

Incorporated verbal classifiers in a predictive typology of noun incorporation

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1. Introduction

This paper starts from the premise that syntactic structure serves as a mechanism to constrain the possible interpretations of the elements it brings together.¹ That is, assigning a particular set of elements into a syntactic configuration does not just link them together for any old combined interpretation, but does so in a structured way that systematically excludes certain ranges of possible collective interpretations, and permits still others.

The simplest examples are found in isolating languages like Mandarin or English, where lexical elements surface in collocation rather bare of functional morphology, such that they can be read off into a variety of possible syntactic structures, and from that, an equal variety of semantic interpretations.

Hence for example the English $\sqrt{\text{root}}$ *run*, which is on its own surface-ambiguous for unergative, transitive-causative, and middle readings; for comparable examples in Mandarin, see Lin 2001.

Such cases are something of a red herring, however. They show less a lack of functional structure than a lack of overt functional morphology. And of course many polysynthetic languages (among others) systematically disallow such surface alternations, overt morphology being always or typically used to manifest these contrasts. The more telling cases instead are the rich possible range of thematic relationships that the nominal elements of lexical compounds can hold with the rest of the structure: basic themes, locatives, and instrumentals, to name just a few.

(1) Possible thematic relations of lexical compound nominals

- | | | | |
|----|-----------------|---------------|-------------------------|
| a. | hand-cutting | <i>hand</i> | = instrument(al) |
| b. | desert-dwelling | <i>desert</i> | = locative ² |
| c. | cake-baking | <i>cake</i> | = theme |

In the present model we assume that this is because elements in compounds are merged together with little or no functional structure: bare $\sqrt{\text{roots}}$ or at best bare $\sqrt{\text{roots}}$ plus a categorizing/argument-structuring light element. The syntax constraining their possible semantics relationships is therefore minimal. Minimal, yes, but not non-existent: arriving at an interpretation still requires assembling these elements into some specific syntactic structure---and the range of such possible structures is limited by constraints on narrow syntax representations. This notion, derived in large part from Boeckx 2008, will be a key point in subsequent discussion.

That elements in compounds have a minimal syntax is the foundation of the present claim regarding constraints on the interpretation of incorporated nominals. The literature on incorporation often opposes two claims: that nominal incorporation constructions are lexical compounds (the lexicalist); or that they are structures with phrase-like syntax (the syntacticalist). No clear consensus seems to have been arrived at, since the evidence for both views is quite strong. A middle ground is more than possible, however.

We can accommodate the evidence for both claims simply by treating incorporation structures from the start as syntactic collocations of elements carrying rather little to no functional structure. Research on phrasal idioms (e.g. Marantz 1984, *inter alia*) shows us that having demonstrable syntactic structure---a syntactic structure that systematically constraints possible meanings---does not preclude a construction from having the properties we call "lexical", namely, incomplete predictability of meaning, and unproductivity (cf. Jackendoff, forthcoming).

It is therefore no surprise that incorporation constructions could also show evidence of a syntax that runs on the same system as phrasal-level syntax---with concomitant systematic constraints on the range of possible meanings---but still show strong lexicality effects such as limited productivity, incomplete predictability of meaning, and in particular, requirements of "institutionalization" by the speech community of the kind pointed out by Mithun 1984.³

In short, we begin from the assumption that incorporated nominals enter into a real syntactic relationship with the remaining elements of the verbal complex, but that the minimal functional structure

therein, like in compounds in general, permits more than one possible syntactic-structural configuration to obtain between the incorporant and the rest of the verbal complex. Minimal syntax is not, however, *carte blanche* for any type of interpretational structure: the key assumption of this paper is that even the most minimal, scantily functional-structured syntax nonetheless is itself subject to basic constraints stemming from pure combinatorics.

With this background, we are ready to introduce the basic claim.

Starting from Wiltschko 2009's conclusion that lexical affix constructions in Halkomelem Salish are better understood as a kind of $\sqrt{\text{root}}$ incorporation---with $\sqrt{\text{root}}$ in the sense of Marantz 1997---in which the incorporant functions as a predicate modifier rather than a direct argument, we propose a radically constrained, structure-based typology of the interpretational relations that may hold between this predicate modifier and the *primary argument* (i.e. the notional absolutive) of the incorporating verbal stem complex.

