University of Connecticut.

Bobaljik, J. D. 2012. *Universals in comparative morphology: Suppletion, superlatives, and the structure of words*. Cambridge, MA: MIT Press.

Borsley, R. D., Tallerman, M. & Willis, D. 2007. *The syntax of Welsh*. Cambridge: Cambridge University Press.

Bugaeva, A. 2008. Reported discourse and logophoricity southern Hokkaido dialects of Ainu. *Gengo Kenkyu* 133: 31–75.

Bühler, K. 1934. *Sprachtheorie: Die Darstellungsfunktion der Sprache*. Jena: Fischer.

Caha, P. 2009. *The nanosyntax of case*. PhD dissertation, University of Tromsø.

Caha, P. 2010. The parameters of case marking and spell out driven movement. lingbuzz/001026.

Caha, P. 2013. Never mind the gap. Abstract submitted to Nanosyntax workshop, SLE 47. 11–14 September. Poznań, Poland.

Caha, P. & Scheer, T. 2008. The syntax and phonology of Czech templatic morphology. *Annual Workshop on Formal Approaches to Slavic Linguistics: The Stony Brook Meeting 2007*, eds. A. Antoneko, J. Bailyn, C. Bethin, 68–83. Ann Arbor: Michigan Slavic Publications.

Chandralal, D. 2010. *Sinhala*. Amsterdam: John Benjamins.

Cinque, G. & Rizzi, L. 2008. The cartography of syntactic structures. *Studies in Linguistics, University of Siena CISCL Working Papers 2*, ed. V. Moscati, 42–58. Cambridge, MA: MIT.

Craigie, W., Murray, J. & Simpson, J. (eds.). 1971. *The compact edition of the Oxford English Dictionary: Volume II, P–Z*. Oxford: Oxford University Press.
Cysouw, M. 2003. *The paradigmatic structure of person marking*. Oxford: Oxford University Press.
Déchaine, R. M. & Wiltschko, M. 2002. Decomposing pronouns. *Linguistic Inquiry* 33: 409–443.
Den Dikken, M. 2010. On the functional structure of locative and directional PPs. *The cartography of syntactic structures, Vol*. 6, eds. G. Cinque & L. Rizzi, 74–126. Oxford: Oxford University Press.
Diessel, H. 1999. *Demonstratives: Form, function, and grammaticalization*. Amsterdam: John Benjamins.
Dixon, R. M. W. 1981. Wargamay. *Handbook of Australian languages 2*, eds. R. Dixon & B. Blake, xxiv–144. Amsterdam: John Benjamins.
Dixon, R. M. W. 1988. *A grammar of Boumaa Fijian*. Chicago & London: University of Chicago Press.
Donohue, M. 1999. *A grammar of Tukang Besi*. Berlin: De Gruyter.
Dryer, M. S. & Haspelmath, M. (eds.). 2013. *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. Available online at http://wals.info. Accessed 2015-03-06.
Everett, D. L. 1986. Pirahã. *Handbook of Amazonian languages, Vol*. 1, eds. D. C. Derbyshire & G. K. Pullum, 200–326. Berlin: De Gruyter.
Everett, D. L. & Kern, B. 1997. *Wari': The Pacaas Novos language of western Brazil*. London & New York: Routledge.
Fábregas, A. 2009. An argument for phrasal spell-out: Indefinites and interrogatives in Spanish. *Nordlyd: Tromsø working papers on language and linguistics 36*, eds. P. Svenonius, G. Ramchand, M. Starke & T. Taraldsen, 129–168. University of Tromsø: Septentrio Academic Publishing.
Facundes, S.D.S. 2000. *The language of the Apurinã people of Brazil (Maipure/Arawak)*. PhD dissertation, SUNY.
Fillmore, C. J. 1971. *Deixis lectures* (Santa Cruz). Available online at www-personal.umich.edu/~jlawler/Deixis.html.
Fillmore, C. J. 1982. Towards a descriptive framework for spatial deixis. *Speech, place, and action*, ed. R. J. Jarvella & A. M. Zwicky, 31–59. Chichester: John Wiley.
Fillmore, C. J. 1997. *Lectures on deixis*. Stanford: CSLI Publications.
Finegan, E. 2013. *Language: Its structure and use*, 7th ed. Stamford: Cencage Learning.
Foley, W. A. 1991. *The Yimas language of New Guinea*. Stanford: Stanford University Press.
Fortis, J. M. & Fagard, B. 2010. *Space and language*, *Part V: Deixis*. Leipzig Summer School in Typology. Available online at htl.linguist.univ-paris-diderot.fr/fortis/leipzig/5.DEIXIS.pdf.
Frajzyngier, Z. & Shay, E. 2002. *A grammar of Hdi*. Berlin: De Gruyter.
Geraghty, P. 1976. Fijian prepositions. *Journal of the Polynesian Society* 85(4): 507–520.
Greenberg, J. H. 1978. How does a language acquire gender markers. *Universals of human language, Vol*. 3, eds. J. Greenberg, C. A. Ferguson, & E. A. Moravcsik, 47–82. Stanford: Stanford University Press.
Halle, M. 1996. Distributed Morphology: Impoverishment and fission. *Research in Afroasiatic grammar: Papers from the Third Conference on Afroasiatic Languages, Sophia Antipolis France*, eds. J. Lecarme, J. Lowenstein, & U. Shlonsky, 125–150. Amsterdam & Philadelphia: John Benjamins.
Harbour, D. Forthcoming. *Impossible Persons*. Cambridge, MA: MIT Press.

