

Into adpositions: new formal perspectives on the structure of the PP and its variation

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The last two decades have seen much attention paid to the structure of the adpositional phrase (PP) in theoretical morphosyntax. Indeed, since at least Koopman's (1993/2000) seminal work on the structure of the Dutch PP, drawing on previous ideas by Jackendoff (1983), Generative Grammar left behind the era in which adpositions were characterised only by negative categorial features (Chomsky 1970), or were treated solely at the level of argument structure (Jackendoff 1983, Hale & Keyser 1993, 2002, Baker 1996). Thus, nowadays, the PP, or rather the pP, is standardly considered a distinguished member of the class of functional hierarchies (Cinque & Rizzi 2010) and counts among the categories associated with an external argument introducing head (Svenonius 2003; although see seminal ideas in Koopman 1993, apud Baker 1996). On the semantic side, works such as Zwarts & Winter (2000) and Zwarts (2005) have provided accurate tools to handle the semantics of the most prominent class of adpositions, namely those of spatial meaning. Finally, with respect to cross-linguistic and cross-dialectal variation related to adpositions, one issue in particular has been extensively dealt with, namely the kind of variation claimed to be responsible for Talmy's (2000) well-known satellite-/verb-framed typology (see Acedo-Matellán & Mateu 2015 and Levin & Rappaport Hovav 2019 for recent overviews).

Nevertheless, there is still much to explore in relation to this poor little sister in the family of lexical categories. This volume aims to offer a window into some of the P-explorations that are currently underway by presenting papers that provide new insights, from a formal perspective, into the structure of the PP and how it varies cross-linguistically. Variation, in fact, informs the whole volume. Languages as distant from each other as Latin and Pazar Laz are investigated alongside microvariationist studies and studies probing the micro-differences among prepositions within a single language. Synchronic variation is considered side by side with diachronic variation. All the possible shapes in which adpositions may be encountered—prepositions, postpositions, circumpositions, and adpositional prefixes—are represented. In addition to detailed studies of particular languages, there are papers aiming to establish more big-picture generalisations as to the nature of adpositions. Finally, it is worth mentioning that all the papers in this volume incorporate new developments in the technical machinery that may facilitate greater understanding of the fine-grained structure of the PP, drawing on minimalism, lexical decomposition, and nanosyntax, and on the concept of roots and their dissociation from functional structure and the concomitant blurring of morphology and syntax.

In this introduction we offer a short description of the papers, which have been organised into three groups, according to the dimension of adpositions that they are most concerned with: firstly, there are three papers dealing with the fine structure of PPs and the interaction of the adpositional category with respect to other categories (Svenonius, Pretorius, Real-Puigdollers); then, two papers approaching the expression of semantic notions like relation and possession in the adpositional domain (Franco, Manzini & Savoia, Matushansky); and, finally, two papers offering new data and insights on lexicalization patterns related to the expression of change (Gibert-Sotelo, Öztürk & Eren).

The papers by Svenonius, Pretorius, and Real-Puigdollers deal with issues related to the connection between the adpositional category and other contiguous categories in the structure: categories in the extended projection of the verb in the first two papers, and

the nominal category in the third paper. These contributions effectively illustrate well the tension between linguistic uniformity and linguistic variation. In the aftermath of the Principles & Parameters era (Chomsky 1981f.), and after much discussion of the adequacy of macro- or micro-parametric approaches to variation (see Biberauer 2008, Picallo 2014), two opposing views on the nature of variation in functional categories are now typically held: the universalist view and the emergentist view. Within the former, (e.g., Cinque 1999, Grimshaw 2005 or standard work in Nanosyntax), the hierarchy of functional projections is a biological given, and variation amounts to the presence or absence of particular projections or their externalization. For the emergentist view, the functional categories are underspecified and are fleshed out in the course of acquisition on the basis of language-specific input (see, i.a., Zeijlstra 2008, Ramchand & Svenonius 2014, Wiltschko 2014, Biberauer & Roberts 2015).