Specifically, we claim that only three types of interpretational relationship may hold between the predicate modifier and the primary argument. Namely:

- (2) Possible interpretational relationships holding between predicate modifier and primary argument
 - (a) the predicate modifier restricts the argument, giving rise to a *hypernymic, classificational* relation between predicate modifier and primary argument, or
 - (b) the predicate modifier is restricted by the primary argument, giving rise to a *meronymic, part-whole* relation between predicate modifier and primary argument, or
 - (c) neither element restricts the other interpretationally, in which case the predicate modifier is interpreted as an independent quasi-argument of the stem-complex predication.

We show that this restrictive typology predicts the existence of precisely the three core contrastive classes of incorporant reported by Wiltschko 2009 (building on Mithun 1984 and especially on Rosen 1989, *inter alia*): respectively,

- (3) Resultant semantic typology of incorporants
 - (a) incorporated verbal classifiers/synonyms of themes
 - (b) inalienably-possessed body-part incorporants
 - (c) incorporants interpreted as instrumentals, locatives, and other quasi-arguments of the stem-complex predication.

We propose that this tripartite typology is no accident, but rather comes directly from assuming that the minimal set of possible outcomes of asymmetrical binary Merge--- $[\alpha[\beta]]$, $[\beta[\alpha]]$, and $[\alpha]$ alone (i.e. no Merge)---is also the maximal possible set. In short, we derive this typology from nothing more than asymmetry-constrained combinatorics as the syntactic input to semantic interpretation. This approach is inspired by the closely related observation of Boeckx 2008, that well-formed syntactic projections, being the products of minimal asymmetrical binary Merge, may project at most three local nodes: minimal, intermediate, and maximal.

To ground this theoretical account empirically, we bring in new evidence from Penobscot, an Eastern Algonquian language of central Maine, U.S.A., which we present as a further unambiguous instantiation of this tripartite typology. Its till recently undescribed verbal classifier system---along with those of nearby relatives---we show to manifest exclusively through the morphosyntactic category traditionally known as the Medial (Goddard 1990)---the very same category that also (and exclusively) includes body-part and quasi-argumental incorporants.

2. Minimal system of possibilities for restriction

The core observation of this paper is that the semantic restriction possibilities of nominal incorporants are

constrained to three basic relations. These three relations, given below, come directly from the simple combinatorics of asymmetrically Merging two elements, with the assumption that that asymmetric Merge is the necessary precursor for interpreting a restriction relation between the two.

(4) Possible (semantic-) syntactic outcomes of a Merging of two elements α and β

- | | | | |
|-----|-----------------------------|------------------------|----------------------|
| (a) | α restricts β | = $[\alpha[\beta]]$ | |
| (b) | β restricts α | = $[\beta[\alpha]]$ | |
| (c) | neither restricts the other | = $[\alpha]...[\beta]$ | = not Merged locally |

A fourth possibility is still logically possible, namely, that the two elements restrict each other. I exclude this possibility from the system on the grounds that it is an active type of relational symmetry (rather than the vacuous symmetry of the (c)'s "neither" option). This being precisely the kind excluded by the demand---argued for in Boeckx 2008, among many others---that syntactic-merge relations must always be asymmetric.

Because I lack training in formal semantics, I will not attempt to offer any kind of formalization for the notion of restriction, or indeed precisely how semantics is read off of and thus constrained by syntax. Needless to say, audience suggestions in this direction are welcome. I proceed under the premise that the core point is maintainable even with this informal notion of restriction (combined with an assumption that syntax-to-semantics mapping is consistent), and should hold across any number of formalizations thereof.

The crucial constraining assumption of this system is a narrow type of locality: that the input to this kind of restriction interpretation is this minimal Merge pairing: it does not wait for further structure to be built. This limits the range of possible $[\alpha]$ -to- $[\beta]$ relations to the set above. The fact that there are this system can contrast only three options is a property shared with many other components of grammar---e.g. X-bar structure, person-feature contrasts, basic tense contrasts, most deictic distality contrasts, and so on---and is explained by Boeckx 2008:ch4 as a direct outcome of a system that can only build representations via binary Merge.

