

Mapping Spatial PPs: an introduction

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In both the generative and nongenerative literature, recent years have seen an impressive growth in the number of studies on prepositional phrases that express spatial relations. The present volume contributes to that discussion by focusing on one particular aspect of their syntax that has remained relatively neglected: the fine grained articulation of their internal structure. As we shall see, the analyses presented here, in spite of their being based on rather different data and considerations, reach strikingly convergent conclusions.

In this introduction I discuss some of the main threads of these analyses and one general implication that seems to me particularly significant: that phrases composed of spatial prepositions, adverbs, particles, and DPs do not instantiate different structures but merely spell out different portions of one and the same articulated configuration (see in particular Svenonius's contribution and, for earlier insights in this direction, Kayne 2004).

1. Two types of prepositions

Among prepositions expressing spatial relations (and among prepositions in general), it is customary to distinguish between functional and lexical ones (a question to which we return). See, for example, Rizzi (1985, 157n4), Rauh (1993, 1995), Zwarts (1997), Koopman (2000, reprinted in this volume), Tseng (2000, chapter 1), Zwart (2005), and Den Dikken (this volume), for recent discussion. The former are generally taken to comprise basic (i.e., stative and directional) 'simple prepositions' such as 'at', 'to', 'from', and the latter 'complex prepositions' like 'in front of', 'under', 'behind', 'next to', 'inside', and so on. 2

In Persian, too, simple (stative and directional) prepositions differ from complex prepositions. The former must occur with a complement ((5)) and cannot take the Ezafe linker ((6)) (see Pantcheva 2006, 2008, for these and further differences):

(5) a. *tup oftad æz (Pantcheva 2006, 10)

ball fell from

b. tup oftad zir(*-e)

ball fell under-ezafe

'The ball fell down'

(6) a. *æz-e miz (Pantcheva 2006, 8)

from-ezafe table

b. zir(-e) miz

under-ezafe table

'under the table'

2. Complex prepositions

In this connection, some of the contributions to this volume converge in the postulation of a finer structure in which the complex preposition is actually a (phrasal) modifier of an unpronounced head noun PLACE (cf. Kayne 2004, 2007), selected by a (possibly covert) stative preposition, and where the complement of the complex preposition is in a possessor relation to that unpronounced head (see in particular the evidence from Modern Greek discussed in Terzi's contribution and that from Germanic discussed in Noonan's contribution). 5

Abstracting from certain differences, the structure that emerges from these proposals for a phrase like *under the table* is the one illustrated in (7):

down in here
here under the table
AT two inches above the ground
TO AT in a straight line behind the border
AT next to the house
TO AT south 25

6. Decomposing direction: Source, goal, path

In determining how much structure a complex PP has and how much of it is spelled out in specific cases, one should of course be careful not to conflate in a single structure portions that belong to different spatial constituents.

So far, I have simplified the picture by presenting directional PPs where in fact one should distinguish between PP source ([PPsource from [PPstat AT . . .]), PP goal ([PPgoal to [PPstat AT . . .]) and PP path ([PPpath across [PPstat ? . . .]), as these can co-occur in one and the same sentence:

(28) Every morning John used to go [to town] [from his village] [across the lake]

Even if their order is apparently not rigid (plausibly due to movements related to information structure), a number of studies have managed to determine their relative height. Both Nam (2004a, 2004b) and Schweikert (2005, chapter 3) conclude, on the basis of different sorts of evidence, that PP source is higher than PP goal, which in turn is higher than PP path:

(29) PP source PP goal PP path V

This is the typical preverbal order found in OV languages. In VO languages, where these PPs typically appear postverbally, the order is (in the unmarked case) the mirror image, due to successive roll-ups; cf. Cinque (2006, chapter 6). 26

Bearing this in mind, sequences such as *he jumped down from under the canopy* should presumably not lead one to postulate a distinct RelViewP above PP source but to recognize the simultaneous presence of a PP goal (*down*) and a PP source (*from under the canopy*).

