The syntactic structure of Locations, Goals and Sources

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Abstract

In this paper, I argue for a decomposition of the Path head in the syntactic structure for directional expressions. Based on cross-linguistic data showing that different types of paths are of different complexity and, crucially, are subject to a morphological containment relationship, I propose a more detailed structure for directionals.

I adopt the orthodox view that Goal paths are built on top of a locative Place projection. However, I suggest that Source paths are built on top of Goal paths. This is evidenced by the morphological make-up of Source-denoting elements in a variety of languages, where the Source marker morphologically contains the Goal marker. Further, I explore the lexicalization of the decomposed Path structure I defend and test the predictions against the empirical domain of syncretisms between the spatial roles Source, Goal, and Location. I show that the decomposed Path structure and the lexicalization theory I adopt capture syncretism patterns that are widely attested among languages and ban those syncretism patterns that are unattested.

1 Introduction: cross-linguistic patterns of Location-Goal-Source syncretisms

All languages have one way or another to express location, goal of motion, and source of motion. However, languages differ regarding the way they encode the distinction between these three notions. In principle, there are five logical permutations:

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(1) a. **Location=Goal=Source** (L=G=S) – a language with this pattern has one single marker (be it a case affix or adposition) to encode location, goal of motion and source of motion, thus drawing no distinction between the three functions.

b. **Location=Goal≠Source** (L=G≠S) – in this case, there is one marker which is ambiguous between location and goal of motion, and a second marker which expresses source of motion.

c. **Location≠Goal≠Source** (L≠G≠S) – this is the pattern of languages that have a separate marker for each of the three notions.

d. **Location≠Goal=Source** (L≠G=S) – such a language has one marker that encodes motion, regardless of whether it is goal oriented or source oriented. Location is expressed by a different marker.

e. **Location=Source≠Goal** (L=S≠G) – in such a language the notions of location and source of motion are expressed by the same means, to the exclusion of goal of motion, which is encoded separately.

Interestingly, these five possible patterns are not proportionally distributed among languages. As a matter of fact, there is a clear skewing in favor of the first three. This asymmetry has been stated most concisely in Andrews (1985:97).

> A particularly interesting tendency [...] is for certain groups of notions but not others to be expressed by the same marker in many different languages. Thus sometimes one finds the same NP-marker coding the Locative, Goal and Source roles [...], sometimes one finds Locative and Goal expressed by the same marker, with a different one for Source [...], and sometimes, as in Warlpiri, different markers are used for all three locative roles. But one doesn't seem to find one marker used for Locative and Source, with a second for Goal; or one for Source and Goal, with a different for Locative.

Thus, according to Andrews, languages world-wide exhibit an inclination towards the patterns L=G=S (1a), L=G≠S (1b) and L≠G≠S (1c), while the patterns L≠G=S (1d) and L=S≠G (1e) are unattested.

Andrews' generalization gains support from statistical data. For instance, Blake (1977) examines the aforementioned syncretism tendencies against a sample of Australian languages. In Appendix I, Blake lists the case forms for 115 Australian languages. Of those, 85 languages are listed as having all three spatial cases: Locative (encoding location), Allative (encoding goal of motion), and Ablative (encoding source of motion). A survey of these 85 languages reveals that 91% (77 languages) have a special form for each spatial case, that is, follow the pattern L≠G≠S. Nine percent (8 languages) have one shared case affix for Locative and Allative and a separate one for Ablative, exemplifying the pattern L=G≠S.

No language from this sample exhibits the patterns L=G=S, L≠G=S or L=S≠G. Blake (1977:60) concludes that a Locative-Allative syncretism is a very common phenomenon, in line with Andrews' (1985) observation.

The tendency for languages to lexicalize location, goal and source of motion according to the patterns in (1a), (1b), and (1c) finds further support in the typological study conducted by Noonan (2008). He examines the overall patterns of syncretism in 76 Tibeto-Burman languages. The results again show a very robust Locative-Allative syncretism (44 languages) — 58% of the examined Tibeto-Burman languages pattern according to the type L=G≠S. The pattern L≠G≠S is represented by 25 languages (33%). Four percent (3 languages) use the same marker for all three functions, thus exemplifying the type L=G=S. There are however two languages (2,5%) that exhibit the pattern L≠G=S and two languages (2,5%) that follow the pattern L=S≠G, which goes against Andrews' generalization. Unfortunately, Noonan (2008) does not reveal the names of the languages in question, which hinders further investigation of the syncretism patterns in these languages.

It should be noted that the fact that none of the Australian languages surveyed by Blake (1977) and only 4% of the Tibeto-Burman languages studied by Noonan (2008) follow the pattern L=G=S does not refute Andrews' (1985) claim. The pattern L=G=S is widely attested among languages spoken in Subsaharan Africa, in particular languages from the Niger-Congo family (Creissels 2006). Other examples for such languages are Yucatec Maya (Mayan) (Bohnemeyer and Stolz 2006), Nahuatl (Uto-Aztecan) (Launey 1979), and Mapudungun (isolate, South America) (Wälchli and Zuñiga 2006).

In order to test Andrews' generalization, I collected my own sample of 53 languages comprising ten language families and 2 isolates. The results confirm Andrews' generalization. More specifically, 28 of the languages I studied follow the pattern L≠G≠S, which constitutes 53%. The pattern L=G≠S is represented by 34% of the languages. Thirteen percent of the languages in the sample syncretise all the three spatial roles (pattern L=G=S). Finally, no language exhibits any of the patterns claimed by Andrews to be unattested.

The typological study in Rice and Kabata (2007) takes a different perspective on the syncretism patterns, but still allows one to state some generalizations. Rice and Kabata take as a starting point the Allative marker (regardless of whether it is a case affix or an adposition) and examine what other functions it can have (for example, Locative, Ablative, Purposive, Benefactive, etc.). They examine the models of Allative syncretisms in 44 genealogically diverse languages. The upshot is that ten languages (23%) use the same marker for Allative and Locative (pattern L=G≠S (1b)). Five languages (11%) use the same marker for the Allative, Locative and Ablative functions (pattern L=G=S (1c)).

The remaining 29 languages (66%) are the ones where the Allative marker is syncretic neither with Locative nor with Ablative. Since this study of syncretism patterns aims to answer the question which functions the Allative marker can express other than the Allative, no information can be retrieved as to whether Locative and Ablative can be syncretic to the exclusion of the Allative, that is, L=S≠G (1e). Similarly, nothing can be said about languages in the sample that follow the pattern L≠G≠S (1c). Therefore, no conclusion can be drawn concerning the distribution of the 29 remaining languages between the patterns L≠G≠S and L=S≠G.[1] Nevertheless, in the sample of Rice and Kabata (2007), there is not a single language that uses the Allative marker to express also the Ablative function, but has a separate Locative marker (i.e., the pattern L≠G=S (1d)).