When we look at how this sort of system plays out at the minimal-syntax structural scale of $\sqrt{\text{root}}$ incorporation, what we see emerging are two kinds of part-whole relations, and one "elsewhere" category. These are as follows:

When the nominal incorporant as predicate modifier restricts the primary argument, it limits the range of possible primary arguments to the semantic class denoted by the nominal incorporant. This is the hypernymic, classificational relation between predicate modifier and primary argument. Here the part-whole relation is between the class established by the hypernym (or synonym!) and the primary argument as a token thereof.

The other type of part-whole relation is the more salient one: here it is the primary argument that restricts the reference of the nominal incorporant: the latter is defined only within the domain established by the former---giving rise to a meronymic relation, a canonical case of the incorporant as the part to the primary argument's whole.

Finally, when neither argument restricts the other, the nominal incorporant necessarily interprets neither as a hypernymic nor a meronymic extension of the primary argument. Instead it typically interprets as a separate quasi-argument, typically a notional oblique: an instrumental or locative element that is involved in the same event as the primary argument, but is not in a restriction relation with it.

These three possibilities translate directly into three core contrastive categories of incorporant reported by Wiltschko 2009 (building on Mithun 1984 and especially on Rosen 1989, inter alia):

(5) Three categories of incorporant

- | | |
|-----|---|
| (a) | incorporated verbal classifiers/synonyms of themes |
| (b) | inalienably-possessed/body-part incorporants |
| (c) | incorporants interpreted as instrumentals, locatives, and other quasi-arguments of the stem-complex predication |

An incorporant in a hypernymic/synonymic relation to the primary argument is a verbal classifier; one in a meronymic relation is an inalienably-possessed/body-part incorporant, and one that interprets into the event structure as an independent element, neither restricting nor being restricted by the primary argument, accounts for the more heterogenous elsewhere-class set of incorporants that interpret as instrumentals,

locatives, and other quasi-arguments of the stem-complex predication.

In the next section, we examine these three categories as they emerge from Wiltschko 2009's discussion of Salishan lexical affixes.

3. A tripartite typology of incorporant interpretation: Wiltschko 2009

In her arguments in support of Salishan lexical suffixes as bare $\sqrt{\text{root}}$ predicate modifiers, Wiltschko 2009 identifies two types of selectional restrictions that the incorporant can place on the Theme argument of the stem. First is that the incorporant doubles or is a hypernym to the primary argument DP, as in (6a). Second is as possessee of the primary argument DP, as in (6b). Note that Wiltschko 2009 refers to these relationships in equivalent converse terms.

(6) Hypernymic and meronymic relationships between incorporant and primary argument Wiltschko 2009:214:(39)

- | | | | | |
|----|--|-------------------------|-------------------------|---|
| a. | th'éxw-wíl-tes
wash-dish-trans-3s
'He washed <u>the dish</u> .' | te lo:thel
det dish | | → DP = <i>hyponym to LEXSUFF</i> |
| b. | th'éxw-xál-tes
wash-foot-trans-3s
'Strang washed Konrad's <u>foot/feet</u> .'
lit.: 'Strang <u>foot</u> -washed Konrad' | te Strang
det Strang | te Konrad
det Konrad | → DP = <i>possessor of LEXSUFF</i>

[REF: accent on th'éxw: check with Martina] |

These two categories of Theme restriction explain readily from the present minimal structural model.

The first, the doubling or classificational incorporant, instantiates the case of the incorporant predicate modifier restricting the semantic range of possible primary arguments to either a synonym or hyponym of the classificational element.

The second, the possessor-raising or possessor-binding construction, sets up the incorporant as the part to the primary argument's whole. Its role in the event structure is as a meronymic element, dependent on and an extension of the primary argument. That is, the primary argument restricts the meaning of the incorporant to being strictly a subcomponent inheritor of the primary argument's own thematic role.

