

An Analysis of *Self*-compounds within an Antilexicalism Framework

Junya MORITA*

1. Introduction

To reveal the interaction between syntax and morphology is one of the most important tasks in generative linguistics. A representative of the phenomena characterizing the syntax-morphology interface is adjectivization. The present study focuses on English *self*-compound formation, a clear case of adjectivization. The formation of *self*-compounds is exemplified in (1) and (2):

- (1) ... no rain to soften hearts and freshen cities and give the excluded (or *self-excluding*) man occasion for jokes about fear and death. (BNC A18: 365)
- (2) a. The party *confines itself as* the defence of the law.
b. *The party is *self-confining as* the defence of the law.

We notice, in (1), that the compound *self-excluding (man)* is semantically very similar to the phrase “man who excludes himself,” and it is created context-dependently. As illustrated in example (2), however, *self*-compounding is not free; some morphological constraint is imposed on the word creation. The aim of this study is to elucidate the syntactic, morphological, and semantic properties of *self*-compounds by in-depth analysis of relevant compounds extracted from a large-scale corpus (§2), and to present a principled account of these properties from a viewpoint of antilexicalism (§3).

2. Properties of *Self*-compounds

In this section, we will observe significant aspects of English *self*-compounds. Before that, a word may be necessary as to the method of research. In order to collect as many adjectival *self*-compounds as possible, we have searched for them in the British National Corpus (BNC). By repeatedly using the “wild card” function of a research engine, the related compounds are extracted from the corpus, and they are analyzed from syntactic, morphological, and semantic points of view.¹

2.1. Syntactic Properties

2.1.1. Parallelism between *Self*-compounds and Their Syntactic Counterparts

An essential syntactic property of *self*-compounding is that *self*-compounds are syntactically parallel to their sentential counterparts. Reflexive pronouns can function as verbal objects, as in (3a), and they may also serve as prepositional objects, as in (3b). In the formation of relevant compounds, transitive verbs incorporate the former reflexives in (4a), and intransitive verbs incorporate the latter ones in (4b).

- (3) a. John blames *himself*.
 b. Mary stood by *herself*.

- (4) a. *self*-blaming child
 b. *self*-standing community

Verbs such as *demean* are classified as “verbs of obligatorily reflexive object,” which are required to take reflexive objects (Levin (1993: 107)). As (5) shows, this class of verbs need reflexive objects. The same restriction applies to compounding: as shown in (6), we can incorporate a reflexive object (*self-demeaning*), but not a non-reflexive object (**woman-demeaning*).

- (5) a. The speaker demeans *himself*/**women*. (*demean*: (Ag; Th))
 b. She ingratiates *herself*/**men* by her charm.

- (6) a. *self*-/**woman*-demeaning speaker
 b. *self*-/**man*-ingratiating charm

2.1.2. A Restriction of Base Verb’s Complement Patterns

Self-compounds differ from their syntactic counterparts in one important respect: a restriction of base verb’s subcategorizations is imposed in *self*-compounding. Verbs which take more than one complement cannot engage in *self*-compounding. As demonstrated in (7), the verb *profess* can take double objects. When the verb is incorporated into a *self*-compound, the result is ill-formed, as evidenced in (8).

- (7) He *professed* himself a supporter of free speech. (*profess*: [+ _ NP NP])

- (8) **self-professing* supporter of free speech

Similarly, verbs which take the complement patterns of [+ _ NP that S] ((9a)) or [+ _ NP to VP] ((9b)) are not allowed to construct *self*-compounds, as evidenced by the unacceptability of (10a) and (10b).

- (9) a. He *congratulated* himself that things were going so well.
 b. She *revealed* herself to be young and jolly-looking.
 (10) a. **He* seemed *self-congratulating* that things were going so well.
 b. **She* seemed *self-revealing* to be young and jolly-looking.

2.2. Semantic Properties

2.2.1. Conditions of Base Verbs

Let us now consider the semantic properties of *self*-compounds. The first point to note here is that a semantic restriction is imposed on the possible classes of base verbs: reflexive objects cannot be taken by the classes of verbs which require the argument structures contradictory to the coreference of subject and object, and therefore such verbs may not serve as the base verbs of *self*-compounds. Three cases of this sort can be recognized: “reciprocal active verbs” such as *kiss* and *chat* (Levin (1993: 62-64)) are not involved in *self*-compounding. The compound **self-kissing* in (11) is unacceptable, because the implicit *agent* and *self*-arguments clash with the reciprocity required by the verb *kiss*.

