

Araucanian: Mapudungun

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Mapudungun is the primary member of the small Araucanian family—its greater genetic affiliation is uncertain—and is spoken by some 300,000 Mapuche people in central Chile and adjoining areas of Argentina (Augusta 1903, Smeets 1989, Salas 1992, Loncon Antileo 2005). The most common word order is Subject-Verb-Object, but word order is fairly free; the subject often comes after the verb instead of before it, and the object sometimes comes before the verb rather than after it (Smeets 1989, Loncon Antileo 2005). Noun phrases are not marked for case, but agreement with both the subject and the object appears on the verb in a way that is sensitive to the person hierarchy. The language can be classified as polysynthetic in both the informal sense and in the more technical sense of Baker (1996) (Baker 2006).

Compounding is frequent and productive in Mapudungun, and constitutes an important part of the language's overall polysynthetic quality. Different types of compounds can be distinguished, with some crosscutting similarities. Perhaps the most interesting theoretical issues that are raised by compounding in Mapudungun stem from the fact that different ordering principles apply to different kinds of compounds. These principles are at least partly independent of what categories are involved in compounding. We illustrate this by discussing in some detail the three most prominent kinds of compounding in Mapudungun: V+N compounding, N+N compounding, and V+V compounding. We then touch more briefly on other sorts of compounds in the language, including those that contain an adjectival root.

1. Verb+Noun Compounding

The best-known and best-studied type of compounding in Mapudungun is the joining of a verb root and a noun root to form a larger verbal stem. Two full-sentence examples that contain this sort of compounding include:¹

- (1) a. Ñi chao kintu-waka-le-y. (Sa:195)
my father seek-cow-PROG-IND.3sS
'My father is looking for the cows.'

¹ The data that this article is based on comes from four main sources, which we abbreviate as follows: A, Augusta 1903; Sm, Smeets 1989; Sa, Salas 1992; EL, Elisa Loncon Antileo 2005 and/or personal communication. If no attribution is given for one member of a list of examples, then it is taken from the same source as the closest example above it that has an attribution. Abbreviations used in the glosses of Mapudungun examples—for which we largely follow Smeets's conventions—include the following: 1dS, first dual subject agreement; 1sS, first singular subject agreement; 3O, third person object; 3pS, third plural subject agreement; 3sS, third singular subject agreement; ADJ, adjective; CAUS, causative; COLL, collective; FUT, future/irrealis; IMP, impeditive; IND, Indicative; INF, infinitive (also used as a nominalizer); INV, inverse; NOML, nominalizer; POSS, possessive; PROG, progressive; PTPL, participle; REFL, reflexive; TR, transitive; VBLZ, verbalizer.

- b. Ngilla-kofke-n. (EL)
 buy-bread-IND.1sS
 I bought the bread.

Additional examples that illustrate the scope of the phenomenon are given in (2) (Smeets 1989:421).

- | | | | | |
|-----|----|-----------------|-------------------------------|-----------------------|
| (2) | a. | entu-poñu-n | take.out-potato-INF | ‘to dig up potatoes’ |
| | b. | kintu-mara-n | look.for-hare-INF | ‘to hunt hares’ |
| | c. | llüka-lka-che-n | become.afraid-CAUS-person-INF | ‘to frighten people’ |
| | d. | kücha-kuwü-n | wash-hand-INF | ‘to wash one’s hands’ |
| | e. | nentu-antü-n | take.out-day-INF | ‘to fix a date’ |
| | f. | are-tu-ketran | borrow-TR-wheat | ‘borrow wheat’ |
| | g. | püto-ko-n | drink-water-INF | ‘to drink water’ |

In these compounds, the noun root is interpreted as the theme/direct object argument of the verb root. Examples like (1a) are thus roughly equivalent to sentences like (3), in which there is no compounding, but the verb takes a direct object in the syntax.

- (3) Ñi chao kintu-le-y ta chi pu waka. (Sa:195)
 my father seek-PROG-IND.3sS the COLL cow
 ‘My father is looking for the cows.’

The examples in (1) and (2) thus count as a kind of noun incorporation, of the sort studied for other languages in Mithun 1984, Baker 1988, 1996, Rosen 1989, and other works. The compound verbs in (1) and (2) are morphologically intransitive; for example, there is no marker of object agreement on the verb in (4) (**ngilla-waka-fi-n*, buy-cow-3sO-1sS). The incorporated noun can be referred to by pronouns in discourse, as shown in (4), but it cannot be doubled or modified by material outside the verbal complex, as shown in (5).