7. The lexical/functional divide

I mentioned at the outset the widespread idea that (spatial) Ps come in two varieties, a functional and a lexical one (roughly corresponding to the distinction between simple [locative and directional] Ps and complex Ps), but no real consensus exists on the matter. While Riemsdijk (1990), Rauh (1993, 1995), and Zwarts (1995), among others, espouse this position, others have taken a different stand: Jackendoff (1973, 1977), Déchaine (2005), and Den Dikken (this volume) treat Ps on a par with traditional lexical categories like Ns, Vs, and As, whereas Grimshaw (1991) considers them as essentially functional, part of the extended projection of N.

Lack of semantic content cannot, it seems, be a necessary condition for functional status (pace Zwart 2005), at least if one considers tense and aspect morphemes, demonstratives, and quantifiers to be functional elements (Cinque 1999; Kayne 2005b). More revealing diagnostics are perhaps membership in a closed (vs. open) class of elements and impairment in agrammatic aphasia, which is traditionally believed to selectively affect grammatical, or functional, elements.

Concerning impairment in agrammatic aphasia, an in-depth study of the behavior of prepositions discussing previous works, presents interesting new data on the issue, and concludes that there exists “a great deal of evidence from aphasia that (all) prepositions pattern with f[unctional]-heads, not lexical categories, when language is focally damaged” (Froud 2001, 12). With regard to the closed vs. open class diagnostic, simple Ps clearly constitute a very small, closed class that ranges

from four ('at', 'to', 'from', 'across') to a few more, if orthogonal parameters like 'precise vs. vague location' are represented ('to' vs. 'toward', 'from a precise point' vs. 'from the general area of', etc.; see Van Riemsdijk and Huijbregts 2007, n. 10, and Tortora's article mentioned in note 4 this chapter). As for the class of complex Ps, which characterize the particular spatial relation between the 'figure' and the 'ground' (the marble is 'in front of'/'behind'/'under'/'on'/'in', etc., the box), even if they constitute a larger set, they, too, seem to constitute a closed class (Svenonius 2007, 64f). In fact, analyses of complex Ps in a number of languages explicitly claim that they constitute a closed class (see, for example, Ameka 2003, 55, on Ewe). 27

8. The contributions

Koopman's contribution, which, after circulating in unpublished form for some years, was published in Koopman (2000), is reprinted here because it constitutes the first elaborate cartographic analysis of the fine structure of PPs based on an in-depth study of Dutch and provides a background for many of the contributions to this volume.

In addition to postulating a PlaceP hosting stative prepositions inside a PathP hosting directional prepositions, her proposal offers evidence for a number of functional projections between the two and above PathP to make room for the movement of *er* pronouns, degree phrases, and other modifiers. Her analysis in terms of leftward movements and pied-piping of the inner constituents of the extended projection of PPs is the first attempt to account for the complex internal syntax of Dutch and German PPs, languages that feature prepositions, postpositions, and circumpositions.

Den Dikken's contribution directly builds on Koopman's. On the basis of a detailed empirical investigation of the syntax of adpositional phrases in Dutch, Den Dikken refines in various ways the structure and derivation of the lexical and extended functional projections of stative and directional Ps and draws a parallel with the lexical and functional structure of clauses and noun phrases. Among other things, his chapter lays out the base structure and syntactic derivation of locative (stative) and directional pre-, post-, and circumpositional phrases, discusses the restrictions on movement within and out of the (extended) projections of PLoc and PDir, sheds new light on the relationship between P and case, and analyzes the distribution of modifiers in adpositional phrases. Den Dikken also argues that functional categories in the extended prepositional domain are selectively present; in other words, that functional structure is called upon selectively and is not always present.

Svenonius's contribution brings evidence from English for an extended projection of PPs that looks very much like Koopman's and Den Dikken's structural hierarchy for the Dutch PP in the richness of the structure postulated. In addition to stative and directional Ps he argues for the presence of degree and measure phrases (i.e., deictic particles that introduce viewpoints) and are ordered below degree and measure phrases. Particularly interesting are his discussions of vector spaces and axial parts and their syntactic representation in the extended projection of the PP, the nonpronunciation of some of these categories in certain contexts, and the complication caused by the fact that some of these categories can be inserted in different positions of the extended projection of the PP.

