



Three-factor prototypicality evaluation and the verb *look*



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ABSTRACT

Various linguistic and extra-linguistic criteria have been put forward as useful for evaluating the semantic prototypicality of polysemous lexemes. It has been suggested that most of these criteria are linked to frequency of occurrence of senses. However, the provision of additional quantitative linguistic data can shed more light on this complex lexical issue. The present paper embarks on a corpus-based investigation of whether a three-factor measurement of prototypicality based on a) *frequency of occurrence* of a sense (as the central feature), b) *contextual saliency*, and c) *inter-category similarity* produces significant results, particularly when applied to a highly polysemous lexeme – in this case the verb *look*. Besides investigating the quantitative linguistic background of the central (prototypical) member of a semantic category, the paper briefly scrutinizes whether the same combination of quantitative data can be applied to gauging the level of prototypicality of senses other than the prototype. The findings strongly support the application of the proposed three-factor methodology and point to the need for further work on the identification of suitable criteria for evaluating attested levels of category membership of multiple senses of a lexeme.

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1. Introduction and background²

Various single-factor criteria, both linguistic and extra-linguistic, have been suggested for the identification and evaluation of levels of semantic prototypicality. The extra-linguistic criteria tend to be connected to ease of activation, earliest acquisition, and the etymological origins of a sense of a lexeme (Gilquin, 2006). The most commonly suggested linguistic indicator of lexical-semantic prototypicality is *comparative frequency of occurrence* (Lakoff, 1987; Rice, 1987; Brugman, 1988; Brugman and Lakoff, 1988; Taylor, 1989; Tsohatzidis, 1990; Rice, 1996; Taylor, 1998; Tyler and Evans, 2003; Grković-Mejdžor, 2008; Geeraerts, 2010). While we know that frequency of occurrence is indeed a central factor determining the semantic center of a polysemous lexeme (also permeating the non-linguistic factors), other supporting linguistic criteria may also be used to evaluate levels of semantic prototypicality. We will argue that the use of a three-factor measure of prototypicality gives a deeper insight into lexical semantic prototypicality. Besides frequency of occurrence, the two additional factors proposed are *contextual saliency* and *inter-category similarity* (Gries, 2006: 75–76).

Several extra-linguistic factors, most of which stem from the tradition of attesting prototypicality of cognitive categories, can be considered for the supporting evidence of prototypicality that they provide. All of them are extremely difficult to attest

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empirically as they rely on subjective interpretation, result in a large degree of variation, and, in the case of etymological information, can be considered unreliable. Additionally, all of them seem to follow from the frequency of occurrences of a sense, favoring the more frequently used readings as more semantically prototypical. The following is a list of suggested extra-linguistic criteria for identifying prototypical senses (Gilquin, 2006: 160):

- prototypical senses are usually the ones that first come to mind and are produced first in psychological priming experiments;
- prototypical senses are also easiest to recognize and are hence perceptually most salient;
- prototypical senses are acquired by children before any other members of a given semantic category;
- since prototypes are products of earliest acquisition they are also easiest to memorize (and hence fastest and easiest to elicit); and
- prototypical senses are the earliest attested senses in etymological terms.

As the *from-corpus-to-cognition* principle demonstrates (Schmid, 2000: 40), greater attested frequency in language is responsible for greater cognitive entrenchment of more frequent structures. The more frequent a given linguistic structure is, the more salient it becomes, hence it is stored in the mind as more central (Gilquin, 2006: 167). This is the reason we can find frequency of occurrence of a sense underlying every non-linguistic marker of semantic prototypicality we put forward. Following this line of argumentation, we can conclude that the most reliable way to identify the prototype member of a semantic category is to identify the sense most frequently occurring in discourse (Aitchison, 1998: 229–230; Geeraerts, 1988: 220–223; Sinclair, 1991: 36). A further motivation behind the theoretical construction of semantic prototypicality in terms of quantitative linguistic criteria is the empirical grounding that comes with it.

The first problem with relying on only one type of quantitative linguistic data is that there is a lack of corroborating criteria which could provide a means of cross-checking the proposed prototypicality. The second problem is that frequency information tells us very little about the levels of category membership of related senses of a polysemous lexeme other than the prototype. By employing additional criteria and combining and scaling the different measures we propose, we would be able to say, for instance, which is the second and which is the third most prototypical sense and so on. The additional criteria would allow a detailed investigation of the linguistic behavior of the senses of a given polysemous lexeme.

Contextual saliency and *inter-category similarity*, as the suggested supplementary factors, go far beyond mere frequency. They focus on the degree of freedom of appearance a given sense has in terms of the linguistic contexts it can appear in. The concept of *contextual saliency* stems from the idea that the less contextually constrained a sense is, the more prototypical it will be. The premise is that a prototypical sense is used in communication far more frequently and more widely than other related senses. The more frequently a sense is used in different communicative situations, the wider its contextual environment becomes, and hence the more prototypical is the sense in question (and then in turn more frequently used, reinforcing the whole cause–consequence cycle). By default this means that all other senses within the polysemy spectrum will be more formally (contextually) constrained. The prototype of a given linguistic category should therefore also serve to identify the central contextual tendency of that category in a semantic and morpho-syntactic manner. Being the most contextually salient sense, the prototype should share contexts of appropriate use with the greatest number of the other related senses. In other words, the semantically prototypical sense should also be the one with the greatest *inter-category similarity*, i.e. the semantically prototypical sense would be the one which overlaps to the largest degree with the possible contextual appearances of other senses of the same polysemous lexeme. In short, *contextual saliency* measures how many contexts a sense appears in, *category similarity* measures how many contexts a sense shares with other senses of the same lexeme. The distances between the shared and non-shared contextual attributes could further be understood as corresponding to the “prototypicality distances” between members of the category.

If we take the example of the lexeme *bachelor* to illustrate this line of reasoning, its most frequently occurring sense (out of the five listed in the [New Oxford Dictionary of English](#)) seems to be ‘a person who holds a first degree from a university or other academic institutions’ (Dobrić, 2010: 100). Following the argumentation presented above, we could conclude that it can be considered as the best candidate for the prototype reading of the lexeme due to its highest frequency of occurrence. The reason why it is the most frequently occurring sense of *bachelor* in discourse is probably because it is the one most widely needed in communication. This in turn suggests though that because this sense of the lexeme is employed so often, it will appear in a wide array of morpho-syntactic and semantic contexts. We will find it used in future tense constructions, in the passive voice, in plural forms, as an acronym, and so on. Since other senses of *bachelor* have been attested as occurring less frequently (some, in fact, extremely infrequently, such as the archaic ‘a young knight serving under another’s banner’), we could argue that they will necessarily tend to appear in less diverse types of context. This would mean that the sense ‘a person who holds a first degree from a university or other academic institutions’ is more contextually salient than other senses of the lexeme. And through appearing in more diverse contexts than any other related sense, its contextual range would likely overlap with all or most of the contextual ranges of the other senses of *bachelor*. If this is indeed the case, the reading ‘a person who holds a first degree from a university or other academic institutions’ would display the highest comparative degree of inter-category similarity (the category being the polysemy of the lexeme *bachelor*). In essence, we could claim that this is the prototypical sense of the lexeme *bachelor* should we be able to confirm through empirical (corpus) data that it is:

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