- (4) Ngilla-waka-n. Fei langüm-fi-n. (Baker et al. 2005)
 buy-cow-1sS then kill-3O-1sS
 ‘I bought a cow. Then I killed it.’
- (5) *Pedro ngilla-waka-y tüfa-chi (waka). (Baker et al. 2005)
 Pedro buy-cow-IND.3sS this-ADJ cow
 ‘Pedro bought this cow.’

Mapudungun V+N compounding thus counts as type III noun incorporation within the typology of Mithun 1984: incorporated nouns are active in the discourse, but cannot function as “classifiers” that are doubled by more specific external noun phrases.

Since verb-noun compounding is a (superficially) detransitivizing process in this language, nouns cannot generally be compounded with intransitive verb roots. Such compounding is possible, however, if an NP interpreted as the possessor of the noun is present in the sentence to function as its grammatical subject, as shown in (6).

- (6) a. *af-kofke-y. (EL)
 end-bread-IND.3sS
 ‘The bread ran out.’
- b. af-kofke-n
 end-bread-IND.1sS
 ‘My bread ran out.’

Baker, Aranovich and Golluscio 2005 argue that noun incorporation in Mapudungun is a syntactic process, the result of moving the head noun of the thematic object out of the noun phrase that it heads in the syntax and adjoining it to the head of the verb phrase. Their argument is based partly on the fact that the noun is active in the discourse in examples like (4), and partly on the fact that the incorporated noun root can be understood as standing in a possessee-possessor relationship with an NP (e.g., the null first person singular pronoun in (6b)) that appears outside the verbal complex, where it was “stranded” by movement of the head noun. Unlike other well-studied languages with syntactic noun incorporation, however, the noun root comes immediately after the verb stem, not immediately before it, as observed by Golluscio (1997). Mapudungun thus falsifies an absolute interpretation of Baker’s (1996) observation that syntactically incorporated nouns always appear to the left of the incorporating verb (see also Kayne (1994) on heads generally adjoining to the left of other heads). That observation turns out to be a statistical tendency, but not an inviolable universal.

The head-nonhead order of V-N compounds in Mapudungun also stands out in some language internal comparisons. The language contains occasional examples of N-V compounds as well, although this order is much less common:

- (7) a. Ngillañ-yew-fu-yngün. (EL)
 brother.in.law-carry-IMP-3dS
 ‘The two of them were brothers-in-law.’
- b. ad-tripa-n (A: 271)
 face/appearance-go.out-INF
 ‘to turn out like the original’

These examples are also different from the ones in (1)-(6) in that there is not a clear-cut predicate-argument relationship between the verb root and the noun root; if anything, the nouns seem to play a quasi-predicative role in (7). Since these examples are less productive and less semantically transparent, it is plausible to think that they are formed in the lexicon, rather than in the syntax via head movement. If so, then, the order of head and nonhead differs in Mapudungun depending on the component in which the compound is formed: syntactically constructed combinations are head-initial, whereas morphological combinations are head-final.

Morpheme order in compounds also contrasts with morpheme order in derivational morphology in Mapudungun. Verbalizing affixes are always suffixes in Mapudungun. In other words, the verbal head follows its nominal argument if the verbal

head is an affix, whereas the opposite order is characteristic of productively formed compounds. Typical are the examples in (8), which involve the common and productive verbalizing affix *-tu* (Smeets 1989:161).

- (8)
- | | | | |
|----|-------------|----------------|-------------------|
| a. | kofke-tu-n | bread-VBLZ-INF | ‘to eat bread’ |
| b. | pulku-tu-n | wine-VBLZ-INF | ‘to drink wine’ |
| c. | kitra-tu-n | pipe-VBLZ-INF | ‘to smoke a pipe’ |
| d. | tralka-tu-n | gun-VBLZ-INF | ‘to shoot a gun’ |
| e. | mamüll-tu-n | wood-VBLZ-INF | ‘to fetch wood’ |

These examples are semantically comparable to the compounds in (1) and (2) in that the noun seems to function as the internal argument of the verbal morpheme; compare, for example, (2g) with (8b). Nevertheless, the order is markedly different: the noun root comes before the verbal head in (8b), but after it in (2g). It is apparently not the case, then, that the same morpheme ordering principles apply to compounds and affixed forms in Mapudungun (contrary to, for example, Di Sciullo and Williams (1987) and Lieber (1992)). Rather, the stipulated attachment properties of affixes can override the general ordering principles that are seen in compounds, where no lexically-specific affixation features are involved.