Harley, H. & Ritter, E. 2002. Person and number in pronouns: A feature-geometric analysis. *Language* 78(3): 482–526.
Harms, P. L. 1994. *Epena Pedee Syntax*. Dallas: SIL & University of Texas at Arlington.
Henry, A. 2010. Demonstratives in Belfast English: Microvariation and externalization. LAGB. September 1–4. Leeds.
Herrmann, S. 2001. Warao demonstratives. Ms., University of Tübingen.
Himmelmann, N. 1997. *Deiktikon, Artikel, Nominalphrase: Zur Emergenz syntaktischer Struktur*. Tübingen: Max Niemeyer.
Himmelmann, N. 2001. Articles. *Language typology and language universals*, eds. M. Haspelmath, E. König, W. Oesterreicher, W. Raible, 831–841. Berlin: De Gruyter.
Holes, C. 1990. *Gulf Arabic*. London & New York: Routledge.
Hualde, J. I. & de Urbina, J. O. 2003. *A grammar of Basque*. Berlin: Walter de Gruyter.
Imai, S. 2003. *Spatial deixis*. PhD dissertation, SUNY.
Janssen, T. 2004. Deixis and reference. *Morphology: An international handbook on inflection and word-formation, Vol*. 2, eds. G. E. Booij, C. Lehmann & J. Mugdan, 983–997. Berlin: De Gruyter.
Kayne, R. 1984. *Connectedness and binary branching*. Dordrecht: Foris.
Kayne, R. 1994. *The antisymmetry of syntax*. Cambridge, MA: MIT Press.
Kayne, R. 2005. *Movement and silence*. Oxford & New York: Oxford University Press.
Kayne, R. & Pollock, J. Y. 2010. Notes on French and English demonstratives. *Structure preserved: Studies in syntax for Jan Koster*, eds. J. W. Zwart & M. de Vries, 215–228. Amsterdam: John Benjamins.
Kruspe, N. 2004. *A grammar of Semelai*. Cambridge: Cambridge University Press.
Leu, T. 2007. These *HERE* demonstratives. *U.Penn working papers in linguistics*, 13.1:141–154.
Leu, T. 2008. *The Internal Syntax of Determiners* (GAGL 47). PhD thesis, NYU.
Leu, T. 2015. *The Architecture of Determiners*. New York: Oxford University Press.
Levinson, S. C. 1983. *Pragmatics*. Cambridge: Cambridge University Press.
Lundquist, B. 2008. *Nominalizations and participles in Swedish*. PhD dissertation, University of Tromsø.
Lyons, J. 1977. *Semantics*. Cambridge: Cambridge University Press.
McGregor, W. 1990. *A functional grammar of Gooniyandi*. John Benjamins.
Meeuwis, M. & Stroeken, K. 2012. Non-situational functions of demonstrative noun phrases in Lingala (Bantu). *Pragmatics* 22: 147–166.
Montler, T. 2007. Klallam demonstratives. *University of Columbia working papers in linguistics* 20: 409–425.
Mous, M. 1993. *A grammar of Iraqw*. Hamburg: Helmut Buske Verlag.
Muriungi, P. 2008. *Phrasal movement inside Bantu verbs: Deriving affix scope and order in Kĩîtharaka*. PhD dissertation, University of Tromsø.
Nedjalkov, I. 1997. *Evenki*. London & New York: Routledge.
Ng, E.C. 2002. *Demonstrative words in the Algonquian language Passamaquoddy: A descriptive and grammaticalization analysis*. Ph.D. Thesis, State University of New York.
Okombo, D. O. & Habwe, J. H. 2007. Pragmatic strategies in the use of Kiswahili demonstratives. *Swahili Forum* 14: 81–88.
Pantcheva, M. 2011. *Decomposing path: The nanosyntax of directional expressions*. PhD dissertation, University of Tromsø.