Table 2 summarizes the cross-linguistic lexicalization patterns, arranged according to their frequency. The second column represents the overall percentage calculated on the basis of all three studies. The numbers in the brackets show the actual number of languages: the first number is the number of languages that have the relevant pattern, the second number is the total number of languages. For the patterns L≠G≠S and L=S≠G the total number is lower, because the languages from Rice and Kabata's (2007) sample are not included for reasons discussed in the previous paragraph.

	Overall	Blake (1977)	Noonan (2008)	My sample	Rice and Kabata (2007)
L≠G≠S	60,7% (130/214)	91% (77/85)	33% (25/76)	53% (28/53)	—
L=G≠S	31% (80/258)	9% (8/85)	58% (44/76)	34% (18/53)	23% (10/44)
L=G=S	5,8% (15/258)	0% (0/85)	4% (3/76)	13% (7/53)	11% (5/44)
L=S≠G	0,9% (2/214)	0% (0/85)	2,5% (2/76)	0% (0/53)	—
L≠G=S	0,8% (2/258)	0% (0/85)	2,5% (2/76)	0% (0/53)	0% (0/44)

Table 1: Pattern of syncretism for the lexicalization of Location, Goal, and Source

To conclude, from the five logically possible syncretism patterns in (1), only three seem to be widely attested, namely the ones in the shaded cells. This curious fact calls for an explanation. So far, the existing proposals regarding the syntactic structure of directional spatial expressions decompose them into a Path projection that dominates a Place projection. The Path head is the locus of various kinds of Path elements, for example Goal markers and Source markers. By dedicating the same syntactic position for both Goal and Source elements, these accounts provide no insight as to why there should be such asymmetric syncretism patterns

[1] Following Andrews' generalization that the pattern L=S≠G seems not to be found, I would guess that these 29 languages belong to the type L≠G≠S. However, this is a pure speculation and I am unwilling to take this as a reliable piece of data.

as already discussed. For instance, why would a locative Place marker tend to be syncretic exactly with a Goal element but not a Source element, when both directional elements are hosted by the Path head? It is the goal of this paper to propose an answer to this question. I will argue for a decomposed Path projection and will show that such a syntactic structure is able to account for the morphological makeup of spatial markers in languages and capture the cross-linguistic lexicalization patterns for Location, Goals, and Sources.

2 Decomposing directional expressions

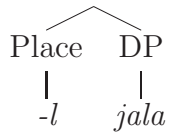
2.1 Path versus Place

There have been numerous proposals concerning the syntactic decomposition of directional expressions into a Path head dominating a Place head. For instance, Koopman (2000) suggests that the structure underlying directional adpositional phrases in Dutch consists of a functional Path head combined with some projection of the Place head. Van Riemsdijk and Huybregts (2002) argue that the Path head (their Dir) and the Place head (their Loc) are syntactically diagnosable positions and have direct morphological counterparts in some languages. Den Dikken (to appear) and Svenonius (to appear), too, adopt of the idea of two distinct heads in the syntactic structure of directional expressions: one for locative elements (Place) and one for directional elements (Path). All these accounts reflect Jackendoff's (1983) conceptual structure for directional spatial expressions, where the function PATH dominates the function PLACE. Thus, there is a general consensus that the syntactic structure of directional expressions minimally consist of two heads: a Path head and a Place head. Abstracting away from other heads, which have been proposed to be part of the syntactic structure for spatial phrases, such as Koopman's $\text{Deg}_{\text{Place}}$, Den Dikken's Deix head, or Svenonius' AxPart head, the structure for directional expressions can be diagrammed as in (2).

(2)

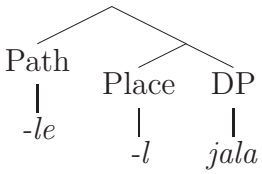
Direct evidence for such a structure comes from languages where directional markers morphologically contain locative markers. *Estonian* (Uralic) provides a clear example for such a superset-subset relationship between a directional expression and a locative expression. Consider the example in (3a) showing a noun marked by the Adessive case ending *-l* (glossed here as 'on') and the underlying syntactic structure in (3b) (data from Viitso 1998).

(3) a. jala-l
foot-ON
'on the foot'

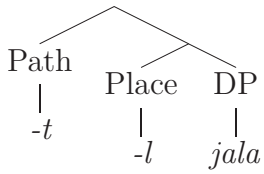
b. 

The corresponding Goal (Allative) and Source (Ablative) phrases in *Estonian* are derived by adding the case endings *-le* (glosses as 'to') and *-t* (glossed as 'from'), respectively, to a noun marked by the Adessive ending *-l* (Viitso 1998).

(4) a. jala-l-le[2]
foot-on-to
'onto the foot'

b. 

(5) a. jala-l-t
foot-on-from
'off the foot'

b. 

A comparison between the syntactic structures in (3b), on one hand, and (4b) and (5b), on the other hand reveals that directional expressions are built on top of locative expression by adding to the locative structure the directional head Path. In a language like *Estonian* this is morphologically transparent, as there are dedicated morphemes (*-le* and *-t*) that lexicalize the Path head. This phenomenon is not limited to *Estonian* in particular. It is fairly common cross-linguistically and exhibited by genealogically diverse languages, as can be seen from Table 2 below.

To sum up, the fact that in many languages Goal and Source directional expressions morphologically contain locative expressions substantiates syntactic accounts which argue for a structure where a Path projection embeds a Place projection.

One the semantic side, one can find the same concept developed in the work by Zwarts (2005; 2006). Zwarts proposes a semantics for directional preposition which relates paths to locations. More specifically, Source prepositions are the ones that include the starting point of a path, termed p(0), which can be either IN the reference object (for *out of*), ON the reference object (*off*), or AT the reference object (*from*). What all Source prepositions share is the property that

[2]According to the orthographical conventions in *Estonian*, the double *ll* of the Allative ending is written as a single *l* leading to *jalale* 'on the foot'. Nevertheless, the Allative marker is morphologically decomposed as shown in (4) (Anna Tamm, p.c).

Language	Family	Location	Goal	Source	Reference
Garo	Tibeto-Burman	*-o*	*-o-na*	*-o-ni*	Burling (2003)
Lezgian	Daghestanian	*-q^h*	*-q^h-di*	*-q^h-aj*	Haspelmath (1993)
Mwotlab	Oceanic	*l(V)-*	*a l(V)*	*m^{w}ɛ l(V)*	Crowley (2002)
Yanesha	Andic	*-o*	*-o-net*	*-o-t^y*	Duff-Tripp (1997)

Table 2: Morphological containment of locative expressions inside directional expressions

they include the location in the starting point p(0). Goal prepositions, on the other hand, include the end point of the path, p(1), which is IN, ON, or AT the reference object (resulting in *into*, *onto* and *to*, respectively). The table below, which has been adapted from Zwarts (2005:759), gives a more perspicuous overview of the decomposability of the prepositions discussed in this paragraph.