2. Noun+noun compounding

Although they have received less attention, noun-noun compounds are also common and very productive in Mapudungun. (9) gives some examples.

- (9)
- | | | | | |
|----|---------------|-----------------|-------------------------------|-------------------------------|
| a. | mapu-che | land-people | ‘the mapuche people’ | (EL) |
| b. | mapu-dungun | land-words | ‘the language of the mapuche’ | |
| c. | ilo-korü | meat-soup | ‘soup containing meat’ | |
| d. | mamüll-wanglu | wood-chair | ‘wooden chair’ | |
| e. | küna-ruka | bird-house | ‘birdhouse’ | |
| f. | wingka-kofke | whiteman-bread | ‘European-style bread’ | |
| g. | kutran-che | sickness-person | ‘sick person’ | (Sm: 148) |
| h. | wariya-che | town-people | ‘townspeople’ | |
| i. | pulku-fotilla | wine-bottle | ‘wine bottle’ | (a particular type of bottle) |

These are very similar to noun-noun compounds in English and other Germanic languages. As in English, the second noun is the head of the construction, and the first noun is interpreted as some kind of modifier of it. For example, the Mapuche are a kind of people who have a special relationship to the land, not a kind of land that relates somehow to people. Also as in English, the exact semantic relationship between the two parts of the compound is underspecified and can cover a broad range of meanings.

There is, however, a productive vein of noun+noun compounding that has the opposite morpheme order. The following compounds are left-headed, not right-headed:

- (10)
- | | | | | |
|----|---------------|------------|-------------------------------|------|
| a. | nge-trewa | eye-dog | ‘dog’s eye, the eye of a dog’ | (EL) |
| b. | saku-kachilla | sack-wheat | ‘a bag of wheat’ | |

c.	longko-waka	head-cow	‘cow’s head’
d.	lüpi-achawall	wing-chicken	‘chicken wing’
e.	longko-kachilla	head-wheat	‘a head of wheat’
f.	namun-mesa	leg-table	‘table leg’
g.	ilo-trewa	meat-dog	‘dog meat’
h.	lichi-waka	milk-cow	‘cow’s milk’
i.	molifüñ-che	blood-person	‘human blood’
j.	fotilla-pulku	bottle-wine	‘a bottle of wine’

(one that actually contains wine)

What distinguishes these compounds from the ones in (9) is that the head noun in (10) is relational, and takes the second noun as its argument. Many of these examples involve body parts, or some other kind of part-whole relationship. Others involve a relationship between a container and a substance that it contains ((10b,j)), or a substance and the entity that it has been extracted from ((10g-i)). Indeed, sometimes the same two nouns can stand in either a modificational relationship or in an argumental relationship; this results in minimal pairs like (9i) and (10j), in which different semantic relationships between the nouns corresponds to different orders of the roots (Smeets 1989:173).

Evidence that the examples in (10) are N-N compounds, not syntactic combinations of noun and noun phrase complement (as Smeets 1989:173-76 claims) comes from the fact that the second member of this construction cannot be a proper name or a full NP with an explicit determiner:²

- (11) a. *nge tüfachi trewa (EL)
 eye this dog
 ‘an eye of this dog’
- b. *nge Antonio
 eye Antonio
 ‘Antonio’s eye’
- c. *nge ñi chaw
 eye my father
 ‘my father’s eye’

Also relevant is the fact that combinations like those in (10) can incorporate as a unit into a verb:

- (12) Antonio ngilla-ilo-trewa-y. (EL)
 Antonio buy-meat-dog-IND.3sS
 ‘Antonio bought some dog’s meat.’

² We credit Elisa Loncon with the view that the examples in (10) are compounds, and thank her for the supporting data in (11) and (12).

Given that only the head noun of a noun phrase can incorporate into the verb, and other NP-internal material is stranded by noun incorporation (Baker 1988), (12) shows that *ilo-trewa* must count as a single N⁰ in the syntax. Therefore, it is a compound.