Noonan's contribution also argues for a richly articulated structure in which a nominal head (Place) (cf. also Terzi's contribution to this volume) is embedded within an extended functional structure, which is itself embedded under an additional functional projection in the presence of directional prepositions. The author compares German (addressing the syntax and morphology of 'doubling' cases such as *Er sitzt auf dem Tisch dr auf* 'he sits on the table thereon'), English, and French, discussing in particular the position of the prepositions *zu*, *to*, and *à* within the proposed hierarchy. Prominent in her discussion are also parameters such as the pronunciation/nonpronunciation of material merged in specifier or head position in the hierarchy and the movement of constituents of the hierarchy.

Converging with Noonan's, **Terzi**'s contribution builds, on evidence from Greek, a convincing argument for the presence of a silent noun PLACE, which the complex locative preposition modifi

es (much like an adjective) and which is responsible for the nominal flavor of complex prepositions. This silent noun PLACE is the head of a DP complement selected by a functional P LOC. Her proposal, which corroborates Kayne's (2004) postulation of a silent noun PLACE with locative adverbials like *here* and *there* in English (see also Kayne 2007), has subsequently found interesting confirmation in Botwinik-Rotem's (2008) and Pantcheva's (2008) analyses of Hebrew and Persian complex locatives.

Aboh's contribution starts with a comparison of spatial expressions in West African languages and notes that, while Kwa languages have the ground DP between a directional/stative P and an (axial) part P (lit. **to/at** box **inside**), Chadic languages have the order directional/stative/ P > (axial) part P > ground DP (lit., **to/at** **inside** box). This order difference is insightfully related to the independent difference between Kwa and Chadic languages in the order of the possessum and the possessor by assuming the ground DP to be the possessor of the (axial) part P (a conclusion that converges with that reached by Terzi on the basis of Greek). He also argues that the kinds of displacements attested in the nominal and clausal domain (like predicate inversion) are also found in the prepositional domain, thus giving substance to the idea that the prepositional domain is parallel to the nominal and clausal domains (much as in Den Dikken's contribution to this volume).

Abraham's contribution, which relates to and complements Noonan's in many respects, is above all devoted to microvariation in the use of morphological case and the linear order of PPs in non-standard varieties of German, where morphological case plays an important, distinguishing role between semantic stativity and directionality of otherwise homonymic PPs. The gist of the chapter is that both prepositions and case need to be divided according to lexical (spatial) type and grammatical type. The former selects verbal predicates as a probe outside of vP, whereas the grammatical type is merged low and is V selected. This reverses the traditional idea that only verbs are valence probing.

Notes

I wish to thank Laura Brugè, Richard Kayne and Luigi Rizzi for very helpful comments on a previous draft of this introduction. The chapters gathered here were originally presented at a "Workshop on Prepositional Phrases" held at the University of Venice in November 4–5, 2005 within the framework of the cartography network funded by the Italian Ministry of Research, from 1997 to 2007. The paper by Koopman constitutes the republication of a classic study on the internal structure of Germanic spatial PPs, which some of the articles of this volume take as their point of departure.

1. See, for example, Šarič and Reindl (2001), Ayano (2001), Cuyckens, de Mulder, and Mortelmans (2005), Levinson and Wilkins (2006), Saint-Dizier (2006), Svenonius and Pantcheva (2006), Bašić et al. (2007), Ameka and Levinson (2007), Kurzon and Adler (2008), Asbury et al. (2008), Cuyckens et al. (forthcoming), and many of the contributions in Bloom et al. (1996), Senft (1997), Haumann and Schierholz (1997), Bennardo (2002), Feigenbaum and Kurzon (2002), Cuyckens and Radden (2002), Shay and Seibert (2003), van der Zee and Slack (2003), Hickmann and Robert (2006), and Djenar (2007).

2. In the description of certain languages the latter are also called 'nominal prepositions', 'spatial nominals' (see Ameka 2003,47), 'locative nouns', or 'relator/relational nouns', for reasons that will be clearer later.