		IN	ON	AT
Source Ps	p(0)	out of	off	from
Goal Ps	p(1)	into	onto	to

Table 3: Relation between Goal/Source paths and locations

The first two lines of the table can be summarized by saying that Source prepositions impose a locative condition on the initial part of the path, while Goal prepositions impose a locative condition on the final part of the path. In addition, Zwarts includes in the definition of Source and Goal prepositions a single transition from one spatial domain to a complementary spatial domain, following the intuition that they actually refer to a two-stage path structure, namely a negative and a positive phase (see also Fong's 1997 treatment of directional expression, which are argued to encode a unique transition from a positive phase p to a negative phase $\neg p$, or vice versa).

Thus, a Goal path like *into the house* is visualized by Zwarts (2005) as in (6), where the plusses indicate locations in the house, and the minuses represent locations not in the house, that is, outside the house.

(6) $- - - - - + + + + +$
$0 \qquad\qquad\qquad 1$

With Source prepositions, we get the opposite pattern, where a negative phase follows a positive phase, (7). Hence, Source paths can be seen as reversed Goal paths (Zwarts 2006).

(7) $+ + + + + - - - - -$
$0 \qquad\qquad\qquad 1$

The semantics proposed by Zwarts is clearly compositional and in line with the syntactic structures proposed by Koopman (2000), van Riemsdijk and Huybregts (2002), Svenonius (to appear) and den Dikken (to appear), where there is Path head that takes as a complement a Place projection. Thus, if we are to make the syntactic and semantic hypotheses converge, it will be fairly obvious to state that the Path head encodes Goal or Source, while the Place head below it expresses an IN, ON or AT relationship between the Figure and the Ground. Put in other words, the IN/ON/AT bit is the semantic contribution of the Place head, while the semantic content of the Path head specifies whether the locative condition encoded by the Place head holds of the starting point p(0) or of the end point p(1) of the path.

2.2 Zooming in on Path: Goal versus Source

As can be seen from the data presented in the previous subsection, the morphological containment relationship observed to hold between directional expressions and locative expressions supports analyses arguing for a Path head dominating a Place head. At first glance, there seems to be no such relatonship between Goal expressions and Source expressions. For instance, there is no evident containment relationship between the *Estonian* Goal marker *-le* and the Source marker *-t*, as there is between the Adessive *-l* and the Ablative *-l-t*. In fact, in the majority of languages, Goal markers and Source markers appear to be equally complex (or simple), which implies the presence of a unique Path head in the directional structure, accommodating both types of elements.

Importantly, there are some languages that suggest a different view. One such language is *Quechua* (Adelaar 2004, Faller 2007, Schmidt-Riese 2005), as illustrated in the example below.

(8) a. Kay n^{y}an-ga ayakučo-**man** ri-n.
this road-TOP *Ayacucho*-ALL *go*-3SG
'This road goes to Ayacucho' (Adelaar 2004)
b. May-**manta**-s chay runa ka-n-man?
where-ABL-REP *this man be*-3SG-COND
'Where could this man be from?' (Faller 2007)

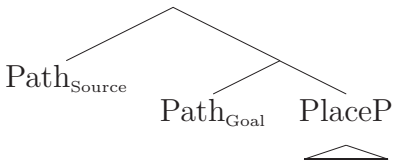
In *Quechua*, the Allative (Goal) marker is the simple morpheme *-man*, while the Ablative (Source) marker is morphologically complex and consist of the Allative morpheme *-man* and the morpheme *-ta*. The same pattern is observed for a number of other unrelated languages. Those are presented in Table 4.

	Jingulu, Australian Blake (1977)	*Ingush*, Nakh Nichols (1994)	*Uchumataqu*, Andic Vellard (1967)	*Mansi*, Uralic Keresztes (1998)
Locative	*-mpili*	*-ǧ*	*-tá*	*-t*
Allative	*-ŋka*	*-ga*	*-ki*	*-n*
Ablative	*-ŋka-mi*	*-ga-ra*	*-ki-stani*	*-n-əl*

Table 4: Languages where the Ablative marker morphologically contains the Allative marker

So far, I haven't encountered a language where the reversed relationships obtains, that is, a language where the Goal marker morphologically contains the Source marker. Thus, the data indicates that Source expressions are more complex than Goal expressions in that the former morphologically contain the latter, and not the other way around. Assuming that morphological complexity is reflected in the syntax, I suggest that the syntactic structure underlying Source expressions embeds the syntactic structure for Goal expressions. This is represented by the tree diagrams in (9).

(9) a. Source phrase



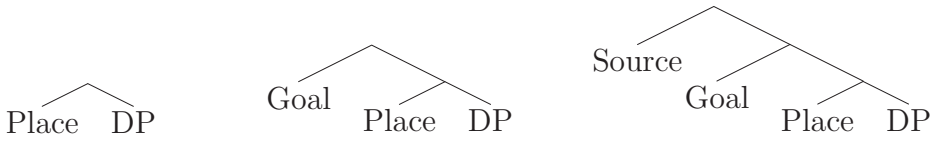
b. Goal phrase

To phrase it in a different way, the fact that in a variety of languages Source expressions are built by adding a morpheme to an already constructed Goal expression produces evidence in favor of a hierarchical structure where Source paths are built on top of Goal paths.

3 Proposal

The conclusion from the last section is basically the gist of the proposal in this paper. Thus, I argue against the claim that, in the syntactic structure for directional expression, there is a unique Path head hosting directional elements, regardless of whether these elements have a Source-directional or a Goal-directional semantics. The claim I defend is that Source path and Goal paths are structurally different. Specifically, Source paths are built out of Goal paths by merging an additional syntactic head. The syntactic structures for Locations, Goal paths and Source paths, which I propose, are then the following:

(10) a. Locations b. Goal paths c. Source paths



Under this analysis, the syntactic structure for Locations remains unaltered compared to other accounts (albeit simplified to a maximal extent for ease of exposition). Goal paths are built on top of Locations, which also complies with the dominant view. The innovation is that Source paths are built not from Locations, but from another path — a Goal path.

The important question is what role in the syntax each of the heads I have postulated has and how they can be motivated from the point of view of compositional semantics. In what follows, I lay out my proposal concerning the functions of the three heads.

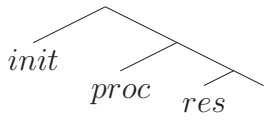
Let us start from the simplest structure, namely a locative expression constituting a Place phrase. I make the orthodox assumption that the Place head encodes a spatial domain (in Zwart's 2005, 2006 terminology). Turning to Goal paths, I suggest that the role of the Goal head is to encode *transition* from one spatial domain to a complementary spatial domain (or from a phase p to a phase $\neg p$, in Fong's 1997 terms). Given that the Goal head selects a PlaceP, the transition will be a transition to the spatial domain encoded by the Place head. This, however, does not follow immediately from the transitional semantics of the Goal head, so, a more detailed discussion is in order.

Under the assumption that the Goal head introduces the transition from one spatial domain to a complementary spatial domain (or $p \rightarrow \neg p$), at first glance, it seems necessary to postulate that the second domain is the positive phase. This is needed in order to obtain a Goal path represented by Zwarts as $- - - + + +$. Thus, we have to ensure that the Goal head encodes a transition from ¬Place to Place. Without this additional restriction on the transition provided by Goal, the transition could be from Place to ¬Place. This, however, represents a Source path, visualized as $+ + + - - -$, and goes against the proposal that Source paths embed a Goal path.