What are the theoretical implications of this variation in the headedness of noun-noun compounds in Mapudungun? Notice that there is no similar variation in N-N compounds in English: *table-leg* and *dog-meat* are head-final, just as *townspeople* and *birdhouse* are. Nor is there any direct motivation for these orders in the phrasal syntax of Mapudungun: modifiers generally come before nouns in Mapudungun syntax, but so do possessors, even inalienable possessors (Smeets 1989:170-71):

- (13) tūfa-chi kawellu ñi pilum compare: tūfa-chi pilun-kawellu
 this-ADJ horse POSS ear this-ADJ ear-horse
 ‘the ear of this horse’ ‘this horse-ear’

One can, however, discern a similarity between order in V-N compounds and order in N-N compounds. In both domains, when the nonhead is interpreted as an argument that bears a thematic relationship to the head, the nonhead follows the head. In contrast, when the nonhead is interpreted as a modifier, with an underspecified semantic relationship to the head, then the nonhead precedes the head in both domains. There is a superficial difference in that most V-N compounds are head-initial, whereas the majority of N-N compounds are head-final, but this simply follows from the fact that most verbs are thematic-role assigners, whereas most nouns are not. Once this is factored out, the core ordering principle is seen to be the same in both domains.

This parallelism can perhaps be pushed one step further. Above we claimed (following Baker et al. 2005) that V+N=V combinations are formed by adjoining the noun to the verb in the syntax, as a result of movement, whereas N+V=V combinations are formed in the lexicon. Now the modificational N-N compounds in (9) are exactly the kind that Baker (2003:271-75) argues must be formed in the lexicon, before referential indices are assigned to the noun roots in the syntax. By parity of reasoning, we tentatively conclude that the N-N compounds in (10) have the order that they do because they, like the V-N compounds in (1) and (2), are formed by noun incorporation in the syntax. If so, then the examples in (10) are the first known cases of noun incorporation into a noun—a sort of construction that is theoretically possible within the framework of Baker 1988, but which has never been documented.

The order of morphemes in N-N compounds can also be compared with the order of root and affix in noun-to-noun derivational morphology. Mapudungun has a productive noun forming suffix *-fe*, which attaches to nouns to form a new noun that means ‘person who (habitually, professionally) makes X.’³

- (14) a. ilo-kulliñ-fe meat-cattle-er ‘butcher; one who makes animal meat’ (Sm:411)
 b. kofke-fe bread-er ‘baker’ (A: 247)

³ There is an alternative analysis of these examples in which they are not immediately relevant to the point at hand. *Fe* also attaches productively to verb stems, to create agentive nominals (e.g., *küdauf-fe* ‘work-er’). Moreover, Mapudungun allows verbs to be zero-derived from nouns, with the verb meaning ‘to make an X’ (e.g., *ruka-n* house-INF ‘to make a house’; see Smeets 1989:154). Hence, it is possible that the proper analysis of (14c) is only [_N [_V ruka_N+Ø]-fe] and never [_N [_N ruka]-fe]. We leave this matter open.

- | | | | |
|----|-----------|----------|-------------|
| c. | ruka-fe | house-er | ‘architect’ |
| d. | zapato-fe | shoe-er | ‘shoemaker’ |

The grammatical head in these examples is the affix, and there is presumably a function-argument relationship between the two morphemes, not merely a relationship of modification. Nevertheless, the head is final, not initial as it is in compounds with a function-argument relationship. This replicates what we saw in (8): the morphological attachment properties of an affix (whether it is stipulated as being a prefix or a suffix in the lexicon) override the general principles of ordering that hold in compounds.

For completeness, we mention that we have seen no sign of dvandva-type compounds in Mapudungun, which have conjunctive meanings like those that are found in many South Asian languages. Thus, Mapudungun has no known compounds of the type ‘father-mother’, with the meaning ‘parents’. The fact that a certain formal type of compounding is common and productive in a language (here N+N compounding) does not mean that it can do everything that can be done semantically by that type of compounding in other languages.

3. Verb+verb compounding

The third salient kind of compounding in Mapudungun is verb-verb compounding. This is the least studied type of compounding in Mapudungun, and is arguably the least well-understood type crosslinguistically. Many cases seem to be at least partially idiomatic, and it is not always clear which element of the compound is the head. We can, however, present some interesting examples, make some comparisons, and draw some tentative conclusions.