3. Ameka (2003, section 3.1) reports the existence of a similar pattern in Hausa (Chadic). Also see the case of Tidore (Papuan) in van Staden (2007, section 5). Although stranding is possible in English with both types of prepositions and in Gbe only with the first type (stative and directional Ps) (see Ameka 2003, section 4.1; Aboh this volume, section 2), both English and Gbe distinguish between the two types of prepositions. See Svenonius's and Aboh's contributions to this volume.

4. The difference between the presence of *a* and its absence when both options are available is related in Tortora (2008) to the cross-linguistically frequent opposition between reference to a vague (or 'extended') place vs. reference to a precise (or 'nonextended') place. For the relevance of

such a distinction for spatial deictic adverbs in Italian and Bantu, see Cinque (1971) and Denny (1978), respectively.

5. Muriungi (2006, 26, 45) explicitly argues that ‘complex prepositions’ in Kĩtharaka are phrasal. Also see Abraham’s (this volume, section 1.2) arguments against categorizing them as (intransitive) prepositions. In certain languages, the head noun PLACE is actually pronounced. See (i) from Ainu (a language isolate of Japan), (ii) from Tairora (Papuan), and (iii) from the Tucanoan language Barasano:

(i) cise or ta ahun (Tamura 2000, 27)

house place at enter

‘he entered the house’

(ii) a. naabu-qi-ra bai-ro (Vincent 1973, 540)

house-in-place is-he

‘He is in the house (in the house place)’

b. bi-ra-qi-ra-ini bi-ro (Vincent 1973, 540)

there-place-in-place-to go-he

‘He went to in there (to the ‘there in’ place)’

(iii) s ɯ be-ri-hata-ro hubea-h ɯ y ā -a-ha ti (Jones and Jones 1991, 110)

green-PTCPL-box-S inside-place be-PRES-3 3INAN

‘It is inside the green box’

Bresnan (1994), Kayne (2004, 258n10), Rizzi and Shlonsky (2006, section 5) also suggest that the ‘subject’ PP of cases such as *Under the stars is a nice place to sleep* is part of a DP with a silent head PLACE. This case may, however, represent a different structure if, as Luigi Rizzi (personal communication) has observed, even “simple” prepositions can occur in this construction (*A casa non è il posto migliore per fumare* ‘At home is not the best place to smoke’). Here the silent PLACE head must be identified by a DP predicate that necessarily contains an overt instance of the noun ‘place’ ([PLACE (at home)] is not the best **place** to smoke/*is always pleasant) (cf. also Collins 2007, 28n24). The way in which the axes (front/back, left/right, etc.) are pragmatically determined depends, as often noted (Miller and Johnson-Laird 1976, Levinson 1996, Jackendoff 1996, section 1.8), on the particular *frame of reference* adopted, which may in part be culture specific. In Muna (Austronesian [van den Berg 1997, 211; Palmer 2002, 110n6]), nails, peanuts, leaves, and eggs have an “intrinsic” front and back, whereas in other languages only animals and a limited number of inanimate objects have one. In addition to this “intrinsic” frame of reference, other common frames of reference are the “relative” one (with regard to an observer) and the “absolute” one (geographical [north/south, east/west] or other). See in particular Levinson (1996), where it is also pointed out that the frames of reference are independent from the possible presence of a deictic center (*the dog was in front of the tree* whether with regard to Bill or me). See further discussion later.

6. For an interesting recent analysis that addresses some complications, see Rooryck and Vanden Wyngaerd (2007) and the discussion in Svenonius (2008, section 6.2)

7. Svenonius makes a further difference between “axial parts” (*front of in front of*) and “places” (*above / behind*, etc.), but I ignore this difference here.

8. The structure in (8) is actually only a fragment of the overall structure (see later refinements and references). To be part, as modifiers, of a DP headed by PLACE/‘place’ is plausibly what has induced many authors to characterize them as nouns. As modifiers of a noun they may themselves be nominal but need not be nouns. For arguments that (the analogues of) ‘front’, ‘top’, and so on in Amharic, Zina Kotoko, and Gungbe are not ordinary nouns when they are part of a ‘complex preposition’ despite their homophony with nouns, see Tremblay and Kabbaj (1990, section 2.1), Holmberg (2002, section 2), and Aboh (this volume, section 2.2.4). For an argument to the same effect based on cross-linguistic evidence, see Svenonius (2006).