Hence, in order for the system to work, the transitional head dominating PlaceP must be interpreted as Goal-oriented. Importantly, there is enough linguistic evidence showing that when a stative projection is embedded under a dynamic head, the former is interpreted as the result, or the end-point, of the latter. It seems to never be the case that an embedded stative projection can be interpreted as the initiation, or starting point, of the dynamic head. A clear illustration is provided by resultative predication. As discussed by Hoekstra (1988), when a

non-stative verb select a small clause complement, the latter is interpreted as the consequence of the activity or process denoted by the verb. Crucially, the small clause cannot be interpreted as the cause for the activity or process denoted by the verb. The same causal semantic relationship provides the basis of the semantic approach to event structure taken in Ramchand (2008). Ramchand decomposes the VP into three subevents: a stative initation head (*init*), dominating a dynamic process head (*proc*), which in turn dominates a stative result head (*res*).

(11)



The three heads are semantically related to each other by means of a "leads-to" relationship. Thus, it is only the relative position of the two stative heads (*init* and *res*) that determines their semantic interpretation. In other words, the higher stative head is interpreted as the state leading to the process or change denoted by the *proc* head, hence *initiation*. The lower stative head is interpreted as the result of the process or change denoted by the *proc* head, hence *result*.

I suggest that when it comes to the interpretation of the transition expressed by the Goal head, we see the same mechanism in action. Thus, I suggest that when a "dynamic" Goal head embeds a stative Place head in the syntactic structure, the location encoded by the PlaceP is interpreted as the result of the transition denoted by the Goal head. Therefore, the spatial domain expressed by PlaceP is the *end-point* and never the starting point of the transition. This ensures a path of the type $- - - + + +$ (i.e. a Goal path) and excludes a path of the type $+ + + - - -$ (i.e. a Source path). To make the parallel even stronger, one can think of the Goal head as the spatial counterpart of the verbal *proc* head, denoting change. The PlaceP corresponds to the stative *res* head. By virtue of the causal semantics relationship, the PlaceP is interpreted as the location to which the spatial transition encoded by the Goal head leads to.

Let us now turn to the semantics of the Source head. Unlike the Goal head, the Source head does not apply to a stative location, but takes as a complement an already constructed path, namely a Goal path. A Goal path contains one transition (provided by the Goal head), hence it cannot be the case that the semantics of the Source head is transitional (this would lead to a path with two transitions, and this is not a Source path). What is, then, the semantic information that the Source head brings into the structure? A comparison between Goal paths and Source paths shows that they are constructed in the same way, but are the mirror images of each other. In other words, Source paths can be seen as the opposite of Goal paths (as also discussed in Zwarts 2005; 2006). Therefore, I suggest that the Source head is the locus of a semantic reversal operation. Thus, the Source head,

keeping all things equal, just reverses the orientation of the path provided by the [Goal [Place]] configuration. In this way, the spatial domain encoded by the Place head (i.e., the positive phase) gets interpreted as the *starting point* of the path, leading to a path of the type $+ + + - - -$.

To wrap up the discussion in this section, I proposed to decompose the Path head in the structure for directional expressions into two heads: a lower Goal head and a higher Source head. The semantics of the Goal head is dynamic and it expresses the transition *to* the spatial domain encoded by the Place projection. The semantic role of the Source head is quite different: it reverses the path expressed by the Goal phrase, thus resulting in a transition *from* the spatial domain encoded by the Place phrase. Under this account, Source and Goal expressions are representatives of two different syntactic categories – a view which gains support from the different distribution of Source and Goal phrases cross-linguistically (Nam 2005).

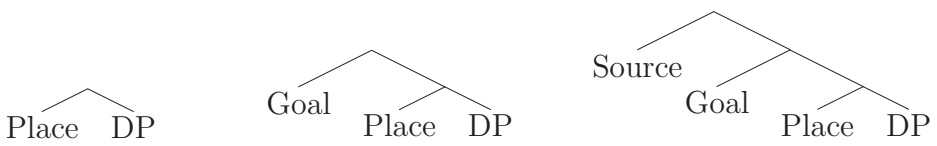
4 Explaining the syncretisms

Let us now turn back to the syncretism patterns discussed in Section 1. Recall that from the five logically possible syncretism patterns, only three are attested, while the remaining two seem not to be found in languages. The patterns are repeated below from (1), re-ordered according to their frequency.

(12) a. Location≠Goal≠Source (L≠G≠S)
b. Location=Goal≠Source (L=G≠S)
c. Location=Goal=Source (L=G=S)
d. *Location=Source≠Goal (L=S≠G)
e. *Location≠Goal=Source (L≠G=S)

Given that these patterns have cross-linguistic validity, it is tempting to derive the results of the typological surveys from the universal syntactic representation underlying each of the three spatial roles, for which I presented evidence in the preceding sections.

(13) a. Locations b. Goal paths c. Source paths



Ideally, the syntactic trees in (13) should predict the syncretism patterns in (12) in that they allow for (12a-c) and ban (12d-e). The current section is devoted to testing the predictions made by the structures in (13), in that I examine the possible ways for languages to exhibit each of the syncretism pattern in (12).

4.1 Lexicalizing the structure

Before proceeding to the thorough analysis of each syncretism pattern, it is important to state clearly the assumptions concerning the spell-out of the structures in (13) and, in general, the lexicalization of syntactic structure.

4.1.1 The Superset Principle

First, I assume that lexical items (free and bound morphemes) are stored in the lexicon as a pairing of a phonemic string (phonological exponent) and a set of grammatical features (Halle 1997). The grammatical feature specification of a given lexical item determines which heads in the syntactic structure it can lexicalize. Thus, syntax is concerned only with the grammatical features of a lexical item and the phonological form of the item is irrelevant.

Further, I adopt the view that lexical items are inserted into the syntactic structure once its derivation has been completed. In other words, lexicalization of the structure is a post-syntactic operation, where the hierarchical structure built by syntax is supplied by the phonological features provided by the lexical item (Halle and Marantz 1993; 1994).

In addition, I assume that a single lexical item can lexicalize more that one terminal in the syntactic structure (Starke 2007, Neeleman and Szendrői 2007, Caha 2008, Ramchand 2008, Abels and Muriungi 2008). This can be achieved in one of two ways: either by multi-attachment of a single lexical item to multiple terminals (Ramchand 2008), or by letting lexical items spell out non-terminal nodes (Starke 2007, Neeleman and Szendrői 2007, Caha 2008).

Finally, I assume that lexicalization is governed by the so-called *Superset Principle*, stated below:

(14) *Superset Principle* (Caha 2008)
A phonological exponent is inserted into a node if its lexical entry has a (sub-)constituent that is identical to the node. If there are more such items (with identical encyclopedic information), the one with fewest features not contained in the node gets inserted.

At first glance, the *Superset Principle* is similar to the *Subset Principle* of Distributive Morphology.