(15) gives a selection of examples which seem to be more or less compositional, with the normal lexical meanings of both verb roots discernable in the meaning of the compound.⁴

- | | | | | |
|------|----|-----------------|------------------------|----------------------------------|
| (15) | a. | weyel-kon-n | swim-go.in-INF | ‘to go in swimming’ (A: 269) |
| | b. | anü-n-püra-m-n | sit-INF-go.up-CAUS-INF | ‘to make sit up’ |
| | c. | rüngkü-kon-n | jump-go.in-INF | ‘to go in jumping’ |
| | d. | fuli-naq-n | scatter-fall-INF | ‘to fall and scatter’ (A: 270) |
| | e. | weyel-nopa-n | swim-cross-INF | ‘to swim over to here’ (A: 272) |
| | f. | fitra-lef-tripa | get.up-run-leave | ‘get up and run out’ (Sa: 189) |
| | g. | rapi-tripa-n | vomit-go.out-INF | ‘to go out by vomiting’ (A: 271) |
| | h. | wüño-kintu-n | come.back-look-INF | ‘to look back’ (A: 272) |
| | i. | kon-kintu-n | go.in-look-INF | ‘to look into’ |
| | j. | wüño-weu-tu-n | come.back-win-TR-INF | ‘win back’ (A: 276) |
| | k. | witra-nentu | pull-take.out | ‘to pull out’ (Sm: 416) |
| | l. | ultra-nentu | push-take.out | ‘to push out, away’ |

⁴ We omit from our discussion aspectual combinations in which the second verb is semantically bleached; some or all of these may now be affixes that have developed historically from verbal roots. Examples include morphemes like *meke* ‘spend time Xing’, *fem* ‘do X immediately’, *(kü)le* ‘be Xing’, *ka* ‘do X various times’, *nie* ‘have’. For some remarks on these, see Smeets 1989:419-20. Other verbal compounds seem similar to light verb constructions in other languages; see (21) below for a brief discussion.

- | | | | |
|----|----------------|------------------------------|---------------------------------------|
| m. | meñku-ñ-püra-m | carry.in.arms-INF-go.up-CAUS | ‘to carry up’ |
| n. | kücha-nentu-n | wash.take.out-INF | ‘wash out’ (A: 270) |
| o. | trana-künu-n | knock.down-leave-INF | ‘to leave something fallen’ (A: 262) |
| p. | anü-künu-n | sit-leave-INF | ‘to leave something sitting’ |
| q. | sera-kunu | close-leave | ‘to leave something closed’ (Sa: 190) |

For many of these, it is not clear what the relationship between the two verbs is. Many of them consist of a manner-of-motion verb followed by direction-of-motion verb (15a-f, k-n). Many also seem to have a conjunctive meaning, in which the associated NPs are interpreted as the subject and/or object of both verbs equally. Two examples in actual sentences are:

- (16) a. Witra-ñ-püra-m-fí-y-u tüfa-chi mesa. (Sm: 417)
 pull-INF-go.up-CAUS-3O-IND-1dS this-ADJ table
 ‘We lifted up this table.’
- b. Rumé ayü-w-üy-ngün pülle-tu-pe-fi-lu ti fúchá üñüm (Sm:496)
 very love-REFL-IND-3pS near-TR-see-3O-PTPL the big bird
 ‘They were enthusiastic when they came close to and saw the airplane.’

It is not clear which verb, if either, is the head. But Smeets (1989: 416) observes that, as a rule, when the argument structures of the two members of a compound differ, the compound derives its valence from the second member of the compound. That seems particularly clear for the compounds that end with *künun* ‘leave’ in (15o-q); these are compounds of an intransitive verb plus the transitive verb ‘leave’, resulting in a transitive verb. (15b) probably also fits this pattern, and (15h-j) might as well. So for those verb-verb compounds in (15) that have a clear and unique head, the head is final.

There is another productive pattern, however. A modal, aspectual, or causative verb can compound with any other verb, and when it does, the modal/aspectual verb comes first.⁵

- (17) a. kim-rüngkü know-jump ‘to know how to jump’ (Sa:192)
 b. küpa-ülkatu want-sing ‘to want to sing’
 c. pepi-nengüm be.able-move ‘to be able to move’
 d. pepi-trepe-l be.able-wake-CAUS ‘to be able to wake X up’
 e. wüño-kutran-tu-n return-sick-VBLZ-INF ‘to fall ill again’ (A: 276)
 g. af-nak-üm stop-go.down-CAUS ‘to stop taking down’ (Sm:416)
 h. ngilla-azoti make(lit. buy)-scourge ‘to have X scoured’ (A:277)

⁵ Unlike Salas (1992), Augusta (1903), and Pascual Masullo (personal communication), Smeets (1989) treats these as auxiliary plus main verb constructions, not as verb-verb compounds. It is unclear what her reason for doing this is. Taking the modal/aspectual verbs to be auxiliaries makes them exceptional in two respects. First, inflectional morphology goes on the main verb, not on the ‘auxiliary’ (see (18a) and (19a)), the opposite of what one sees in auxiliary constructions in Indo-European languages. Second, the ‘auxiliary’ is required to come immediately before the associated verb—a surprising requirement in a language that otherwise has rather free word order. Both these anomalies disappear if we take these to be verb-verb compounds, as other authors do.