Wiltschko 2009:215 argues that the possessor interpretation of the direct object (in present terms, the primary object) is a possessor-binding effect, driven by the need for an incorporated $\sqrt{\text{root}}$ denoting a inalienable possessee such as a body part to be construed with an appropriate possessor.

This is nicely compatible with the present model, which captures that construal (at least to this informal extent) as a meronymic restriction by the possessor Merged above it.

Wiltschko 2009:216 further notes that because $\sqrt{\text{roots}}$ lack the functional structure necessary to project syntactic argument structure, the possessor-binding effect implies that inalienable possessors are semantic rather than syntactic arguments.

With mild adjustment, this too aligns with the present claim: in the absence of additional mediating functional structure, Merge alone can only create contrasts from its ordering, and so admits of only two direct restriction relations between the incorporant and the primary argument: the hypernymic and the meronymic. The semantic-argument relation of meronymy is simply than the semantic effect of one of the barest possible syntactic relations.

We now turn to the third option: that neither element restricts the other. Citing Mithun 1984:861, Wiltschko 2009:214 observes that "[p]atients of transitive and intransitives, locatives, and instruments are incorporated." Here as before we treat patients (= themes) as cases of synonymy with the primary argument under classificational-doubling: (6a).

But the locative (7) and instrumental (8) uses of incorporants remain to be explained.

- | | | |
|-----|-------------------------------|---|
| (7) | Locative uses of incorporants | (Wiltschko 2009:214:(37), cited from Suttles, 2004:290) |
| a. | ʔəłtən-áθən | (Downriver Halkomelem) |

eat-margin
'eat along the way'

b. x^w-qə-wíl-t
inward-accompany-canoe-trans
'go with him in a canoe'

(8) Instrumental uses of incorporants (Wiltschko 2009:214:(38), cited from Suttles, 2004:290)

a. k^wc-áləs (Downriver Halkomelem)
see-eyes
'see with one's eyes'

b. x^w-ʔəw-cəs-t
obl-understand-hand-trans
'show him with the hands how something is done'

Here again the categories cited by Wiltschko 2009 fall right out of the minimal syntactic structure analysis. These two types of incorporant together instantiate the third logical possibility of such limited structures: that the incorporant bears no local relation at all to the primary argument. As such, it neither restricts or is directly restricted by the primary argument, but still interprets as a component of the same event structure. These are the quasi-argument-like relations that locatives and instrumentals hold with the overall predication.

This, then, establishes that the tripartite typology of incorporant semantics laid out in §2 on model-internal grounds actually reflects the categories empirically attested for Salishan lexical affixes. In the following section, we will demonstrate that this typology can also be found much further afield, in the incorporation structures of Eastern Algonquian languages such as Penobscot and Passamaquoddy-Maliseet.

4. Verification from the other side of the continent: Penobscot and Passamaquoddy-Maliseet Medials

The striking fact, then, is that this analysis does not hold just for Salishan languages. The same tripartite categorization is found on the other end of the continent, in the Eastern Algonquian languages of Penobscot and Passamaquoddy-Maliseet, and indeed appears to be shared across the Algonquian family.⁴

Here the candidates for incorporated nominal are the morphological class known as *Medials* (Bloomfield 1946, Goddard 1990, O'Meara 1990, Valentine 2001, Rhodes 2003, Drapeau 2009, Dunham and Barrie 2009, Mathieu 2009).

Their status as incorporated nominals has been controversial on occasion (cf. especially Denny 1989), precisely because they are so deeply lexicalized, and do not participate in the easy and productive alternations between freestanding stem and incorporant reported for N. Iroquoian languages (Baker 1988, 1996, 1997), nor the evident referential interpretations taken to support a standard movement analysis of incorporation (Baker 1988; 1996:289, 307).

That said, Medials do exhibit an identical set of core incorporant properties---and specifically, these fall into precisely the same categories as Salishan lexical affixes.