9. That the “simple” preposition in (9) is a high stative preposition rather than a lower functional preposition pied-piped by NP Place in its movement to the left of AxPartP is suggested

by the fact that the other high directional prepositions ('to' and 'from') are also found in that position. Other languages with the same word order as Gungbe (in addition to other Gbe languages, to Amharic, Supyire, Songhay, and Likpe [Ameka 2003, 2007]) are Tidore (Papuan [van Staden 2007]), Chinese, and Saramaccan (Zhang 2002, 53).

If the phrase final complex prepositions 'under', 'beside', and so on of Gungbe and other such languages are not P heads but phrasal modifiers of a silent head PLACE, then their exceptionality

with regard to Greenberg's observation that postpositional languages are not verb initial disappears (cf. Kayne 2005b, 51).

10. See Aboh (this volume, section 3.1). In Zina Kotoko the order is possessum > possessor, while for Gungbe, Aboh analyzes cases like (9) as reflecting the order possessor > possessum (see his sections 2.2.1 and 3.1). Also see Zwart (2005): "Many languages express spatio-temporal relations in a possessive construction where the relational concept is expressed by a (grammaticalized) noun, such that for example *in the house* is rendered as *(the) inside (of) the house*. The relational noun may either precede or follow its complement, depending on the organization of possessive constructions" (692). Beyond Chadic (Holmberg 2002, Pawlak 2003, 246), the order seen in (10) is apparently also found in Nilo-Saharan (see Ameka 2003, 42, on Maa), Mayan (see Brown 2006, 243, on Tzeltal; Bohnemeyer and Stolz 2006, 286, on Yukatek Maya), and Austronesian (see Topping 1973, 116–19, on Chamorro; Zhang 2002, 54, on Indonesian; Boutin 2004, 6, on Bonggi).

11. Cf. Kayne (2004, section 4.4). On the "light" preposition following complex prepositions in Greek and Hebrew see Terzi (2008 and this volume), Botwinik-Rotem (2008), and Botwinik-Rotem and Terzi (2008).

12. Also see Kayne (2004, section 4.2.2) and Collins (2007), who argues that nonpronunciation of the preposition is contingent on movement of overt material to its Spec. An interesting argument for the presence of a covert directional preposition TO in English (when none is overt) is discussed in Stringer (2006, 64). He notes that if "as an empty category, it must be locally licensed by strict adjacency to the verb," it is understandable that, under clefting, the directional interpretation of *Zidane ran on the pitch* is lost (cf. *It was on the pitch that Zidane ran*).

In general, across languages, only the unmarked stative and directional Ps 'at' and 'to', not the marked source directional preposition 'from', can fail to be pronounced (*He put it TO under the bed* vs. *He lifted it * (from) under the bed*) (cf. Caponigro and Pearl 2008, 383f), though some languages also pronounce the goal directional preposition 'to'. See the case of Tokelauan (Austronesian) in (i) and that of Palula (Indo-Aryan) in (ii):

(i) hau **ki loto** fale (Sharpley 1976, 71)

come(sing.) **to inside** house

'Come inside'

(ii) [_ ukur-á **šii** _ **i the**] g hin-í g íia hín-a (Liljegren 2008, 173)

hut-OBL **inside to** take-CONV go.PFV.PL be.PRS-MASC.PL

'They took him inside the hut'

Later I provide some evidence that suggests that directional prepositions actually co-occur with stative, axial, and functional case-assigning prepositions (*He put it TO AT under P the bed* / *He lifted it from AT under P the bed*).

13. Also see the case of Palula in note 12 and that of Trumai (isolate, Brazil [Guirardello-Damian 2007]).

14. In *right from there*, *right* possibly modifies a nonpronounced *away*. See the contrast between *Chico raced right away from Mrs. Claypool* and **Chico raced away right from Mrs. Claypool*, noted in Hendrick (1976, 99). Similar considerations seem to hold for directional *to*: *Zeppo went (right) up (* right) to the attic* (Rooryck 1996, 230).