Ramchand, G. 2008. *Verb meaning and the lexicon*. Cambridge: Cambridge University Press.
Rauh, G. 1983. Aspects of deixis. *Essays on deixis*, ed. G. Rauh, 6–60. Tübingen: Niemeyer.
Ross, M. 2007. Talking about space: Terms of location and direction. *The lexicon of Proto Oceanic: The culture and environment of ancestral Oceanic society, 2. The physical environment*, eds. M. Ross, A. Pawley, M. Osmond, 229–294. Canberra: ANU E Press.
Siewierska, A. 2004. *Person*. Cambridge: Cambridge University Press.
Starke, M. 2009. Nanosyntax: A short primer to a new approach to language. *Nordlyd: Tromsø working papers on language and linguistics 36*, ed. P. Svenonius, G. Ramchand, M. Starke, T. Taraldsen, 1–6. University of Tromsø: Septentrio Academic Publishing.
Starke, M. 2011a. Towards an elegant solution to language variation: Variation reduces to the size of lexically stored trees. LingBuzz/001183.
Starke, M. 2011b. Course on nanosyntax. November 7–10, 2011. Ghent University.
Starke, M. 2011c. Nanoseminar 2011 (slides for 30/11). University of Tromsø. Available online at michal.auf.net/teach/2011–09_nano/.
Starke, M. 2013. Auxiliaries and structural gaps: Current issues in Nanosyntax. Lecture series presented at CRISSP. Hogeschool-Universiteit Brussel.
Svenonius, P. 2010. Spatial prepositions in English. *The cartography of syntactic structures, Vol.* 6, eds. G. Cinque & L. Rizzi, 127–160. Oxford: Oxford University Press.
Taraldsen, T. 2009. The nanosyntax of Nguni noun class prefixes and concords. Lingbuzz/000876.
Taylor, C. V. 1985. *Nkore-Kiga*. London: Croom Helm.
Tryon, D. T. 1970. *Conversational Tahitian*. Berkeley & L.A.: University of California Press.
Tumbahang, G. B. 2007. *A descriptive grammar of Chhatthare Limbu*. PhD dissertation, Social Inclusion Research Fund/SNV Nepal.
Vanden Wyngaerd, G. 2014. The feature structure of pronouns and the ABA-diagnostic. Nanosyntax workshop, SLE 47. 11–14 September. Poznań, Poland.
Vangsnes, Ø. 2013. Syncretism and functional expansion in Germanic wh-expressions. *Language Sciences* 36: 47–65.
Watkins, C. (ed.). 2000. *The American Heritage dictionary of Indo-European roots*, 2nd ed. Boston & New York: Houghton Mifflin.
Werner, H. 1997. *Die ketische Sprache*. Wiesbaden: Otto Harrassowitz.
Yip, P. C. & Rimmington, D. 2004. *Chinese: A comprehensive grammar*. London & New York: Routledge.

Received December 3, 2015
Accepted July 15, 2016

Eric Lander and Liliane Haegeman
Ghent University
Department of Linguistics (English)
Blandijnberg 2
9000 Ghent
Belgium
jet.lander@gmail.com,
liliane.haegeman@ugent.be