The first verbs in these combinations are exactly the sorts of verbs that take VP complements in many other languages (Wurmbrand 2003). In fact, all these verbs except perhaps *küpa* ‘want’ can be used as independent verbs that take fully clausal complements in Mapudungun. (18) and (19) give near-minimal pairs, one with V+V compounding, and one without.

- (18) a. Kim-tuku-fi-n. (Sm: 219)
 know-put.at-3O-1sS
 ‘I know how to put it.’
- b. Iñche kim-ün fey ñi küpa-ya-l (Sm: 258)
 I know-1sS he POSS come-FUT-NOML
 ‘I have learned (come to know) that he will come.’
- (19) a. Af-dungu-y-iñ. (Sm: 418)
 stop-speak-IND-1pS
 ‘We stopped speaking.’
- b. Af-a-y kewa-n. (Sm: 243)
 stop-FUT-3sS fight-INF
 ‘The fighting will stop’ (‘it/she/he will stop fighting’)

A verb incorporation account is thus natural for the examples in (17), (18a) and (19a). These six verbs (among others) can select a propositional complement. This complement may be expressed either as a full clause, with tense and all the other usual functional categories, or it can be a bare verb phrase. If it is a full clause, the functional categories block incorporation of the verbal head of the complement into the higher verb, resulting in (18b) and (19b). But if the complement is a bare VP, incorporation is not blocked; the head verb of the complement can move to adjoin to the higher predicate. More precisely, the complement verb adjoins to the right of the selecting verb, just as an incorporated noun adjoins to the right of the verb that selects it in Mapudungun. We thus find argument-taker–argument order in these V-V compounds, just as we did in the V-N compounds in (1) and the N-N compounds in (10).

In contrast, it is far from clear what sort of syntactic structure the V-V compounds in (15) could be derived from; there is no obvious paraphrase for these examples in which the two verb roots are separate. Hence it is plausible that all or many of these examples are derived in the lexicon, with the first verb functioning as a modifier of the second verb, which determines the argument structure of the whole. If that is correct, then lexically formed V-V compounds have the order modifier-modified, parallel to what we found for modificational N-V and N-N compounds. It seems, then, that the same ordering principles apply to V-V compounds as apply to the other types—although the exact nature of many V-V compounds is not as clear as one would like.

Finally, we can compare compounding with derivational affixation once again. The causative morpheme *-l* is like the morphemes in (17) in that it is plausibly analyzed as a verbal head that takes a VP as its argument, based on similar periphrastic constructions in other languages (e.g., English [_{VP} *make* [_{VP} *someone talk*]]). But *-l* is a

bound affix, not a root. Furthermore, it follows the verb root that expresses its argument, in contrast to the order seen in (17):

- (20)
- | | | | | |
|----|---------|---------------|-------------------------|-----------|
| a. | dungu-l | talk-CAUS | ‘to make someone speak’ | (Sm: 396) |
| b. | küpa-l | come-CAUS | ‘to bring’ | |
| c. | ürkü-l | be.tired-CAUS | ‘to make tired’ | |
| d. | putu-l | drink-CAUS | ‘to make someone drink’ | |

These examples can be compared especially with (17h), which is also a kind of causative construction. Again, the morpheme order in instances of derivational morphology is systematically different from the morpheme order in semantically comparable compounds, as a result of the particular attachment properties of the affixes.

It may be, however, that the attachment properties of affixes in Mapudungun are not ultimately all that idiosyncratic. The reader has probably noticed that all of the derivational affixes presented are, in fact, suffixes (see (8), (14), and (20)). Indeed, virtually all affixation in Mapudungun is suffixation. The examples with affixation are also somewhat different from comparable compounding examples in that the meanings of the affixes are vaguer and more general than those of any particular root. This is especially evident in (8), where the verbal suffix *-tu* can variously be translated as ‘eat’, ‘drink’, ‘use’, or ‘get’, depending on the meaning of the noun it combines with. It could be that this semantic fact about affixation determines the morpheme order, rather than any stipulated morphological properties of the affix. In other words, these examples might illustrate a third general principle of morpheme order in Mapudungun, that “light verbs” follow the complement that provides the lexical meaning, where a “light verb” is a verb that has a very general (“bleached”) meaning, contributing aspectual information or argument structure properties to the construction it appears in, but little or no encyclopedic meaning. This generalization could perhaps also account for the morpheme order in verb-verb compounds like the following:

- (21)
- | | | | | |
|----|----------------|------------------|------------------|---------|
| a. | rütre-n-tüku-n | push-INF-put-INF | ‘to push’ | (A:267) |
| b. | pütre-n-tüku-n | burn-INF-put-INF | ‘to set on fire’ | |
| c. | rütre-wül-n | push-give-INF | ‘to give a push’ | (A:273) |
| d. | kintu-wül-n | look-give-INF | ‘to give a look’ | (A:272) |

Pursuing this idea further would require being much more specific about what exactly a light verb is, and what the nature of its relationship to its complement is than we can be here. We simply mention it as an intriguing possibility for future work.

4. Other types of compounding

N-N compounds, V+N=V compounds, and V-V compounds are salient parts of Mapudungun, and are explicitly discussed in Smeets (1989), Loncon (2005), and other descriptive works. But there are probably some other, less salient types as well, which we mention here.

Let us consider first what other kinds of compounds one might expect to find, given the informal theoretical observations that we have made so far. In particular,

suppose that two roots of any category can be compounded together in Mapudungun, and that all combinations are subject to two general ordering principles: argument-takers come before their arguments, and modifiers come before their heads (perhaps because the former are derived in the syntax, and the latter are created in the lexicon). Given these simple and general principles, what other types of compounds should be found in Mapudungun?

One additional type that we should look for is verb-and-noun compounds in which the noun is the head—compounds comparable to *drawbridge* or *runway* in English. Given that nouns rarely or never take verbs/verb phrases as arguments, we would expect the verb to function as a modifier of the head noun in this sort of compound, not as its argument. Given the general ordering principles, the verb should come before the noun, not after it. We should not be surprised, then, to observe V+N=N compounds in Mapudungun, and (22) shows that we do observe them.

- (22)
- | | | | | |
|----|--------------|----------------|-----------------------------|-----------|
| a. | tripa-che | go.out-person | ‘foreigner’ | (Sa: 219) |
| b. | trem-che | grow-person | ‘a grown-up’ | (Sm:149) |
| c. | anü-ruka | sit.down-house | ‘a house with a round roof’ | (Sm: 423) |
| d. | chafo-kutran | cough-illness | ‘a coughing disease’ | |

In contrast, we do not expect N+V=N compounds, nor have we found any.

We mention in passing that there are also some exocentric V+N=N compounds in Mapudungun, comparable to *scarecrow* and *pickpocket* in English, although Smeets (1989:423) says that this process is not productive. Two examples are *trari-kuwü* (bind-hand) ‘bracelet’ and *shiwil-ko* (stir-water) ‘porridge’. These cases are like the V+N=V compounds discussed in section 1 in that the noun stem functions as the semantic (theme) argument of the verb. Hence, it is consistent with our generalization that the verb comes before the noun. The difference is that the verb is not the head of the compound in these cases, because they are nouns, not verbs: a bracelet is neither a type of hand, nor a type of binding, but rather something that one binds around one’s hand.

Now we add adjectives into the mix. What kinds of compounds should they appear in? In principle, an adjective could combine with a root of any category, and it could function as either the head or the nonhead of the compound. But adjectives generally do not enter into function-argument relationships as either the argument-taker or as the argument, for principled reasons (see Baker 2003:ch.4). Hence compounds that include an adjective will be modificational compounds, and should fall under the modifier-head rule. In fact, an adjectival root can come before a noun, adjective, or verb head in a modificational compound, as shown in (23).

- (23)
- | | | | | |
|----|----------------|----------------|--------------------|-------------|
| a. | pichi-che | little-person | ‘child’ | (A+N=N, EL) |
| | pichi-achawall | little-chicken | ‘chick’ | |
| | kochi-kofke | sweet-bread | ‘sweetbread, cake’ | |
| | awka-waka | wild-cow | ‘wild cow’ | |
| | fücha-chaw | old-father | ‘grandfather’ | (Sm: 149) |
| b. | lig-karü | white-green | ‘light green’ | (A+A=N, EL) |
| | kum-karü | deep-green | ‘dark green’ | |
| | kurü-kelü | black-red | ‘dark red’ | (Sm: 149) |

- c. küme-künü-n good-leave-INF ‘to leave something good’ (A+V=V, EL)
karü-la-n green-die-INF ‘to die by accident’
ngellu-miawu-n difficult-walk-INF ‘to walk with difficulty’

For A+N combinations with very compositional meanings, it is not immediately obvious whether they are compounds or phrases. However, some of them can be incorporated into the verb as units, proving that they count as a single N⁰ in the syntax (compare (12) above):

- (24) Ngilla-küme-pulku-a-n. (EL)
buy-good-wine-FUT-1sS
‘I will buy good wine.’