(15) *Subset Principle* (Halle 1997)
The phonological exponent of a Vocabulary item is inserted into a morpheme in the terminal string if the item matches all or a subset of the grammatical features specified in the terminal morpheme. Insertion does not take place if the Vocabulary item contains features not present in the morpheme. Where several Vocabulary items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal morpheme must be chosen.

However, there are a couple of crucial differences between the two principles, as summarized in Table 5:

	Superset Principle	*Subset Principle*
Insertion of a lexical item into a node[3] takes place if	the lexical item is specified for a *superset* of the features expressed in the node	the lexical item is specified for a *subset* of the features expressed in the node
Insertion targets	both terminal and non-terminal nodes	only terminal nodes
Insertion does not take place if	the node contains features that the lexical item is not specified for	the lexical item is specified for features that are not contained in the node
When two items compete for insertion	choose the one specified for the fewest features not contained in the node	choose the one specified for the greatest number of features contained in the node

Table 5: Differences between the *Superset* and the *Subset Principles*

The first two differences fall out from the formulation of each of the principles. The third difference is that, under the *Subset* view of lexicalization, a lexical item need not be specified for all the grammatical information contained in the node it spells out. The *Superset*-driven lexicalization, however, takes a different stand on the matter. Under the *Superset* view, underspecification of lexical items is disallowed. That is, each feature contained in a node must be spelled out. This is

[3]In order to avoid cumbersome expressions, in the remainder of the paper I will use the phrase "a lexical item is inserted into a node" instead of the more precise "the phonological exponent of a lexical entry/Vocabulary item is inserted into a node/terminal string".

also the hunch behind the *Exhaustive Lexicalisation Principle* of Ramchand (2007) and Fábregas (2007), stating that each feature in the syntactic structure has to be lexicalized, otherwise the structure is ill-formed.

4.1.2 The Elsewhere condition

In fact, the fourth difference in Table 5 need not be explicitly stated as part of neither of the two lexicalization principles. The reason is that it can be derived from an independent principle, namely the *Elsewhere Condition* as formulated in Kiparsky (1973).

(16) *Elsewhere Condition* (Kiparsky 1973:94)
Two adjacent rules of the form
$A \longrightarrow B \ / \ P\_\_\_Q$
$C \longrightarrow D \ / \ R\_\_\_S$
are disjunctively ordered if and only if:
   a. the set of strings that fit PAQ is a subset of the set of strings that fit RCS, and
   b. the structural changes of the two rules are either identical or incompatible.

Put informally, the *Elsewhere Condition* says that whenever we have two rules — one which applies in a more *general* case, and the other which applies in a more *specific* case — the specific rule blocks the general rule from application (unless, of course, the two rules have nothing to do with each other, and this is what (16b) is about).

An alternative way to formulate the same principle is provided by Neeleman and Szendrői (2007).

(17) *Elsewhere Principle* (Neeleman and Szendrői 2007)
Let R_1 and R_2 be competing rules that have D_1 and D_2 as their respective domains of application. If D_1 is a proper subset of D_2, then R_1 blocks the application of R_2 in D_1.

The last clauses in both the *Subset Principle* and the *Superset Principle* (repeated bellow) are simply implications of this condition.

(18) *Subset Principle* ... Where several Vocabulary items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal morpheme must be chosen.

(19) *Superset Principle*: ... If there are more [matching] items (with identical encyclopedic information), the one with fewest features not contained in

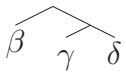
the node gets inserted.

Taking as an example the *Superset Principle*, consider the following lexical items with the respective feature specifications:

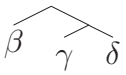
(20) a. A: $< \beta, \gamma, \delta >$ (R_1)
b. B: $< \alpha, \beta, \gamma, \delta >$ (R_2)

And the syntactic structure in (21):

(21)



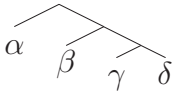
As the feature specification of the two lexical items is a superset of the features contained in the structure in (21), they are both eligible to spell it out (according to the *Superset Principle*) and are thus competitors. Let us then turn to their domains of application. A can lexicalize the following structures, as they are (sub-)constituents of the structure A is specified for.

(22) a. 

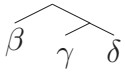
b. 

c. β
d. γ
e. δ

B can lexicalize all the structures which A can lexicalize plus also the structures in (23a) and (23b), which A cannot spell out for lack of the feature α.

(23) a. 

b. α

c. 

d. β

e. 

f. γ
g. δ

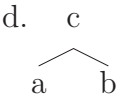
Another way to describe the situation is to say that the domain of application of A is a proper subset of the domain of application of B. Hence, lexicalization by A represents a more specific case than lexicalization by B. For that reason A is favored over B to lexicalize the structure in (21). Put in other words, R_1 applies in (21), thus blocking R_2 from applying. As a result, for the lexicalization of the structure in question we have chosen the lexical item which leaves us with the least number of "superfluous" features.[4]

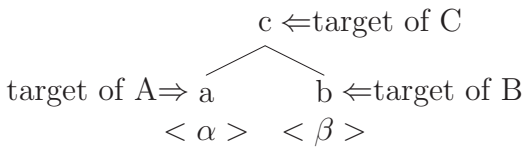
Another implication of the *Elsewhere condition* concerns the competition between lexicalization of a certain category by one or by more than one lexical items.

[4]I will not elaborate here on how the *Elsewhere Condition* derives the last clause in the *Subset Principle*, as the reasoning is parallel.

As discussed in Neeleman and Szendrői (2007), spell-out of a category C takes priority over spell-out of the categories contained in C. To illustrate, imagine, we have the lexical items in (24a-c) and the structure in (24d).

(24) a. A: $< \alpha >$
b. B: $< \beta >$
c. C: $< \alpha, \beta >$

d.


(25)


Assuming a bottom-up spell-out procedure, the lexicalization of (24d) will proceed as in (25): first node b is lexicalized by B, then node a is lexicalized by A, which gives us a spell-out by A+B. Proceeding up to node c, however, we find a matching item specified for the features expressed in the node, namely C. Note that lexicalization of node c is more restricted than lexicalization of the nodes a and b separately, because the former is sensitive to the nodes dominated by c. At the same time, insertion of A under a, for example, does not depend on any other node and thus can be seen as more "general." Therefore, lexicalization by the single item C is favored over lexicalization by the combination of two lexical items A+B, since C is more "specific."

This implication of the *Elsewhere Condition* has been widely discussed in the literature, albeit referred to in different terms. For instance, this is the content of Emonds' (1994) *Economy of Derivation* saying that, of two equivalent deep structures, the derivation with the insertion of the smallest number of free morphemes is to be preferred.