In his paper, Svenonius sides with the latter approach, arguing for an underspecified, universal Hierarchy of Domains (HoD) that can be implemented in different languages as differently articulated extended projections. Svenonius observes that in Norwegian, but not in English, functional prepositions can systematically take *that*-clauses and infinitives as complements. Assuming that P is a category of the extended projection of the noun and C is a category of the extended projection of the verb, this means that the P-C segment found in Norwegian constitutes a case of a mixed extended projection. The connection from P to C would, however, be sanctioned by the HoD, since these categories belong to the same domain (the *Linking* domain, in Wiltschko's 2014 terms). In English, on the other hand, the few instances of preposition-over-complementizer (e.g., *in that*) can be shown to be not segments of a given extended projection, but cases where a particular preposition idiosyncratically (i.e., lexically) selects C. Svenonius moreover proposes to model extended projections as Finite State Automata, rather than through Merge. Each state of the Automaton corresponds to a functional category of the extended projection. In Norwegian, but not in English, there exists a transition between the two states implemented as P and C, so that any sequence of functional preposition and complementizer is allowed.

The papers by Pretorius and Real-Puigdollers probe the structural make-up of spatial adpositions, adopting this time a more universalist approach—not wholly, though, in the case of Real-Puigdollers. While Pretorius's contribution focuses on the understudied systematicities of the Afrikaans spatial P-system, which is shown to exhibit the kind of richness familiar from studies of Germanic adposition systems more generally, Real-Puigdollers turns the spotlight onto Romance, which at first sight seems less elaborate. Both authors show that there is, in both empirical domains, a lot more than meets the eye, and, when one considers their contributions side by side, it also becomes clear that what is visible at surface level conceals some quite surprising underlying parallelisms. Following brief summaries of each author's contribution, we highlight some of these points of convergence.

Pretorius specifically focuses on the very small class of Path-denoting Ps in Afrikaans, highlighting the fact that these can take three forms: (i) four prepositions—*deur* 'through', *om* 'around', *oor* 'over/across', and *verby* 'past'—which contrast with the majority of location-denoting prepositions in the language; (ii) three circumpositions containing identical pre- and postpositional elements (so-called *doubling* circumpositions), *in...in* 'into', *uit...uit* 'out/out of', and *op...op* 'onto'; and (iii) three circumpositions containing distinct pre- and postpositions (so-called *non-doubling* circumpositions), *na...toe* 'to', *van...af* 'from', and *met...langs* 'along'. Building on earlier work on the structural decomposition of Path-Ps, Pretorius proposes that Path

always comprises PATH and DIR(ECTION) components, which combine with PLACE to produce spatial meanings in the following hierarchically invariant manner:

(1) [DIR [PATH [PLACE]]]

Appealing to phase theory (Chomsky 2001 *et seq.*) and recent advances in our understanding of how phasal domains may constrain lexicalization (cf., i.a., Acedo-Matellán 2010, 2016, Real Puigdollers 2013, Newell, Noonan, Piggott & Travis 2017), she proposes that PATH and DIR crucially fall on opposite sides of a phase boundary, with PATH in the head-initial P-domain and DIR in the head-final V-domain; as a result, they cannot be lexicalized together. This proposal has numerous important consequences for our understanding of the Afrikaans adpositional system, including that:

- (a) (i)-type prepositional Path-Ps are necessarily route-Paths [PATH [PLACE]], which do not independently express directionality as [PATH [PLACE]] and [DIR] cannot be lexicalised together;
- (b) postpositional elements necessarily encode [DIR], which is actually part of the verbal system. This means that circumpositions are in fact hybrids from a categorial perspective, with the prepositional part falling within the P-domain, while the postpositional part is within the V-domain. As discussed in other work (Pretorius 2017), this leads to the empirically supported prediction that independently occurring postpositions are in fact also not “proper” adpositions; instead, these all turn out to be the particle component of Afrikaans’s typically West Germanic particle verbs. This also has important consequences for the Final-over-Final Condition (cf. also Biberauer 2017b).
- (c) pre- and postpositional elements in Afrikaans are formally very different. This mirrors a more general finding – that head-initial and head-final “variants” within the same language of what would traditionally have been viewed as “the same” category are in fact quite different – that is also emerging from work in other categorial domains. Consider, for example, the striking discrepancies between initial and final auxiliaries, C-elements, D-elements, and negation elements discussed in Biberauer (2017a and sources cited therein).

