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# On Imaginary English Dvandvas in Relational Adjectives

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## 1 Typologically Unavailable, but Derivationally Available?

Dvandva compounds, a type of coordinated compound, have typological significance because they are widely observed in Asian languages, but not in European languages (Bauer (2008), Shimada (2013, 2016), among others). Thus, Japanese has the typical example of dvandvas expressing “a new unity made up of the whole of the two entities named” (Bauer (2008: 2)): *dan-jo* (male-female) ‘male and female.’ In contrast, its (Present-day) English counterpart is, as the translation shows, a phrase rather than a compound.

However, English has derivatives that apparently involve dvandvas. Such words can be observed in relational adjectives (RA), a kind of denominal adjective (e.g., *theatrical*, *historic*). Given that they have nominal bases, we encounter a paradoxical situation in the examples in (1) with combining forms composing neoclassical compounds (cited from the *OALD* and the *OED*): They appear to be derived from nominal dvandvas, which are supposed to be typologically unavailable in English.

- (1)
- |    |                  |  |
|----|------------------|--|
| a. | gastrointestinal | ‘of or related to the stomach and intestines’          |
| b. | dorsabdrominal   | ‘relating to the back and abdomen’                     |
| c. | oesophagogastric | ‘of or relating to the oesophagus and the stomach’     |
| d. | psychosomatic    | ‘involving or depending on both the mind and the body’ |

In (1a), *gastrointestinal* appears to contain as its base \**gastrointestine*, which clearly has the typical reading of dvandvas ‘(the set of) the stomach and intestines,’ but this potential base is not a grammatical compound (Shimada (2023: 239)). Then, how can the RAs like those in (1) accommodate such an “imaginary” base, so to speak?

We aim to answer this question, drawing on Nagano’s (2013, 2015) analysis of RAs as prenominal variants of PPs, where P is a category-shifting functional category that turns an NP into an AP (Baker (2003)). If so, the RAs in (1) also have PPs as their underlying structures, where the nouns can be safely coordinated as in ordinary PPs (e.g., *in Europe and Asia*).

## 2 Framework: Nagano (2013, 2015)

The core idea of Nagano’s (2013, 2015) study is that RAs are morphological, realizational variants of PPs that appear in the environment of direct modification, where an attributive modifier is directly related to the head noun through base-generation. An important fact in this regard is that RAs can be semantically paraphrased as PPs, as in (2).

- (2)
- |    |                           |     |                               |
|----|---------------------------|-----|-------------------------------|
| a. | <i>presidential</i> plane | a’. | plane <i>of the president</i> |
| b. | <i>theatrical</i> dancer  | b’. | dancer <i>in the theater</i>  |

(Nagano (2013: 123; 2015: 6), with slight modifications)

Syntactically, this indicates that noun modification requires the modifier to be in the form of PP in the postnominal position and the form of RA in the prenominal position; PP cannot be a prenominal modifier as it stands (cf. \**a* [<sub>pp</sub> *near* [<sub>DP</sub> *Boston*]] *residential area* (Escribano (2004: 2))).

Nagano (2013) then proposes that RAs are derived from the structure in (3a) through conflation (i.e., incorporation before lexical insertion). Specifically, N in (3a) is conflated into its head, P, forming the structure in (3b).



to form an RA. If so, it would be expected that the semantic subtypes of dvandvas attested in dvandva-rich languages could also be observed in English, albeit in the form of RAs. However, this is not the case. Particularly relevant here are what Bauer (2008) calls the co-synonymic and co-hyponymic types, which are exemplified in (8a, b), respectively. The co-synonymic dvandva consists of constituents in a synonymous relationship. The co-hyponymic type is a compound where each constituent denotes a subclass of the category named by the compound as a whole.

- (8) a. Co-synonymic      Lezgian      *kar-k'walax*      job work      'job, business'  
 b. Co-hyponymic      Punjabi      *bas-kaar*      bus-car      'vehicles'

(cited from Bauer (2008: 10, 9))

As dvandvas are not available in Present-day English, these subtypes are also systematically unobservable, and this situation holds true even in the form of RA.

First, the co-synonymic dvandvas composed of a combining form and its free form synonym would be something like *\*gastrostomachic* or *\*enterointestinal*, but these combinations are not easily acceptable.

Second, co-hyponymic dvandvas are also difficult to find in the RAs in question because, in most cases, as observed in (1), the coordinated expression simply refers to the union of the two sets named by the constituents, not exceeding it. One potential candidate for this kind of dvandva is *psychosomatic*, given the Japanese nominal dvandva *shin-shin* (mind-body), which can be used to express 'every fiber of one's being,' where *mind* and *body* can be understood as parts of one's existence. However, this meaning is not reflected in *psychosomatic*, and again, it simply denotes the sum of *mind* and *body*. In fact, *gastrointestinal tract* means the entire digestive tract, where *gastr-* (i.e., *stomach*) and *intestine* are both hyponyms of *digestive organ*. This is similar to the case of the co-hyponymic dvandva observed above, in which the coordinated hyponyms form their hypernym. This appears to be a potential challenge for our analysis. We assume that the RA formed in the proposed manner can undergo such a semantic extension (i.e., synecdoche), depending on its relationship with the noun to be modified. In fact, *gastrointestinal* is not always used to represent digestive organs; *gastrointestinal radiography* most likely refers to radiography of the stomach and intestines, not of the digestive tract as a whole. Thus, it is the modifier-head relationship that allows for semantic extension, arguing against (co-hyponymic) dvandva formation.

#### 4 Implications from the Lack of Neoclassical Dvandvas

In English, verbal compounds, as well as dvandvas, are typologically unattested in the sense that N-V compounds are not directly formed by combining two bases (e.g., *\*to truck-drive* (Ackema and Neeleman (2004))). Instead, they can be obtained by applying back-formation to (nominal or adjectival) synthetic compounds (e.g., *to air-condition<sub>v</sub>* < *air-conditioning<sub>N</sub>*). This raises the question of why this process is applicable to synthetic compounds but not to the RAs in (1), which would otherwise be a potentially rich source of neoclassical dvandvas in English. One answer is blocking by the phrasal competitor, as in *\*gastrointestine* vs. *stomach and intestines* (cf. *\*male-female* vs. *male and female*; see Nishimaki (2022) for a related discussion). Our analysis implies another possible factor behind the situation in which dvandvas are not back-formed from RAs. A crucial difference between synthetic compounds and RAs lies in how they are formed. Synthetic compounds are outputs of compounding, and if we take the view that compounding is lexeme-internal syntax (cf. Aronoff (1994: 16)), their formation, regardless of the exact process, is driven by syntax and arguably by semantics as well. On the other hand, RAs are the realization forms that the structure [P + N] is forced to take in the syntactic context of direct modification (see Section 2). In this sense, the formal

alternation from PP to RA is “closer to inflection” (Nagano (2013: 113)), although the resulting word has the status of a derivative. This difference may determine the applicability of back-formation; the outputs of syntactic context-triggered (or inflection-like) word-formation, but not those of syntax-/semantics-driven word-formation, are likely to resist undergoing back-formation (and possibly some types of word-formation processes). This situation is reminiscent of Myers’ Generalization that “no derivational suffixes may be added to a zero-derived word, just as no such suffix may be added to an inflected word” (Myers (1984: 66)). Our analysis, together with this generalization, leads us to examine the relationships among the relevant processes, which further deepens our understanding of how morphology works.

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