

## On category asymmetries in derivational morphology

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In the absence of a substantive theory of the syntactic parts of speech, one would expect that any category could in principle be derived from any other category. However, a close look reveals that there are interesting asymmetries in derivational patterns across languages. In particular, deriving verbs from nouns is less common across languages, and in languages in which it occurs it is less productive and less semantically transparent than either deriving verbs from adjectives or deriving nouns from verbs. Thus, “nominalization” and “gerunds” are major topics in linguistic theory, whereas “verbalization” is not. In this paper, I will document crosslinguistic evidence for this basic asymmetry, and show how it can be explained in terms of the independently motivated theory of lexical categories proposed in Baker (1996, 1999, in progress).

A paradigmatic illustration of the markedness of verbalizing nouns comes from Imbabura Quechua (data from Cole 1985). Both nouns and adjectives can be used as the main predicate in a simple stative clause, as shown in (1).

- (1) a. Juan-ka mayistru-mi (ka-rka).  
Juan-TOP teacher-VAL be-past/3  
'Juan is/was a teacher.'
- b. Wasi-ka yuraj-mi (ka-rka).  
house-TOP white-VAL be-past/3  
'The house was white.'

However, predicate adjectives can be made into verbs by adding the inchoative affix *ya* or the causative affix *chi*, whereas nouns cannot be made into verbs in this way.

- (2) a. \*libru-ya-rka                      a'. jatun-ya-rka.  
Book-become-past/3                      big-become-past/3  
'It became a book.'                      'He became big.'
- b. \*libru-chi-rka-ni                      b'. ali-chi-rka-ni.  
book-caus-past-1                      good-caus-past-1  
'I made it into a book.'                      'I caused it to become good, repaired it.'

Examples like (2a) are not ruled out on intuitive semantic grounds, because the intended meaning can be expressed by a periphrastic construction in which the noun appears as the complement of an independent verb meaning 'become'. Strikingly, the same noun/adjective difference shows up in completely unrelated languages, such as the Australian language Nunggubuyu (Heath 1984), Mohawk, Edo, Mapuche, and other languages. It can even be seen in English: *The door opened(V)* is the inchoative form of *The door is open (A)*, but *#John manned (V)* is not the inchoative form of *John is a man*. *Man* can be used as a verb (as in *Man the torpedos!*), but crucially here *man* is understood as a kind of argument of an abstract verb (something like 'put men at'; Hale and Keyser 1993), not as a predicate.

An even sharper asymmetry is found in the domain of gerunds. Descriptively speaking, a gerund is a construction in which a nominalizing morpheme attaches to a

verb but the structure is only partly nominalized: the object of the verb root can still appear with accusative case, and the verb root can still be modified by an adverb. What would the opposite be? It would be a configuration in which a verbalizing morpheme attached to a noun, but the structure was only partially verbalized, so that the noun could still take a genitive possessor and/or be modified by an adjective. Gerunds are quite common across languages, but such “reverse gerunds” are unattested, as illustrated in (3).

- (3) a. I witnessed [John’s eating the apple carefully]. GERUND  
(cf. I respect the fact [that John ate the apple carefully]).  
b. \*That solution will [John’s best crystalize]. REVERSE GERUND  
(cf. That solution will become [John’s best crystal]).

This same asymmetry between gerunds and anti-gerunds is found in Quechua (Weber 1989 and personal communication), among others.

To explain these asymmetries in a principled way, we need a theory of the lexical categories that goes deeper than simply saying that verbs are +V, -N and nouns are +N, -V. Such a theory is proposed in Baker (1996, 1999, to appear). The basic tenets of the theory are summarized in (4).

- (4) a. Vs differ from As and Ns in having a theta-role to assign to their subject.  
This theta-role must be assigned (the Theta Criterion).  
b. Ns differ from As and Vs in having a referential index.  
This index must be coindexed with another element in the structure.  
c. No syntactic node can have both a theta-grid and a referential index.

Evidence for (4a) comes from the fact that verbs can be predicated directly of a subject, whereas nouns and adjectives need to combine with a copular particle before they can be used predicatively. This is true even in languages in which the copular particle can be phonetically null on the surface (as in Hebrew or English), as shown by the fact that nouns and verbs act like unergative predicates in spite of their nonagentive meanings. Evidence for (4b) comes from the fact that only noun phrases (and whole clauses) can introduce discourse referents, can be antecedents for anaphora, and can be in argument positions. Finally, (4c) is grounded in basic philosophical considerations that show that no category can be both a referring expression and a predicate simultaneously. It is seen empirically in the fact that underived nouns cannot take the same NP and clausal complements as verbs can.

These independently motivated assumptions combine to explain the observed asymmetries in derivational morphology. First, it is crucial to recognize that even nominals interpreted predicatively typically have a referential index. This is shown by the fact that they can introduce new discourse referents, as shown in (5).

- (5) In the winter, John (a magician) is a wolf. It has a brown coat and sharp teeth.

This referential index must be coindexed with something else in the structure by (4b); typically this will be the subject of predication. This coindexing is induced by the copular element “Pred”, as shown in (6a). Now consider a case in of verbalizing derivational morphology. Being verbal means to have a particular kind of theta-role, by (4a). So the verbal derivational morpheme must be like Pred in this respect. However, by hypothesis it is also a morphologically bound element, which combines

with the noun to make a single word. There are several ways this could happen, including by head movement (“incorporation”), as in (6b). However, any such derivation per force creates a syntactic head that has both an undischarged theta role and an active referential index, in violation of (4c). This explains why verbalization is generally ruled out.

(6) a. Structure of Pred Nom'l:            b. With Incorp/conflation:    \* by (4c)

In contrast, verbs can easily be formed from adjectives, because adjectives have no referential index to create a violation of (4c). This explains the asymmetry in (2). Noun roots can sometimes be verbalized, but only if they suspend their referential index; hence one gets the contrast in (7).

(7)    a. The solution became a crystal.            It (the crystal) was two inches long...  
      b. The solution crystalized.                #It (the crystal) was two inches long...

However, even this marked derivation cannot create an “anti-gerund” like (3b), because attributive adjectives and genitive possessors are crucially licensed by reference to the head nouns referential index. If the index of this noun is suspended to avoid a violation of (4c), then these nominal modifiers cannot appear either. Finally, it is easier to nominalize verbs than to verbalize nouns, because a verb can assign all its theta roles inside VP, prior to combining with a nominalizer. Thus, this theory (once properly developed) explains why nominalization and gerunds are widespread, but verbalization and anti-gerunds are rare or impossible.