- (11) **self-kissing*, **self-chatting*, **self-corresponding*

By the same token, *attract* type of verbs are not involved in *self*-compounding. *Attract* verbs require

that their subject and object be non-coreferential. Since *self-* is always coreferential with the implicit subject, compounds like **self-attracting* in (12) are ill-formed.

(12) **self-attracting*, **self-confiding*, **self-mediating* (*attract*: (Ag_i, Th_j))

Lastly, “*declare* verbs” and “*get* verbs” (Levin (1993: 182, 141)) cannot be the head verb of *self-* compound, as in (13). The reason is that these verbs take a human subject and a non-human object, which comes into conflict with the subject-object coreference.

(13) **self-assuming*, **self-procuring* (*assume*: Ag_[+human], Th_[-human])

2.2.2. Interpretation of *Self*-compounds

The second semantic point is that the meanings of *self-* compounds are captured by general interpretive rules; each of the three main denotations of *self-* is systematically assigned to the related non-head element of base verb. Firstly, the meaning ‘oneself’ is assigned to an argument of base verb: *self-approving* (*laughter*) in (14), where the argument *self-* of the internal verb *approve* is interpreted as ‘oneself.’

(14) *self-approving* (*laughter*), *self-benefiting* (*thing*), *self-connecting* (*sinfulness*)

Secondly, the meaning ‘by oneself’ is allocated to an adjunct of base verb: *self-organizing* (*system*) in (15), where the adjunct *self-* of the intransitive verb *organize* is construed as ‘by oneself.’

(15) *self-organizing* (*system*), *self-subsisting* (*pyramid*), *self-luxuriating* (*indulgences*)

Lastly, the reading ‘automatically’ is assigned to an adjunct with an instrument-denoting external argument, as exemplified in (16) (cf. Marchand (1969: 92)). When an external argument (*microphone*) denotes instrument, the adjunct *self-* within a *self-* compound is construed as ‘automatically.’

(16) *self-adjusting* (*microphones*), *self-acting* (*printing*), *self-centring* (*grips*)

2.3. Creativity

In this section, a hapax-based productivity measure for compounding is applied to data collections to calculate the productivity value of *self-* compounding. We accept a hapax-dependent productivity measure, which attaches great importance to hapax legomena—token frequency 1—of a large-scale corpus (Baayen and Renouf (1996)). This is based on the view that the capacity of an affix to create new forms crucially involves the degree to which the affix produces words of very low frequency (Hay (2003)). We propose a productivity measure: $Productivity (P) = n_1/V$, where n_1 is the number of hapaxes and V is the total number of types.² Our BNC research detects 133 hapaxes and 246 types of [*self*-[*V-ing*]]_A compounds, giving its productivity value of 0.5407. In this measure, the productivity of [*self*-[*V-ing*]]_A is defined as the potentiality of creating 133 kinds of new words when 246 kinds of [*self*-[*V-ing*]]_A compounds are used; more than half of the attested *self-* compound types are innovated adjectives. The results of the research then demonstrate how creative *self-* compounding is in coining new words.

Additionally, a *self-* compound may be coined on the spur of the moment in the syntactic contexts of comparison and contrast. In example (17), the phrase (*be*) *apt to disparage himself* is momentarily replaced with the compound *self-disparaging* for the functions of “naming” (to conceptualize a property by giving it a name) and “brevity” (to construct a concise and sensible word). Both functions are quite

salient in context-dependent word creation (Clark and Clark (1979), Rice and Prideaux (1991)). The same argument applies to example (1) above. That *self*-compounds may be constructed wherever there exist such functional requirements indicates the creativity of the device—the capacity to make up new words.

(17) In early youth, Newton was anxious, insecure, hypochondriacal and *self-disparaging*. (BNC CFX: 156)

3. Formation of *Self*-compounds

3.1. Previous Analyses and Their Problems

Let us turn now to a system showing how *self*-compounds are derived. We will first make a brief survey of previous studies and their problems. In descriptive studies, we find Marchand (1969) and Quirk et al. (1985), where adjectival *self*-compounds are divided into three main categories, (i) *self-ing* participles, (ii) *self-ed* participles (*self-styled*), and (iii) *self*-derived adjectives (*self-adaptive*), and the first category is subdivided into three groups, each containing *self*- with a different grammatical function: object (*self-defeating*), subject (*self-reacting*), and adverbial ‘automatically’ (*self-loading (gun)*). There are a handful of representatives of generative studies, like Chapin (1967) and Meys (1975). Chapin (1967: 13-40) derives *self*-compounds by SELFING, a transformational rule, which moves the reflexive morpheme *self*- to the head verb and deletes the first element ($N_{[+pro]}$) of the reflexive pronoun.