First off, we find classificational Medials (9), showing the same distinctions of shape-classification familiar from East/SE Asian-areal languages such as Mandarin, Hmong Daw, and Thai. Notably, Algonquian shape-classifying Medials are morphologically separate from verbal Roots of handling and stance, unlike in Athabaskan languages, even as they form much the same lexical collocations. Hence in Penobscot we find classificational Medials contrasting the same basic features of dimensional rigidity (STICK vs. CORD vs. SHEET vs. LUMP/ROUND OBJECT), as well as negative dimensionality (HOLE) and textural manifestation (GRANULAR vs. SOFT/STICKY MASS vs. LIQUID).

(9) Classificational (shape-classifier) Medials

- <i>ahk^w</i> -	'1D RIGID OBJECT' (< 'tree, stick')	cf. Md 枝 zhī, HmD tus
- <i>aht.ak</i> -	'1D NON-RIGID OBJECT' (< 'cord, string')	cf. Md 條 tiáo, HmD txoj
- <i>ek</i> -	'2D NON-RIGID OBJECT' (< 'skin, hide')	cf. Md 張 zhāng, HmD daim
- <i>ahpask</i> -	'3D/ROUND OBJECT/LUMP' (< 'rock')	cf. Thai ลูก lûuk
- <i>al.ak</i> -	'HOLE' (< 'hole')	cf. HmD qhov
- <i>amk</i> -	'GRANULAR MASS' (< 'sand, gravel')	
- <i>áč.ak</i> -	'SOFT/STICKY MASS' (< 'excrement')	
- <i>ap.ek</i> -	'LIQUID' (< 'water')	cf. Thai น้ำ náam

a. -*ahk^w*- '1D RIGID OBJECT' (< 'tree, stick')

nətésahk ^w təhα	'I pierce him, run him through with a spear'	(PD:453)
kinahk ^w álane	'he (bird) has a long tail'	(PD:207)

b. -*aht.ak*- '1D NON-RIGID OBJECT' (< 'cord, string')

səkhəhtákihle	'he (snake, worm) squirms, wriggles into view'	(PD:417)
matehtakíhtehsən	'there is the sound of throbbing (as when a bowstring flutters)'	(PD:255)
cf. matéhtehsən	'it makes the sound of an impact'	(PD:255)

c. -*ek*- '2D NON-RIGID OBJECT' (< 'skin, hide')

matékəlaməsən	'it (fabric, sheet, hide, tent) is moved by the wind'	(PD:262)
cf. mátəlaməsən	'it (a solid object, stick, twig, door) is moved by the wind'	(PD:262)

d. -*al.ak*- 'HOLE' (< 'hole')

nəkəpəlákəhα	'I close the opening of him, close the hole in him'	(PD:190)
cf. nəkəpahα	'I close him'	(PD:191)

e. -*ahpask*- '3D/ROUND OBJECT/LUMP' (< 'rock')

wəsəkháhpskohsən	'she came waddling forth (Sbd)'	(k&p:4)
kináhpskətəpe	'he has a big round head'	(PD:207)

f. -*amk*- 'GRANULAR MASS' (< 'sand, gravel')

kətəwámkihpo	'he eats with a sandy or grinding noise'	(PD:201)
pəwámkihle	'II: it is a stretch, an extent of sandy, gravelly beach; AI: he goes along the beach, proceeds along the beach'	(PD:374)

g. -*áč.ak*- 'SOFT/STICKY MASS' (< 'excrement')

kəlaməčákihle	'he/it is sticky, viscous'	(PD:187)
cf. kəlámihle	'he/it is adhesive, clinging, adherent'	(PD:187)
matečákihpo	'he makes an unpleasant noise in eating'	(PD:255)

h. -*ap.ek*- 'LIQUID' (< 'water')

nəmətəpékənəmən	'I stir it (water)'	(PD:262)
cf. nəmátənəmən	'1) I fight it, 2) I move my hand, I move it with my hand'	(PD:262)

matepékələmsən	'there is rippling of the water by the wind (audible)'	(PD:255)
aləpektáhike	'he splashes (so)'	(PD:47)

These are the instances of hypernymic relation between incorporant and primary argument. Synonymic relations are found in cases where the incorporant names the notional object being acted upon---i.e. the Theme---often the object that names the activity (10).