Another way to approach the same phenomenon is from the point of view of *blocking* (for instance, Andrews' (1990) *Morphological Blocking Principle*, Posers' (1992) *Phrasal blocking*, and Kiparsky's (2005) blocking mechanism). The term *blocking*, in general, alludes to cases when the existence of one (usually irregular) form prevents the creation of another (usually regular) form that is expected to be available. For example, the existence of the English irregular past tense form *went* prevents the formation of the regular form **go-ed* thus producing a blocking effect. This is because, going back to the structure in (25) and assuming that $< \beta >$ is <GO> and $< \alpha >$ is the feature <PAST>, *go* and *-ed* are inserted under the nodes b and a, respectively, while *went* is inserted straight into node c, by virtue of being specified for both features <GO, PAST>.

To conclude the discussion in this section, I would like to state clearly the rules and principles which I assume to govern the lexicalization of syntactic structure

(for greater clarity, I tease apart the *Elsewhere Condition* from the core of the *Superset Principle*):

- *Superset Principle* (originally proposed by Michal Starke (unpublished work), formulation of Caha 2008): A phonological exponent is inserted into a node if its lexical entry has a (sub-)constituent that is identical to the node.
- *Elsewhere Condition* (originally proposed by Kiparsky 1973, formulation of Neeleman and Szendrői 2007): Let R_1 and R_2 be competing rules that have D_1 and D_2 as their respective domains of application. If D_1 is a proper subset of D_2, then R_1 blocks the application of R_2 in D_1.
  - *Corollary One*: When two lexical items meet the conditions for insertion in a given node, the item with the fewest features not contained in the node is inserted.
  - *Corollary Two*: Lexicalize syntactic structure by using as few lexical items as possible.

In the following subsections, I show how the lexicalization patterns involving the spatial roles Location, Goal and Source lend support to the syntactic structures I propose.

4.2 The attested syncretism patterns

4.2.1 Location≠Goal≠Source

Languages exhibiting the syncretism pattern L≠G≠S have a separate marker for each of the three notions, each of which notions corresponds to a particular syntactic structure. In the light of the lexicalization theory presented in the preceding subsection, there are several ways for a language to exhibit this pattern.

A language can have Locative, Goal and Source markers that are specified to lexicalize the entire stretch of the corresponding structures, as shown in the leftmost column of Table 6.

Thus, the Source-encoding syntactic structure [Source [Goal [Place]]] can be lexicalized only by the lexical item C, since it is the only item specified for all the features in the tree. The Goal structure [Goal [Place]] can, according to the *Superset Principle*, be spelled out by both C and B, since they both possess the relevant features. However, C has one additional feature that it will not make use of when lexicalizing a Goal structure, namely <Source>. Therefore it loses the competition in favor of B by *Corollary One* of the *Elsewhere Condition*. Finally, A lexicalizes the locative structure, since it wins the competition with C and B, again by virtue of having fewest superfluous features.

Type 1 languages

Feature specification of lexical items	Lexicalization of spatial roles	*Scottish Gaelic*, Celtic (MacAulay 1992)
C: <Source, Goal, Place>	Source: C	C = *bho*
B: <Goal, Place>	Goal: B	B = *gu*
A: <Place>	Location: A	A = *aig*

Table 6

The scenario depicted above applies to languages where there is no morphological containment relationship between the three markers. An example for such a language is *Scottish Gaelic* with its monomorphemic prepositions *bho* 'from,' *gu* 'to,' and *aig* 'at.' On the face of it, they appear to be equally complex, or simplex for that matter, but in fact the Source preposition is the one with the richest feature specification, while the Place preposition is specified for just one feature.

This, however, need not necessarily be the case for a language with the pattern L≠G≠S. Instead of lexicalizing the entire stretch of the structure, the spatial morphemes can be specified for one of the relevant features only.

Type 2 languages

Feature specification of lexical items (LIs)	Lexicalization of spatial roles	*Hua*, Papuan (Kibrik 2002) LIs	Lexicalization
C: <Source>	Source: A+B+C	C = *-ri'*	Source: *-ro-ga-ri'*
B: <Goal>	Goal: A+B	B = *-ga*	Goal: *-ro-ga*
A: <Place>	Location: A	A = *-ro'*	Location: *-ro'*

Table 7

In this case all three lexical items are equally complex in their feature specification. Nevertheless, the three spatial role will be spelled out in three distinct ways, thus giving rise to a Location≠Goal≠Source pattern. Specifically, Location will be lexicalized by A, Goal will be lexicalized by the morphologically complex marker A+B, and Source will be spelled out by the even more complex marker A+B+C. An example for such a language is *Hua*, as described by Kibrik (2002).[5]

There are also hybrid cases between a language of Type 1, where spatial markers that are higher on the hierarchy lexicalize larger chunks of structure, and a language of Type 2, where the lexical entries for two (or more) of the spatial markers have the same number of grammatical features, with these features, of

[5]Note that Haiman (1980) presents a different description of these case markers in *Hua*.

course, being different. We have already encountered such a hybrid, when discussing the lexicalization of Goal and Source paths in *Quechua*. The features of the relevant *Quechuan* spatial case endings are given in Table 8.

Type 3 languages

Feature specification of lexical items	Lexicalization of spatial roles	*Quechua*, Andic (Adelaar 2004) LIs	Lexicalization
C: <Source>	Source: B+C	C = *-ta*	Source: *-man-ta*
B: <Goal, Place>	Goal: B	B = *-man*	Goal: *-man*
A: <Place>	Location: A	A = *-pi*	Location: *-pi*

Table 8

In *Quechua*, the Place and the Source morphemes are endowed by one feature each, while the Goal morpheme has two. This lexicalization type encompasses all languages in Table 4. Another instantiation of a "hybrid" lexicalization type is provided by cases where the Goal and the Source morphemes are endowed by two features each, while the Place morpheme has just one. The Turkic language *Uzbek* exhibits this pattern.

Type 4 languages

Feature specification of lexical items	Lexicalization of spatial roles	*Uzbek*, Turkic (Boeschoten 1998) LIs	Lexicalization
C: <Source, Goal>	Source: A+C	C = *-n*	Source: *-Dȧ-n*
B: <Goal, Place>	Goal: B	B = *-Gȧ*	Goal: *-Gȧ*
A: <Place>	Location: A	A = *-Dȧ*	Location: *-Dȧ*

Table 9

We can also have the lexicalization type in Table 10, the most well-known representatives of which are the Ugro-Finnic languages (compare the *Estonian* example in (3)). Table 2, too, contains languages of that type.

Finally, one can imagine a language with spatial markers specified as in Table 11.

So far, I have not found any language in the sample exhibiting this lexicalization pattern. A closer look at Table 11 reveals why. In such a language, a Goal path would be lexicalized by the a complex bi-morphemic marker consisting of the "place-morpheme" A and the "goal-morpheme" B. Thus, A would be inserted under the Place head, while B would be inserted under the Goal head, as shown in the diagram below.