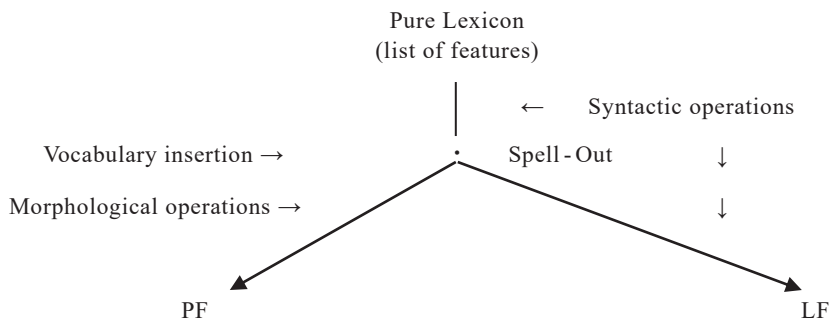
There are three major problems for the transformational approach that are not easy to solve. To begin with, setting up a transformational rule for each construction is highly problematic in that it goes against the generality of rules, and hence it should be avoided to lay down a transformational rule for *self*-compounds. Secondly, the rule would permit “overgeneration”; the unacceptable *self*-compounds in (8) and (10b) would be generated. To avoid this, restrictions of base verb’s complement patterns will be specified in the transformational rule, but this measure would strengthen the descriptive power of the rule. And lastly, the transformational approach fails to provide a uniform account of the different properties of two types of *self*-compounds discussed in §3.2.2.1 (cf. (19) and (24)); a separate transformational rule would only be laid down for each type of *self*-compounds.

3.2. A Proposal

3.2.1. An Antilexicalism Model: Distributed Morphology

In this section, we propose the mechanism of *self*-compounding. Before that, we will briefly look at Distributed Morphology (DM), an antilexicalism model, on which our analysis is based. DM framework is roughly schematized as in (17) (Halle and Marantz (1994), Marantz (1997), and Embick and Noyer (2001)):

(18)



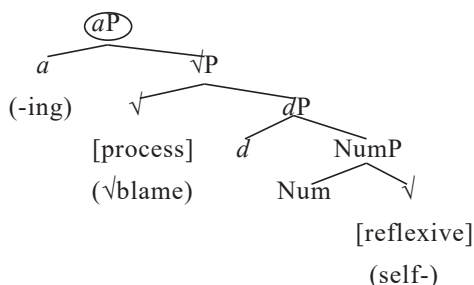
We should note two crucial claims of DM. One is “post-syntactic Morphology”: at the PF interface, a series of operations such as merger and impoverishment are applied to a syntactic output to construct a word structure. The other is “late insertion”: lexical items in Vocabulary are inserted at PF. Thus, universality of syntax is pursued by prolonging morphological operations and lexical insertion beyond Spell-Out.

3.2.2. Derivation

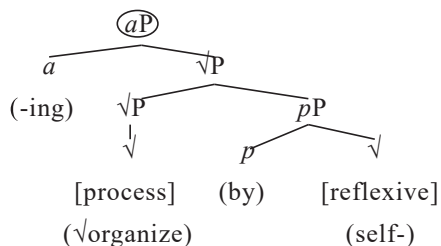
3.2.2.1. Syntactic Structure

We are now in the position to show how *self*-compounds are made. The underlying structures of *self*-compounds are constructed by syntactic operations; [*self*-[*V-ing*]]_A, which we call Type 1, has underlying structures such as (19) and (20).³

(19) A. *self-blaming* (*child*)



(20) B. *self-organizing* (*system*)



In Pattern A, for example *self-blaming* (*child*) in (19), *self-* is the object of the transitive root *blame*. In Pattern B, for example *self-organizing* (*system*) in (20), *self-* is the adjunct of the intransitive root *organize*.

The properties of *self*-compounds which we have outlined in §2 follow from these syntactic structures. Firstly, we have seen a core syntactic feature common to both *self*-compounds and their sentential counterparts —a thematic relation (§2.1.1). This stems from the fact that both expressions have a common syntactic structure. Secondly, we have observed the semantic interpretations of three types of *self*-compounds (§2.2.2). This is also accounted for structurally: based on the related structure, each pattern of *self*-compounds obtains an appropriate interpretation. The object interpretation of *himself* and *self-* in (21) is correctly derived from the common √P structure. Similarly in (22), the interpretation of

prepositional object of *itself* and *self-* stems from the upper \sqrt{P} structure in (20).⁴ In (23), the verb *demean* requires its subject and object to be coreferential, so that both sentence and compound which do not follow this subcategorization restriction are correctly ruled out.