It is also significant that we have not found any clear examples of compounds with the opposite headedness, compounds of the form N+A=N or V+A=V. Hence the expectation is confirmed that all compounds involving adjectives fall under the general modifier-modifiee rule for Mapudungun—perhaps the result of their being formed in the lexicon, not in the syntax by way of head movement. If these are less salient than some of the other types of compounding, that might simply be the result of there being fewer adjective roots to work with. But more systematic work on compounds that involve adjectives is called for before these conclusions can be considered firm.⁶

Finally, for the sake of completeness, we mention that there may also be compounds in Mapudungun that involve functional categories. For example, complex determiners can be built up out of simple determiners; hence Smeets (1989:118-9) mentions “compound” forms like *fey-ta* ‘that-the’, *fey-ti* ‘that-the’, *fey-ta-ti* ‘that-the-the’, *fey-tüfa* ‘that-this’ (p. 110), *ta-ti* ‘the-the’, *ta-ñi* ‘the-my’ (p. 120), *fey-(ta)-engu* ‘that-the-they.dual’ (p. 120-1), and so on. Of course the system for doing this is limited, because the range of determiners is limited. These examples might be compared to the very limited range of compound prepositions allowed in English (*into* and *onto* but not **underto*, **onfrom*, etc.). Also worth noting is the common word *fey-pi* ‘that-say’, which seems to be a compound of a demonstrative and a verb:

- (25) Fey-engu fey-pi-e-new: ... (Sm: 478)
that-they.dual that-say-INV-1sS.3O
‘The two of them said this to me: ...’

The head verb is the final member of the compound here. If the demonstrative is an expression of the direct object argument of the verb, then the order is argument-verb, in marked contrast to the verb-argument order that is found when a noun is incorporated. This could point to some principled difference between how compounding/incorporation applies to functional categories as opposed to lexical categories. Or it could be that the

⁶ In principle, our theoretical expectations would also permit N+A=A compounding and V+A=A compounding, but we have not found examples of these types. We do not know whether this is merely an accidental gap in our data, or whether these sorts of compounds are truly absent in the language. If they are absent, this could be a sign that the category adjective is a closed class in Mapudungun, so new members of the category cannot be freely coined or constructed.

demonstrative is really interpreted as an adverbial, to be more accurately glossed as ‘X said thusly’. If so, then (25) has the modifier-head order that is normal for Mapudungun. In general, the issue of compounds that involve functional categories as one or both members of the compound is one that merits further work.

5. Conclusions

In conclusion, we have seen that virtually all formal types of compounding are productive in Mapudungun—although not all types have all the meanings that one might imagine for them. In particular, Mapudungun is rich in compounds with a modificational interpretation and in compounds with a function-argument interpretation, but seems rather poor in compounds with a conjunctive interpretation.

The order of the two elements in a simple binary compound varies in an interesting way. The head of the compound is not in one consistent location within the compound, the way it is in English. Rather, there are two major ordering principles for compounds: an argument-taker comes before its argument, and a modifier comes before its modifyee. These generalizations cut across the different formal types of compounds, explaining why some noun-and-verb compounds are right-headed and some are left-headed, and similarly for noun-noun compounds and verb-verb compounds. It is thus not the categories of the roots involved in the compound that are crucial for determining the structure of those compounds in Mapudungun, but rather the kind of semantic condition that holds between them. It may seem that compounding is predominantly head-final in this language, but that is probably an artifact of the fact that all categories can participate in modification, whereas only some categories (verbs and relational nouns) are argument-takers.

More speculatively, we have conjectured that the differences in order might ultimately be signs of differences in where and how the compounds are constructed. Modifier-head order could be the result of adjoining on the left in the lexicon, whereas head-argument order could be the result of adjoining on the right in the syntax. This is largely an extrapolation from Baker et al’s view that V-N compounds result from syntactic incorporation in Mapudungun, and Baker’s (2003) view that modificational N-N compounds must be built in the lexicon. If the extrapolation is correct, then the unusual property of Mapudungun—that the order of adjunction is different in the two generative components—provides an unusually clear window into the question of what types of word formation are syntactic and what types are not.

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