Type 5 languages

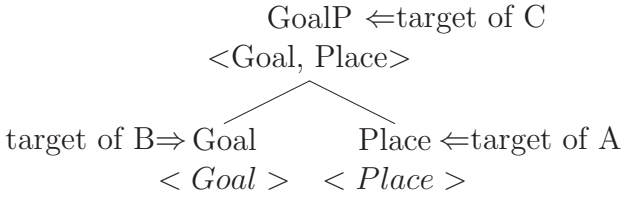
Feature specification of lexical items	Lexicalization of spatial roles	*Estonian*, Finnic (Viitso 1998) LIs	Lexicalization
C: <Source, Goal>	Source: A+C	C = *-t*	Source: *-l-t*
B: <Goal>	Goal: A+B	B = *-le*	Goal: *-l-le*
A: <Place>	Location: A	A = *-l*	Location: *-l*

Table 10

Feature specification of lexical items	Lexicalization of spatial roles	Example language
C: <Source, Goal, Place>	Source: C	not found
B: <Goal>	Goal: A+B	
A: <Place>	Location: A	

Table 11

(26)



When the spell-out procedure reaches the node GoalP, however, the lexicon provides an alternative way to lexicalize it, namely, by the lexical item C, which is specified for a superset of the features contained in the node. By virtue of *Corollary Two* of the *Elsewhere Condition*, spell-out of GoalP by C is the preferred option. Put in other words, the availability of C blocks the lexicalization of GoalP by A+B.

4.2.2 Location=Goal≠Source

Let us now turn to the syncretism pattern Location=Goal≠Source. Languages that fall into this group have one marker that is ambiguous between a Goal path and a Location, and a second marker that expresses a Source path. In this subsection, I am going to show how such languages can be modeled by applying the syntactic structure for a decomposed Path, plus the *Superset Principle*.

An example for a language with the pattern mentioned above is the Tibeto-Burman language *Cogtse Gyarong*, spoken in the Sichuan province of China. According to Nagano (2003), the case ending *-s* in *Cogtse Gyarong* has both a Loca-

tive (AT) and an Allative (TO) function. There is a second case suffix, *-y(i)*, that has an Ablative (FROM) function. I suggest the following feature specification of the case endings in *Cogtse Gyarong*.

Type 6 languages

Feature specification of lexical items	Lexicalization of spatial roles	*Cogtse Gyarong* (Nagano 2003) LIs	Lexicalization
B: <Source, Goal, Place>	Source: B	B = *-y(i)*	Source: *-y(i)*
A: < Goal, Place >	Loc = Goal: A	A = *-s*	Loc = Goal: *-s*

Table 12

Notice that there is no dedicated case ending for the locative spatial role only. Thus, when it is necessary to lexicalize a Place head in a locative structure, the only way to go is to use the endings *-s*, which also lexicalizes Goal structures. Under a view of lexicalization governed by the *Superset Principle*, the suffix *-s* can legitimately lexicalize a Place head, since the latter is a sub-constituent of the maximal structure *-s* can spell out.

There exists another strategy for a language to exhibit the syncretism pattern Location=Goal≠Source. This is the strategy employed by *Classical Tibetan* (Beyer 1992) and *Meithei* (Chelliah 1997), for instance. These languages have a Source marker that lexicalizes only the Source head. Hence, the Source expression morphologically contains the Location=Goal marker, as can be seen in Table 13.

Type 7 languages

Feature specification of lexical items	Lexicalization of spatial roles	*Meithei*, Kuki-Chin (Chelliah 1997) LIs	Lexicalization
B: <Source>	Source: A+B	B = *-gi*	Source: *-tə-gi*
A: < Goal, Place >	Loc = Goal: A	A = *-tə*	Loc = Goal: *-tə*

Table 13

To recapitulate, there are two ways for a language to exhibit the pattern Location=Goal≠Source pattern and the difference lies in the feature specification of the Source marker. What is common for such languages, however, is that they lack a dedicated locative marker endowed with the feature <Place>. As a consequence, such languages employ the Goal maker <Goal, Place> to lexicalize also a Place structure.

4.2.3 Location=Goal=Source

In this subsection, I turn to languages with spatial markers that do not participate in the distinction between Location, Goal paths and Source paths. In such languages, there is one adposition or case ending that is used in all three cases. There are, in principle, two strategies to derive this pattern. One way is to assume a single spatial marker A with the specification <Source, Goal, Place>. Such a spatial marker will be then able to lexicalize a Source path, when it recruits its full feature set. It will lexicalize a Goal path and Location, when it does not make use of its <Source> and <Source> plus <Goal> features, respectively. A will be then three-way ambiguous between a Source marker, a Goal marker and a Locative marker. Interestingly, there seem to be no languages with such three-way ambiguous markers.

What we find instead, are languages with a unique spatial marker, which has a *default locative* interpretation. In order for this marker to acquire a Source or a Goal meaning, it has to occur with the right verb. The Bantu language *Tswana* offers an illustration (data from Creissels 2006).

(27) a. Monna o dule motse-ng.
1*man* 3SG *leave*.PERF 3*village*-LOC
'The man left the village' (Source)

b. Monna o ile motse-ng.
1*man* 3SG *go*.PERF 3*village*-LOC
'The man went to the village' (Goal)

The same pattern is replicated by the Mande language *Wan* (Nikitina 2006). In *Wan*, the same prepositional phrase is interpreted as expressing Location, Goal, and Source, depending on the verb. With verbs encoding Source of motion, the PP denotes Source, with verbs encoding Goal of motion, the PP denotes Goal, and with static verbs, the PP denotes Location.

(28) a. `ã gō kālɛ̄ gó.
3.PL *leave*.PAST *forest in*
'They left the forest' (Source)

b. `ã gā kālɛ̄ gó.
3.PL *go*.PAST *forest in*
'They went to the forest' (Goal)

c. `ã yā kālɛ̄ gó.
3.PL *sleep*.PAST *forest in*
'They sleep in the forest' (Location)
(Nikitina 2006:11)

In the light of these data, I suggest that the spatial markers in *Tswana* (*-ng*) and *Wan* (*gó*) are specified only for the feature <Place>, hence the default locative interpretation noted by Creissels (2006). Regarding Goal and Source structures, I argue that it is actually the verb that spells out the Goal and Goal+Source heads, respectively. Thus, I propose the following specifications for the relevant lexical items in the *Wan* examples above.

Type 8 languages

Feature specification of lexical items	Lexicalization of spatial roles	*Wan*, Mande (Nikitina 2006) LIs	Lexicalization
C: <Verb, Source, Goal>	Source: C+A	C = *gō*	Source: *gō* + *gó*
B: <Verb, Goal>	Goal: B+A	B = *gā*	Goal: *gā* + *gó*
A: <Place>	Location: A	A = *gó*	Location: *gó*

Table 14

So, in languages syncretizing all three spatial roles, I propose that there is one spatial marker with the feature <Place>, which is *locative only*. The Source and Goal readings of this marker are triggered only in the presence of certain verbs that lexicalize the Source and Goal heads in the structure. In a sense, type 8 languages are like type 5 languages (*Estonian, Hungarian*), the only difference being that the former employ a verb to lexicalize the Source and Goal heads and a case marker or adposition to lexicalize a Place head, while the latter make use exclusively of case markers (or adpositions) to spell out all three heads.