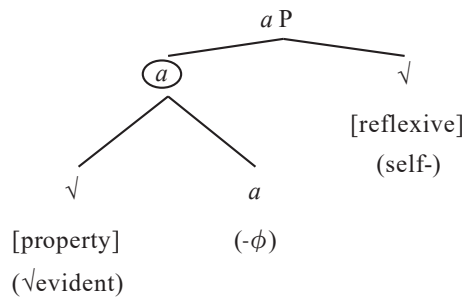
- (21) The child *blames himself* = *self-blaming* child (Pattern A)
- (22) The community *stands by itself* = *self-standing* community (Pattern B)
- (23) The speaker *demeans himself*/**women* = *self*/**woman-demeaning* speaker

Thirdly, as laid out in §2.3, *self*-compounding is very creative—they are constantly coined and they may be formed online in the syntactic environments of comparison and contrast. This derives naturally from the view that syntactic computation is fully productive and the core structure of a *self*-compound is constructed at the level of syntax.

We have a different type of *self*-compound ($[self-[X(-suffix)]]_A$), which we call Type 2. It consists of $[self+X]$ or $[self+X+non-ing\ suffix]$, such as *self-evident* (*benefit*), *self-important* (*politician*), *self-explanatory* (*title*), and *self-sufficient* (*community*). Unlike Type 1 compounds, which are generally transparent, Type 2 compounds tend to be semantically idiosyncratic. They often have lexicalized and non-compositional meanings; for example, *self-evident* means ‘obvious and needing no further proof or explanation’ and *self-explanatory* designates ‘easily understood and needing no further explanation.’ Concerning productivity (cf. §2.3), we find a difference between both types: Type 2 compounds are not so productive as Type 1 compounds. In our BNC research, the number of the hapaxes and that of types of $[self-[X(-suffix)]]_A$ are 25 and 59 respectively, giving its productivity value of 0.424. It is lower than that of Type 1 compounds ($P=0.5407$).

From the above observations, we are justified in asserting that Type 2 compounds have a structure given in (24). Here we notice that in the Type 1 compound of (19), the attachment of a head morpheme (*-ing*) is higher, while in the Type 2 compound of (24), the attachment of a head morpheme (*-φ*) is lower.

- (24) *self-evident* (*benefit*)



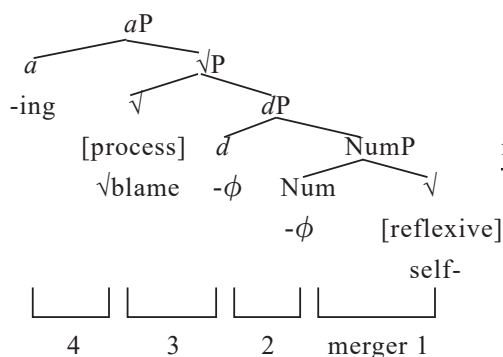
“Lower” adjectival is virtually treated as an N-A compound in syntax, with the consequence that the combination of its constituent may show a variety of semantic relations (cf. Marantz (2013)). For example, the interpretation of *self-evident* is made on the basis of modification, but not thematic relation; *self-* is an emphatic element of the adjective *evident*. Additionally, the compound status of lower adjectival entails that a lower adjectival expression does not share a core underlying structure with the corresponding

syntactic expression, the combination of its constituent being inherently random and less predictable. Thus, the distinct characteristics of Type 1 and Type 2 compounds follow automatically from their distinct syntactic structures, and hence the third problem of the previous studies pointed out in §3.1 is readily solved in our approach.

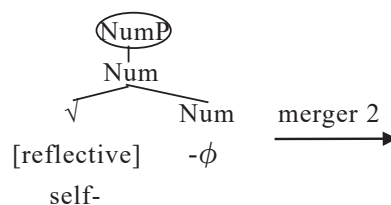
3.2.2.2. Morphological Derivation

Let us now consider how a *self*-compound is formed from the syntactic output. We will take Type 1, Pattern A as an example. After Spell-Out, (i) the determination of linear order is carried out; in English head comes first within XP, but head comes last within X⁰, and (ii) vocabulary insertion takes place according to a subcategorization restriction of each lexical item such as *-ing*: <+ √P>, *blame*: <+ dP>, and *-φ*: <+ √>. The result is structure (25), to which merger is morphologically forced to apply—a bound morpheme cannot occur on its own, but has to combine with another form. Merger is defined as “to combine adjacent constituents (including one that is already derived via merger) in terminal nodes into a zero-level category” (Marantz (1996: 24)). Firstly, the root-Num merger (merger 1) produces structure (26). Secondly, the subsequent Num-*d* merger (merger 2) yields structure (27). Then, the *d*-root merger (merger 3) derives structure (28). After that, the √-*a* merger (merger 4) makes structure (29).