(10) Medials: Theme/notional object of activity

talahkəlosənáhike	'he is making a <u>fence</u> , <u>stockade</u> '	(PD: 449)
alahkáhike	'1) he tills, cultivates the <u>soil</u> , 2) he hoes'	(PD:32)
alaskəsəwe	'he mows, cuts <u>grass</u> '	(PD:35)
alihk ^w ekátike	'he chews <u>gum</u> , <u>pitch</u> '	(PD:50)

The meronymic relation is richly attested in the robust and evidently productively used set of body-part Medials, a familiar and well-established type of incorporant (Mithun 1984:858; Baraby et al. 2002). In (11) we see examples of body-part Medials participating in part-whole relationships with the primary argument of the stem, be it transitive (11a) or intransitive (11b):

(11) Medials as incorporated body-part nominals

a. Body-part Medials: transitive: part-whole relations with core argument

wək ^w ask ^w ətəpéhtəhən	'he struck him dead on the <u>head</u> (Sbd)'	[CQ gloss] (késihlát:24)
cf. nək ^w ásk ^w təhə	'I kill him with a blow (by axe, club, etc.)'	(PD:231)
nəkələtonépilə	'I tie his <u>mouth</u> (with string, cord, thong)'	(PD:186)
cf. nəkəlápilə	'I tie him, tie him up, tether him'	(PD:186)
nəməsáləwephə ⁵	'I catch him quickly by the <u>tail</u> , I grab him by the <u>tail</u> '	(PD:275)
cf. nəməsiphə	'I catch him'	(PD:275)

b. Body-part Medials: intransitive: part-whole relations with core argument

matələwéhposə	'he wags his <u>tail</u> '	(PD:262)
pilsəsítehle	'his <u>foot</u> is numb, becomes numb'	(PD:396)
milihptinétotam	'he gestures, talks with his <u>hands</u> '	(PD:281)
sehšalakik ^w elámsokə	'the wind makes his <u>eyes</u> water, his <u>eyes</u> water from the wind'	(PD:422)

The third set, of "elsewhere" relation Medials is also well-established: hence we have Medials naming the instrument involved in the verbal event structure (12),

(12) Medials: instrument-naming

nəməlak ^w ámkəhə	'I cover him with <u>earth</u> , <u>soil</u> '	(PD:274)
nəməlak ^w ipákəhə	'I cover him with <u>leaves</u> '	(PD:274)
nəməlak ^w ipisákəhə	'I cover him with <u>bushes</u> '	(PD:274)
məlak ^w askihkəwáhokə	'he lies covered with <u>grass</u> '	(PD:274)
məlak ^w ékhosə	'he pulls the <u>covers</u> over himself'	(PD:274)
nəkəpáhkehkəwə	'I block/obstruct his passage with <u>earth</u> , <u>dirt</u> '	(PD:190)
nənàçi-kàlapkéhtəhə	'I go frighten them out' [CQ: by hitting the <u>ground</u>]	(S:30)
cf. nəkəlápətəhə [sic]	'I (purposely) frighten an animal away.' [sic: I...him]	(S:30)

along with Medials naming other oblique, locative notions like an embedding medium (13),

(13) Medials: locative/embedding medium

nəkətəláyákhmən	'I remove <u>snow</u> from it, I uncover it from <u>snow</u> '	(PD:183)
wəčkawəláyákhoso	'he approaches through the <u>snow</u> '	(PD:461)
ketəlák ^w hike	'he removes something, things from the <u>ice</u> '	(S:30)

and, similarly, also Medials naming the means/medium through which event manifests---a case that rather interestingly shows how metaphorical extension can blur the distinction between locative and instrumental (14).

(14) Medials: locative/extended instrumentals

wəsàkhi-kàtəwəlák ^w ihlən	'he came into view in the sound of crackling <u>ice</u> '	(S:30)
matélák ^w ihle	'the <u>ice</u> makes a noise in moving or cracking, the <u>ice</u> sounds, there is a sound of moving ice'	(PD:255)
matélák ^w ihtan	'the <u>ice</u> roars in the current, there is a sound of <u>ice</u> flowing in the water'	(PD:255)
mət ^k amikíhpote	'the <u>earth</u> trembles, there is an <u>earthquake</u> '	(PD:262)
alihkəwákihle	'he/it <u>bleeds</u> '	(PD:50)

The categories seen for Salishan incorporants in Wiltschko 2009, which build on much earlier work in N. Iroquoian, especially Mithun 1988, appear to exhaustively cover all known instances of Medial usage in Penobscot. Examination of the closely related Passamaquoddy-Maliseet language so far suggests the same for that language, and indeed, a preliminary look at the family as a whole has yet to turn up any unexpected uses of Medial use at all.