Real-Puigdollers’s contribution is also centrally concerned with complex adpositions, and with the question of structural boundaries. Like Pretorius, Real-Puigdollers selects three types of spatial elements – all of which are instantiated by a limited number of lexical items – for closer inspection: (i) spatial deictic adverbials, (ii) simple locative prepositions, and (iii) complex locative prepositions, which manifest in three systematically distinct ways. Once again, three key (grammaticalisable) meaning components are identified as being of central relevance in the understanding of the selected elements, in this case: location, deictic space, and boundedness (of the Ground). Appealing to a range of Romance data, Real-Puigdollers shows that deictic adverbials consistently feature a (potentially covert) prepositional element, which exhibits sensitivity to the boundedness of the Ground: in Catalan, for example, *a* ‘at’ marks bounded deictic adverbials, while *en* ‘in’ marks their unbounded counterparts. Simple prepositions, in turn, can be shown to vary crosslinguistically within Romance as to the kind of Figure-to-Ground disposition they may mark: while *a* ‘at’ marks locations in Catalan, French, Italian and Occitan, it is apparently only able to precede goals in Spanish, Portuguese, and Sardinian. *A* also surfaces in complex adpositions, once again exhibiting its sensitivity to boundedness in this context.

To account for the systematic patterns highlighted in the descriptive component of this paper, Real-Puigdollers argues that the Ground should be viewed as the locus of both the deictic and the boundedness properties discussed above, both of which are assumed to be encoded in the form of ϕ -features. These serve as the Goal for the uninterpretable ϕ -features the functional head p is assumed to be specified with, with the form a preposition takes being determined by the nature of the valuing that results from the Agree relationship between p and the deixis- and boundedness-marking ϕ -specifications of the Ground. This, then, parallels the non-featural/relational approach to Case pursued in, i.a., Hinzen (2014). Importantly, Real-Puigdollers does not assume cartography-style functional heads like Pretorius's [PATH], [PLACE] and [DIR]; instead, she postulates an underspecified p , whose precise contribution to the adpositional structure is determined, firstly, on the basis of the ϕ -valuing that follows Agree with the Ground, and, secondly, on the way in which the p itself is subsequently embedded under functional structure. In other words, the observed variation is ascribed both to the inherent featural make-up of p (Does it have ϕ -features or not?, for example) and to p 's structural environment (What kind of Ground does it select? Is it itself selected by another p or by some other functional head?). Real-Puigdollers argues that an underspecification-based approach of this kind has the power to derive the arguably at this point more familiar cartographic structures, and also that it allows us to think in a productively precise and apparently Borer-Chomsky Conjecture/BCC-compatible way about the locus of the microvariation within Romance.

Pretorius and Real-Puigdollers, then, would at first sight seem to be advocating quite different approaches to the micro-systematicities evident in the Germanic and Romance systems that they investigate. Upon closer inspection, however, it becomes clear that they share the fundamental view that understanding the division of labour between P-elements and the—upper and lower—categories they interface with is key to understanding the observed variation. Similarly, they agree that a lexicalist approach to P would not allow either lexical-specification—i.e., BCC-type—or interface considerations to inform that understanding; and also that the boundary between 'P' and 'not P' is not as clearcut as sometimes assumed—another centrally relevant matter in research that aims, as the contributions to this special edition do, to deepen our understanding of the adpositional domain.

The syntax-semantics interface of adpositions is addressed in the next two contributions, which explore the interaction between prepositions and a number of semantic notions. In particular, these two papers focus on the nature and the emergence of locative and possessive meanings respectively, and argue that they constitute derived meanings. One contribution, by Franco, Manzini & Savoia, deals with the coincidence in many languages between the expression of location and non-spatial obliques (genitive, dative, instrumental). Franco, Manzini & Savoia argue that the relational meaning is primitive whereas the spatial one is derived. Evidence comes from different case studies in Romance languages, with a particular focus on Italian varieties and the phenomenon of locative differential object marking, e.g. Italian distinguishes *a* 'to/at' and *da* 'from' for inanimate referents, but always chooses *da* 'to/at/from' for human referents; additionally, in Umbrian varieties, *da* also introduces dative complements. These data (and further data from Creole languages and other Romance languages) can be accounted for if Ps such as Italian *a* and *da* are only general relators, thus not primitively (intrinsically) locative, i.e. locative meanings are derived. An important idea comes from Manzini and Savoia's (2011) analysis of Italian *a* 'to' as a part-whole or inclusion predicate, whose basic context of occurrence is the dative (primitive meaning), but which can also be interpreted as a locative if it embeds an element of locative nature (derived

meaning). The derived status for locatives such as *a* is thus defended on the basis of the core meaning of such items: they are general relators, and the locative interpretation (with properties such as motion, directionality, etc.) depends on their context of embedding (Svenonius 2002).