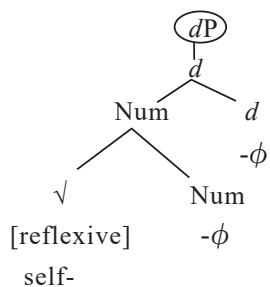
(25) *self-blaming* (*child*)



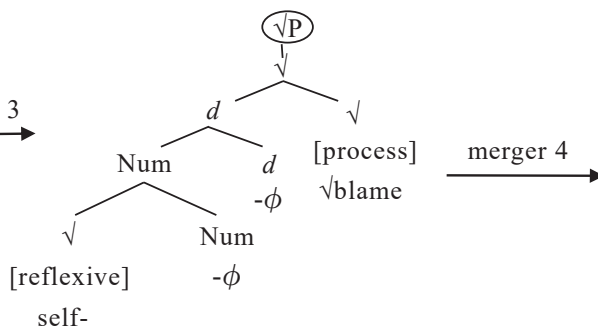
(26)



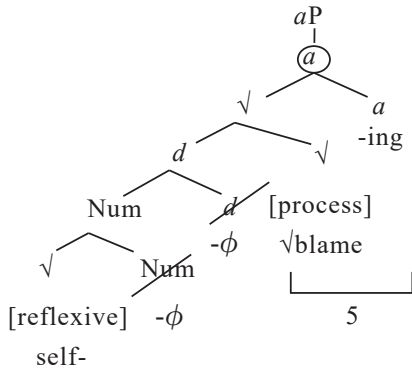
(27)



(28)



(29)



Morphological condition:

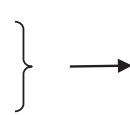
*[x⁰ ... [F] ...]

[F]: [num], [d], [p], etc.



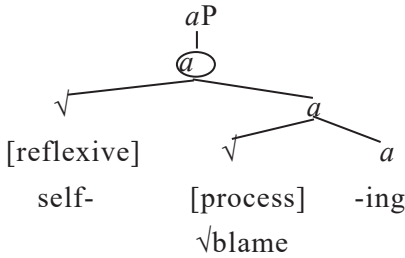
impoverishment of Num and *d*

merger 5



Importantly, the removal of Num and *d* in (29) is carried out, due to a parameterized Morphological condition requiring the absence in the individual element of X⁰ of functional categories. The removal of Num or *d* is called “impoverishment”: to delete morphosyntactic features irrelevant to word construction. And finally, the root-*a* merger (merger 5) produces structure (30).

(30)



We can see that the three problems of the previous studies (§3.1) are all solved. The objection raised against the generality of rules is overcome, because general operations like merger engage in constructing *self*-compounds. The problem posed for overgeneration is also resolved by adoption of a Morphological condition requiring the output of a word-formational operation to inherit only the first sister (NP complement) of the base (cf. Carlson and Roeper (1980) and Randall (1982)). Lastly, no problem arises concerning the different types of *self*-compounds, since the different properties of them are structurally accounted for in our analysis.

4. Conclusion

We have revealed that *self*-compounding exhibits characteristics of both syntax and morphology. In order to explain these properties, we have proposed the model of “well-distributed” word formation, in which (i) a *self*-compound has an underlying structure parallel to that of its clausal counterpart and accordingly their parallel thematic and semantic properties are uniformly handled in syntax, and (ii) the syntactic output,

sent to morphology, is required to be constructed into a word form according to a set of morphological operations and conditions. The proposed antilexical program is expected to obtain further support by extensive research of a variety of compounds.

Notes

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¹ For the collection of *self*-compounds I am indebted to the research engine of <http://view.byu.edu/reg3.asp?c=aybfyfml>.

² This productivity measure is a revised version of the one proposed by Baayen and Renouf (1996), who place the total number of tokens (but not types) in the denominator of the productivity formula.

³ Root ($\sqrt{\quad}$) is defined as bound morpheme that becomes the core of a word.

⁴ As for the *self-adjusting (microphone)* type, a general interpretive rule assigns the meaning ‘automatically’ to the *pP* constituent of the underlying structure: $[[[DP \dots [\sqrt{(\sqrt{microphone}_{[instru]})}] \dots [aP a_{(-ing)} [\sqrt{P} [\sqrt{P} [\sqrt{adjust}]]] [pP p_{(-\phi)} [\sqrt{self}_{[reflexive]}]]]]]]]$.

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