4.3 The unattested patterns

4.3.1 Location=Source≠Goal

Let us now turn to those syncretisms between the three spatial roles that are unattested among languages. I start the discussion with the pattern Location=Source≠Goal. A language representing this lexicalization type has one marker that syncretizes the notions of Location and Source, and a separate marker to express Goal. One possible feature specification of these two markers is as presented in Table 15.

This hypothetical language will use B to lexicalize a Source path, since no other lexical item has the relevant feature <Source>. Likewise, B will lexicalize Location by virtue of being the only entry with the feature <Place>. Now, turning to Goal paths, we can imagine a scenario in which B lexicalizes Place and the lexical item A, specified as <Goal> lexicalizes the Goal head. The result will be that the Goal expression will be morphologically complex, still different from the locative and Source expression. Notice, however, that GoalP can be lexicalized by one item

Feature specification of lexical items	Lexicalization of spatial roles	Example language
B: <Source, Goal, Place> A: <Goal>	Source: B Goal: B+A Location: B	not attested

Table 15

only — B, as B has the features <Goal, Place> and can be inserted straight into the GoalP node. In other words, B will "block" the formation of the bi-morphemic spatial marker A+B. To conclude, this type of lexicalization goes against *Corollary Two* of the *Elsewhere Condition*

The hypothetical feature specification of the lexical entries in Table 15 led us to a violation of one of the lexicalization rules we adopt and therefore, to an impossible language. An alternative way to model a language exhibiting this pattern is presented in Table 16:

Feature specification of lexical items	Lexicalization of spatial roles	Example language
B: <Source, Goal, Place> A: <Goal, Place>	Source: B Goal: A Location: B	not attested

Table 16

In this language, B will lexicalize a Source path, as it has the right feature specification. The item A will equally successfully lexicalize a Goal path, since it is a perfect match. Concerning the lexicalization of a locative structure, we want it to be lexicalized by B, so that the Source and the Location marker end up being syncretic. B can, in fact, spell out Place, as the latter is a sub-constituent of the entire structure B is specified for. However, the existence of A will prevent lexicalization of Location by B. The reason is that A itself can spell out Place and therefore A and B are competitors. The domain of application of A is, however, a proper subset of the domain of application of B. Therefore A will apply to express Location, thus blocking B from lexicalizing the structure. Or, put in simple terms, A will spell out Place because it has fewer superfluous features (<Goal>) than B (<Source, Goal>).

Summing up, the lexicalization pattern Location=Source≠Goal is correctly predicted to be impossible by the decomposed Path structure I defend and the lexicalization theory I adopt. This lexicalization pattern is, in fact, an instantiation

of the so called *A-B-A syncretism discussed by Bobaljik (2007) and analyzed by Caha (2008) in the light of the *Superset* spell-out theory.

4.3.2 Location≠Goal=Source

Finally, I turn to the last logically possible syncretism pattern Location≠Goal=Source. A representative of this type would be a language that has one dynamic spatial marker, expressing the notion of Path (no matter whether Goal or Source oriented), and a second, stative, marker for the notion of location. In other words, this language will have spatial markers expressing the opposition between ± directional, but giving no information as to the orientation of the directional marker. One can imagine that languages exhibiting this pattern have the following two markers:

Feature specification of lexical items	Lexicalization of spatial roles	Example language
B: <Source, Goal, Place> A: <Place>	Source: B Goal: B Location: A	not attested

Table 17

The same pattern is obtained if we exclude the feature <Place> from the specification of the lexical item B.

Feature specification of lexical items	Lexicalization of spatial roles	Example language
B: <Source, Goal> A: <Place>	Source: A+B Goal: A+B Location: A	not attested

Table 18

As the reader can verify, the lexicalization types in Tables 17 and 18 do not violate any of the assumed spell-out rules regulating the insertion of phonological material into the syntactic structure I propose. As a consequence, these language types are expected to be perfectly grammatical. And yet, they appear to be unattested. This disturbing observation suggests the involvement of a third factor in the lexicalization of the three spatial notions.

Let us take a closer look at the "dynamic" portion of the syntactic structure for paths. Under the Path decomposition analysis argued for here, the Goal projection

is dominated by a Source projection. The Source head is the locus of a reversal operation which applies to the Goal phrase. Thus, in a sense, a Source path is the "opposite" of a Goal path. From this point of view, a language with a Goal=Source syncretism has one spatial marker that expresses a certain meaning and its opposite. From a pragmatic point of view it is unacceptable to have such a contradictory lexical item.[6] I suggest that it is for that reason that the syncretism pattern Location≠Goal=Source is unattested, although it is grammatical.

5 Conclusion

In this paper, I investigated the lexicalization of Location, Source and Goal paths in languages world-wide. I started out with an investigation of the syncretism patterns for Source, Goal and Location markers across languages. I noted a curious fact: three out of five logically possible syncretisms are widely attested, whereas the remaining two are unattested. This motivated a detailed analysis of paths with the purpose of solving this riddle. For this reason, I explored the way Source and Goal paths are expressed in languages, mainly focussing on their morphological composition. This investigation lead to the conclusion that Source paths tend to be more complex than Goal paths such that the former morphologically contain the latter. I took this to indicate a more complex underlying syntactic structure.

On the basis of these findings, I argued for a decomposition of the Path head in the syntactic structure for spatial expressions. Thus, I proposed the existence of a Source head and a Goal head instead of the unique Path head. The Goal head is the lower directional head and it takes a Place projection as a complement. The Source head dominates the Goal head, and they are both present in a Source path. Thus, the main point in this paper is that there does not exist a unique path head in the syntactic structure for directionals.

After presenting the underlying syntactic structures for Goal and Source paths, I discussed their spell-out. I adopted a lexicalization principle saying that a lexical item can spell out both terminal and non-terminal nodes, which allows it to lexicalize more than one heads in the structure. In addition, a lexical item is allowed to spell out only a (sub-)consituent of the structure it can lexicalize according to its feature specification (*The Superset Principle* of Starke 2007 and Caha 2008). Further, I adopted the *Elsewhere Condition* of Kiparsky (1973) with its two implications for the lexicalization of syntactic structure. In the remainder of the paper, I went through each of the syncretism patterns for Source, Goal and Location and showed how the syntactic structure I defend and the lexicalization principle I adopt

[6]For potential counterexamples with verbs having both an ornative and a privative meaning like *seed*, *trim*, etc, see Buck's (1997) argument against this claim.

provide an explanation for the existence of the attested syncretism strategies and the non-existence of the non-attested.

Finally, there are two important issues related to the subject of this paper which I did not go into. The first one concerns the so called Ablative-Locative transfer (Mackenzie 1978): a historical process where a (originally) Source marker starts being used as a locative marker. Under my proposal, this is quite unexpected and requires serious research. The second issue relates to the role of the verb in the lexicalization of directional structures. I discussed some cases, where the verb spells out a directional head thus licensing a specific interpretation of the phrase below. It is interesting to explore this question some more, as there are universal tendencies for certain verbs to license particular paths, e.g. deictic verb trigger a Source or Goal interpretation of a locative expression, depending on whether they are oriented towards the speaker or away from the speaker, respectively.

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