15. For simplicity, I abstract here and later on from complexities of the derivation. If the

functional P licensing *the table* in (14) is actually merged above it after this has raised higher (or even outside of PP Dir), attracting [from AT under] to its left (cf. Kayne 2002 , 2004), the structure would be somewhat different (but in ways that do not affect the points I am making here).

16. Unattested, apparently, is P Stat P Dir NP (with free morphemes). If English *into* is P Stat - P Dir -N (but see Noonan this volume), the reversal of the (bound) morphemes might be due to incorporation.

17. The presence in goal direction contexts of a single preposition (*Ion merge la magazin*, *Ion va a l negozio* ‘Ion is going to [the] store’), identical to the stative preposition (*Ion este la magazin*, *Ion è a l negozio* ‘Ion is at [the] store’), can be taken to mean that the goal direction preposition is unpronounced (cf. Svenonius’s idea mentioned in the main text preceding note 12, as well as Collins 2007). As we see in (15) through (19) or in (i)–(iii) in this note from three Austronesian languages, the goal direction preposition is often found to obligatorily co-occur with the stative preposition.

(i) baroesa l o n=jak u=bak=rumah=gopnyan (Acehnese [Durie 1985, 172])

the other day I=go to=at=house=he

‘The other day I went to his house’

(ii) Sia m-i-uhad [-in-- ə m-uhad] ti-di Kudat (Bonggi [Boutin 2004, 13])

3s.NOM ACY-REALIS-move from-at Kudat

‘ **She** moved from Kudat.’

(iii) mai he motu ko Tonga (Niuean [Massam 2006, 8])

from Loc island Pred Tonga

‘from Tonga’

18. Both Givón (1980 , 45) and Oberly (2004, section 5.6) analyze - *vee* and - *tuk*’ as postpositions.

Yanasha’ (Arawakan [Adelaar 2004 , 428]) and Shuar (Jivaroan [Adelaar 2004 , 440])

have N-LOC-ABL and N-LOC-ALL; various Australian languages have N-LOC-ABL (Blake 1977 , 55; Kracht 2002 , 183). Jero (Tibeto-Burman [Ogpenort 2005, 92]) has N-LOCSOURCE.

In Korean, as Son (2006 , 195n21) points out, when the object DP is animate, the stative morphemes (- *eykey* and - *hanthey*) *must* co-occur in directed motion contexts with the directional adposition-(*u*)*lo* (see *John-eykey-lo* [lit., ‘John-at-to (toward John)’]).

19. Also see Brugè and Su n er (2009) for the corresponding complex temporal prepositions ‘before’ and ‘after’. Apparently inconsistent with the hierarchy in (20) is a case like *two inches from the table*. The inconsistency, however, may be only apparent. *From* appears to be ambiguous between a directional preposition (merged under P Dir) and a vague axial part (projecting

vectors in some unspecified direction from the ground and as such merged under

AxPartP). Evidence for this is the fact that the two instances of *from* may actually co-occur (sandwiching the measure phrase: *The cable will be laid down from two inches from the table to the window*) and the fact that the *from* that appears after the measure phrase cannot co-occur with an axial part (* *It is two inches from under the table*).

20. Thinking of Kayne (2004), DeicticP could in fact be more complex, with another instance of PLACE and an unpronounced demonstrative: . . . [DeicticP [[there PLACE] i THAT t i] . . .

Overt evidence for such silent pieces are possibly the example (ii)b of note 5 in this chapter, from Tairora, and the following Korean example (i), cited in Svenonius (this volume), where a (distal) demonstrative preceding the axial part is interpreted as ‘there’:

(i) Ku sangca-nun oscang ce mit-ey twu-ess-ta

the box-TOP chest DIST bottom-LOC place-PAST-DECL

‘I put the box over there under the chest’

In Grebo (Kru, Niger-Congo), if no postposition is present, the use of deictic *ke* ‘there’ is

obligatory (de Melo 2005, 42f):

(i) Ne yi-da no ne ke London vs. (ii) Ne yi-da no ne (ke) kae y _
I see-PAST him AFFIRM there London I see-PAST him AFFIRM (there) house
in-front-of

'I saw him in London' 'I saw him in front of the house'

21. Svenonius (2007) notes that the deictic adverb can follow but not precede ModeDirP and observes (this volume, section 2.4), following Kayne (2005a, 75) that the possibility for it to follow an axial part 'preposition' (*under here*) is due to the raising of the axial preposition (plus the empty ground DP) across the deictic adverb (with the effect that the meaning is "here, under something" rather than "under this place").