The aim of exploring the grammatical representation of a given semantic notion is shared by **Matushansky**'s paper, which focuses on prepositions encoding possessive relations. In particular, Matushansky analyses the instances where such a semantic relation is established in Russian between the complement of the linearly first PP and the complement of the linearly second PP in sequences (transliterated into English for convenience) such as 'The thief pulled the wallet [PP₁ at her] [PP₂ out of the bag]' ('The thief pulled the wallet out of her bag') or 'Put the matches [PP₁ towards me] [PP₂ in the backpack]' ('Put the matches in my backpack'). The first PPs (PP₁) in these Russian sentences contain a possessor headed by *Ps u* 'at' and *k* 'towards'. Matushansky follows Corver's (1992) proposal for Dutch and analyses these possessive PP complexes as a constituent consisting of two independent PPs (i.e. [PP₂ [PP₁ at her] [PP₂ out of the bag]]); syntactic evidence from constituency tests is provided. Likewise, Matushansky claims that the possessive interpretation of such sequences arises from combining the locative PPs via Predicate Modification (Heim and Kratzer 1998). In this regard, the paper shows that, in addition to the visibly locative nature of PP₂s, PP₁s can also be argued to be locative once the concept of the *sphere of influence* (Belvin and den Dikken 1997, Zimmerling 2000) is resorted to. In other words, possession, recast as a locative notion (a spatial metaphor in Lakoff's 1993 terms), is pragmatically derived.

The final two papers deal with two very different aspects of Talmy's (2000) well-known satellite-/verb-framed typology, which has come to be associated, standardly, with variation at the level of the adpositional elements conveying the idea of trajectory or transition (Klippel 1997, Inagaki 2002, Mateu & Rigau 2002, Acedo-Matellán & Mateu 2015, Acedo-Matellán 2016, i.a.).

Gibert-Sotelo's paper deals with the typological shift from a satellite-framed system with a Co-event conflation pattern in Latin to a verb-framed system with a Path conflation pattern in Spanish. Following Real-Puigdollers' (2013) syntactic approach to Talmy's (2000) satellite-/verb-framed typology and drawing on Pantcheva's (2011) nanosyntactic decomposition of paths, Gibert-Sotelo claims that in satellite-framed Latin, source prefixes lexicalize a Source Path that constitutes a phase, which allows a verbal root to be merged on top of the functional sequence of heads lexicalized by the prefix, which is at the bottom-most position of the following phase. Given this, the source prefix cannot take scope over the verbal root, which is interpreted as a Co-event. In contrast, in verb-framed Spanish, the Source Path does not constitute a phase, and therefore the root of the verb cannot be merged on top of SourceP. This verbal root can then only appear at the bottom-most position of the derivation, where it is interpreted as a Ground. In this configuration, the prefix is claimed to take direct scope over the verbal root. Furthermore, Gibert-Sotelo shows how Source-denoting elements can develop a negative meaning. Source Paths are negatively oriented since they involve a transition from a positive stage (location in/on/at the Ground) to a negative one (location *not* in/on/at the Ground).

Öztürk & Eren's paper deals with the status of Pazar Laz, an endangered South-Caucasian language spoken in Turkey, within Talmy's typology. Pazar Laz exhibits an elaborate system of spatial relations expressed through prefixes on the verb. Öztürk & Eren show that unlike the spatial markers in satellite-framed languages, the spatial prefixes in Pazar Laz are incompatible with manner of motion verbs. Contrary to what Kutscher (2011) claims, these prefixes do not merit the status of satellites. Drawing on Acedo-Matellán (2010, 2016), who splits satellite-framed languages into weak vs. strong

s-framed languages, Öztürk & Eren argue that verb-framed languages can also be weak or strong, with Pazar Laz constituting an example of a weak v-framed language where the verb root and Path are realized as a single word, but not as a single verb root, which is what is observed in strong v-framed languages.

Funding information

The first, third, and fourth authors acknowledge funding from the Spanish Ministerio de Ciencia e Innovación, via the grant FFI2017-87140-C4-1-P.

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