

Neoclassical word-formation

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1. Introduction

Neoclassical word-formation is word-formation with elements of Greek or Latin origin. In the European languages neoclassical word-formation is found 'next to' native word-formation. In these languages neoclassical elements combine productively with each other (cf. *automobile*, *morphology*, *hydrophobic*) and with native elements (see below).

2. History and scope of neoclassical word-formation

A neoclassical word or element is not simply any element that is etymologically Latin or Greek. Since Latin (and partly Greek) was the European lingua franca and the official language in many countries for many centuries, it is no wonder that many Latin and Greek elements found their way into the European languages. Elements that were borrowed early are often phonologically and morphologically assimilated and show no

structural differences to native words (examples are German *Fenster* 'window' from Latin *fenestra* which became trochaic and lost the full vowel in the last syllable or English *market* from Latin *mercatus*). Such elements behave in word-formation just like native elements.

What we call neoclassical word-formation, on the other hand, uses elements that are not totally assimilated. It became productive in the 17th and 18th century in many European languages, mainly because there was a movement away from Latin as a lingua franca to the vernacular languages. At the same time the evolution of sciences furthered the development of terminology which used and combined classical elements. Neoclassical words are not simple borrowings but are formed by new mechanisms that often differ from word-formation with native stems. (This is a very rough picture; for a historical survey of the development and influence of Latin and Greek elements in some European languages see Munske & Kirkness (1996) and histories of the morphology of each language, e.g. von Polenz 1994 for German, Marchand 1969 or Baugh & Cable 2002 for English). Because there are many elements, words, and mechanisms that are similar across different languages (sometimes called internationalisms), there are a number of common questions that need to be addressed in morphological theory. These concern the status of neoclassical elements, the nature of their combination and the question of their productivity.

3. The status of neoclassical elements

Regarding the morphological status of neoclassical elements two questions must be addressed (a) How do neoclassical and native elements differ from each other, and (b)

Are neoclassical elements like *hydr(o)-*, *psych(o)-* or *-morph/morph(o)-* stems or affixes?

As described above, the notion 'neoclassical' is not simply an etymological notion. First, speakers cannot be expected to have etymological knowledge. In addition, it is often difficult to determine the origin of a morphological element because many elements reach a language via other languages. Is an originally Latin element that reached English via German – and has perhaps undergone changes on its way – Germanic or classical (cf. Anshen et al. 1986)? Therefore 'neoclassical' (or 'latinate' or 'learned') refers to structural properties of some elements that distinguish them from 'native' elements in the base language. These structural differences can be

(a) phonological: neoclassical affixes may attract or bear stress, cf.

cèremony – *ceremòniou*s, *sincère* – *insincere*, while Germanic affixes do not. Neoclassical words may have sounds that are not phonemes in the base language.

(b) morphological and morphophonological: neoclassical elements tend to combine mainly with other neoclassical elements (see following section) and affix ordering principles may be sensitive to the neoclassical-native distinction (Kiparsky 1982, Aronoff & Fuhrhop 2002).

(c) orthographic: neoclassical elements may contain graphemes (for example <ph> in *philosophy*) that are not part of the grapheme inventory of the base language.

(d) use: neoclassical elements are often used in 'higher' or 'learned' registers.

Lüdeling et al. (2002) show that these differences do not lead to clear-cut categories but rather have to be seen as constituting similarity classes. It seems clear, however, that in

many languages the class of neoclassical elements is distinguishable (at least in many cases) from the class of native elements. Randall (1980) provides psycholinguistic evidence that speakers distinguish between native and neoclassical elements.

In a simple morphological model which distinguishes between affixes and stems the status of many neoclassical elements is difficult to determine. Semantically, they behave like stems but often they appear only as bound forms. Examples are *psych(o)-*, *hydr(o)-*, *morph(o)-* or *-(o)phob*, *-(o)log-* (the modes of combination and the status of the 'linking element' *o* are taken up in the next section).