22. Certain dialects of the Valtellina (northern Italy) also allow for the co-occurrence of the same two relative viewpoints seen in (25)b ('up/down' and 'in/out') in an order (with the deictic particle) that appears to be the mirror image of the English order. See *lafösù* , literally, 'there out up' [Prandi 2007 , section 3]. The fact that *lafösù* is spelled as a single word may suggest a derivation from an (English) order (*sù fö la*) through successive incorporations (of *la* to *fö* and of *lafö* to *sù*). Italian *laggiù fuori* (*dietro il fi enile*) , literally, 'there+down out (behind the barn)', may instead be thought of as deriving from the same (English) order through incorporation

of *l à* to *giù* crossing over *fuori*.

Dialects of the Valtellina also show that indication of the 'up/down' (relative) viewpoint is obligatory in all directional contexts: *Sum 'nd à c' *(s')a sür à na* 'I have gone *(up) to Surana'.

Similar facts are found in Ladin, Sursilvan, Monnese, and other dialects of the Alps, with interesting extensions of the 'in/out' relative point of view. See Pescarini (2004).

To judge from Abraham (this volume), Noonan (this volume) and Van Riemsdijk (2007), German "doubling or echo PPs" seem to confl ate the relative viewpoint projections and the deictic projection (toward/away from the speaker):

(i) Die Schnecke kroch auf das Dach hinauf/hinab/hinüber (Van Riemsdijk 2007, 267)

The snail crept on the roof up/down/across (away from the speaker)

'The snail crept up/down/across the roof'

23. In N e l e mwa, *up/down* can also have a different topographic reference ('up,' meaning 'inland'; 'down,' meaning 'seaward'). Also see the case of Tzeltal (Mayan), where the opposition 'uphill'/'downhill' provides an absolute system of coordinates (Brown and Levinson 1993).

24. In (27) we abstracted from the projection dominating PP *dir* , which introduces modifiers such as *right* (*away*) (see note 14) and from the projections hosting the movement of particles in certain languages (see Koopman's and Den Dikken's contributions to this volume).

A question that we did not address is what combinations of elements are possible in each language. For relevant preliminary observations on English and German, see Kayne (2005a, 68) and the contributions by Svenonius and Noonan in this volume. The variation appears extensive.

The kinds of extractions that such structure allows in each language (e.g., standard preposition stranding) are another potential source of variation that remains to be investigated.

Some observations appear in Hornstein and Weinberg (1981 , 60n9), Kayne (2005a, 68) and in the contributions by Noonan and Den Dikken in this volume.

25. As usual in analyses that strive to map out in detail the extended projection of a certain head, the question arises as to whether the entire structure is always projected, even when only part of it fi nds overt expression. Given the evidence from semantic interpretation seen earlier for the presence of certain unpronounced heads (and phrases) of the extended projection of spatial Ps, it is tempting to assume that the entire sequence of functional projections is indeed present, with default or unspecified values when unpronounced. For further general discussion of this controversial question, see Cinque (1999, chapter 6).

26. Also see the order Source prefix > Goal prefix in Chickasaw, cited by Nam (2004 a, section 2.2), after Munro (2000).
27. One can perhaps express an infinite number of configurations (e.g., ‘at the upper left corner of the table’, ‘on the tip of the mountain’, ‘in the first part of the train’), but these are run-of-the-mill P+DP constructions, not complex prepositions. Interestingly, Froud’s patient consistently made a distinction between phrases such as ‘in front of the house’ (impaired) and ‘in the front of the house’ (unimpaired) (see Froud 2001 , appendix A). Also see Lonzi, Luzzatti, and Vitolo (2006 , section 5).

References

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