5. Conclusion

We conclude, then, that the three categories of incorporant listed in (15) are empirically well-supported in at least Salishan and Algonquian languages (and, evidently, not a few others: cf. especially Mithun 1988's survey).

(15) Three categories of incorporant

- (a) incorporated verbal classifiers/synonyms of themes
- (b) inalienably-possessed/body-part incorporants
- (c) incorporants interpreted as instrumentals, locatives, and other quasi-arguments of the stem-complex predication

These in turn emerge directly from a theoretical model based on a claim that incorporants engage a thoroughly bare syntax, using nothing more than ordered, asymmetric Merge, with no intervening functional structure, to give rise to a correspondingly rarefied set of consistently contrastive semantic restriction relations.

(16) Possible (semantic-) syntactic outcomes of a Merging of two elements α and β

- | | | | |
|-----|-----------------------------|------------------------|----------------------|
| (a) | α restricts β | = $[\alpha[\beta]]$ | |
| (b) | β restricts α | = $[\beta[\alpha]]$ | |
| (c) | neither restricts the other | = $[\alpha]...[\beta]$ | = not Merged locally |

This is a welcome result: broad empirical coverage derived from a minimalist theoretical model.

Many questions remain, however, in this preliminary survey.

First there is the obvious need for a more rigorous and precise semantic formalism for "restriction", and its relation to actual syntax---in particular, clarifying the mechanism by which "neither restricts the other" configurations reach oblique locative/instrumental interpretations. This again is where I appeal to you, the better semantically-trained audience, for help.

Beyond this, we must also concede a basic methodological problem: how exactly do we find and define

these classes, and how do we falsify them? Particularly when there is built into the system an explicit "elsewhere" class to dump all the outliers and exceptions?

Here two observations offer some solace. First, innumerable linguistic models make use of elsewhere components, since these are the logical outcomes of having true asymmetries in contrast-building representations. Secondly, the categories established are strikingly robust across at least three North American language families. Third, the existence of precisely two sharply and closely defined categories, plus one "elsewhere class", is not stipulated post hoc but derived from rather generally supported principles of narrow syntax.

Such macro-categories are reminiscent of Dowty 1991's macro-roles, and should be, since both are the product of the most basic possible narrow-syntactic structural relations; in the domain of polysynthesis, they constrain combinatorial interpretation of lexical-syntactically complex structures. So while the present model does not exclude the possibility of subcategories of nominal incorporant, it does sharply require that all fall into one of these macro-categories.

Assuming the essence of the present analysis stands up to further empirical testing, it offers a useful rubric for structuring the range of possible meanings of incorporants. It may also offer a potential insight into the interface between narrow syntax and semantic interpretation.

6. Notes

¹ Thanks to Joris Weimar for help on basic combinatorics, to Cedric Boeckx and Martina Wiltschko for the basic inspiration, and for the Salishan- and Algonquian-family speech communities for making this evidence (and all the other interesting ideas embedded in their grammatical systems) available to us researchers. All errors are of course my own.

² It is an open question as to whether many compound-internal thematic locatives---especially those indicating means of conveyance, but also even locations of actions and states---could also be interpreted as metaphorical instruments.

³ The last of these being nothing more than the same basic requirement holding over simple monomorphemic lexemes.

⁴ It should be noted that despite the vast distances between the present locations of these source languages, Algonquian languages may well have been historically adjacent to Salishan ones (at least one still is), and indeed efforts have been made to show evidence of early contact (Bakker 2007). Even if this system could be attributed to early borrowing, its stability over time and space suggests that it is more than a regional quirk.

⁵ Ms. <ɲəməsáləwəphə>, an obvious typographical error.

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