To mark this, neoclassical elements are sometimes called formatives, combining forms or confixes (see Donalies 2000). Generative theorists have come to different conclusions concerning the status of these elements. Aronoff (1976), in his word-based approach, assumes that these elements have no status but occur only in complex words. Others, like Scalise (1986) or Selkirk (1982) argue that these elements are bound stems. Still others assume that these elements are affixes (Williams 1981). In this view there would be words consisting only of affixes. Finally, Lüdeling et al. (2002) and Lüdeling & Schmid (2003) propose that the features `bound` and `selecting` should be used rather than the stem-affix distinction. The above described elements are then bound, non-selecting elements.

Another point that is often discussed in this area is the question whether some of the neoclassical elements should be seen as abbreviations or clipped forms rather than as full elements – an examples would be *gastro-* in *gastroguide* where *gastro-* stands for *gastronomy* (see Petropoulou & ten Hacken 2002).

It is clear that any analysis of these elements has implications for the classification of the morphological process that combines them.

4. The status of neoclassical word-formation

Before discussing the theoretical status of neoclassical combination the different modes of combination need to be described.

Although details differ between languages, in general we have the 'bound stems' described above that combine with each other to *morpholog-*, *hydrophob*, *telephone*. This is sometimes called neoclassical compounding. Neoclassical compounds and neoclassical elements also sometimes combine with neoclassical affixes to *morphology*, *morphologist*, *hdrophobia* or *hippopotomonstrosesquippedaliophobia* 'fear of long words' (the two 'p' are really used here). Although neoclassical elements tend to combine with other neoclassical elements there are also patterns where neoclassical elements combine with native elements. This seems unproblematic when the neoclassical element itself is a free element (cf. German *Flugnavigation* 'flight navigation') but some authors assume that it is problematic to combine native elements with bound neoclassical elements - the results are sometimes called 'hybrid' formations (van Marle 1985 states that such combinations aim at a 'special effect'). This is taken as one argument for the assumption that neoclassical word-formation and native word-formation form separate systems (see below). The picture is not as simple as this, however. While there are neoclassical elements that are quite specific in their selectional restrictions there are others that combine easily with native elements (Bauer

1998, Booij 2002, Lüdeling et al. 2002, Lüdeling & Schmid 2003). An example are the negation prefixes *un-* (Germanic) and *in-* (from Latin). While it is in general true that *in-* (or one of its allomorphs) attaches only to classical words it is not always true that *un-* attaches only to Germanic words, compare *uninteresting*, *unconscious* or the unclear situation in *undigestable/indigestable*.

Often, a 'linking element' (mostly *o* but sometimes other vowels) is added between two elements: *morph-o-logy*. Does this 'linker' belong to the first or to the second element?

In contrast to 'linking elements' in many Germanic compounds which are usually assumed to belong to the non-head of the compound here we seem to have patterns where each element requires an *o* (and then one of them is deleted). This can be observed in those cases where a neoclassical element combines with a native element, as in German *krypt-o-* as in *Kryptogesetz* 'crypto law' or *Kryptoverbot* 'crypto ban' as well as *-o-thek* in *Traumothek* 'dream-o-thek' or *Jazzothek* 'jazz-o-thek'.

All these differences – especially the facts that there are complex words that consist solely out of bound elements and the phonological differences– suggest that neoclassical word-formation should be seen as a system that is different from native word-formation in the base language in that it has its own rules and elements (Bloomfield 1933, Domenig & ten Hacken 1992, Fuhrhop 1998 and many others). Aronoff (1976) assumes a non-concatenative model in which neoclassical elements appear only in complex words and if an element appears in more than one complex word, one of them must be primary. Selkirk (1982) and Scalise (1986), for example, suggest that we have a class of stem compounds that differs from (native) word

compounds. Lüdeling et al. (2002), on the other hand, argue that the class of neoclassical combinations, just like the class of native combinations, is not homogenous and suggest a unified concatenative approach where neoclassical is simply one feature among many.

5. Productivity

Some of the authors that assume different word-formation systems for native and neoclassical word-formation also assume that neoclassical word-formation is not synchronically productive (van Marle 1985 even states that the notion 'productive' is only applicable to native elements in a language). The data suggests otherwise, however: qualitative aspects (roughly what Bauer 2001 calls *availability*) as well as quantitative aspects (Bauer's *profitability*, see Baayen 2001) show that neoclassical word-formation is productive (see also Plag 1999). Lüdeling & Evert (2004) show that neoclassical elements like non-medical *-itis* have become productive within the last decade or so.

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