

Family resemblance and semantics: the vagaries of a not so new concept

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Résumé : La ressemblance de famille est cette propriété des catégories dont les membres ne possèdent pas nécessairement de traits communs en vertu desquels ils tombent sous cette catégorie. Lorsque la théorie du prototype fut exportée vers la linguistique, la ressemblance de famille devint un outil descriptif central de la sémantique cognitive. Ce billet explore les origines du concept de ressemblance de famille, et montre brièvement ce qu'il en advint en sémantique cognitive. Cette esquisse historique va à l'encontre de l'affirmation selon laquelle la ressemblance de famille s'opposerait à la tradition philosophique et constituerait une innovation décisive.

Abstract: Family resemblance is said to characterize a category when its members need not share common features in virtue of which they are so categorized. When prototype theory was exported to linguistics, family resemblance became a key descriptive tool of cognitive semantics. The present post explores the sources of the family resemblance concept, and briefly shows what became of it in cognitive semantics. This historical sketch challenges the view that family resemblance would run counter to the philosophical tradition and would be a decisive innovation.

The motivation for writing this post is twofold: first, there is still something to be said about the origins of the notion of *family resemblance* and its application to semantics, most notably in the version of prototype theory which has gained currency in cognitive linguistics; second, exploring this genealogy puts us in a position to dispel an illusion. This is the illusion that cognitive semantics is an innovative approach, especially because it does away with the so-called “classical” conception of concepts as definable in terms of necessary and sufficient properties. My point is that a notion of prototype and family resemblance can be and has been found in Aristotle’s thought, that is, in the tradition which is also the source of the classical conception; further, analyses similar in spirit to those of cognitive semantics have been put forward long before family resemblance was mobilized to justify them.

To start, let us go back to the sources of Rosch and the context in which family resemblance was exported to prototype theory (for more details, Fortis 2010).

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The sources of Rosch: Wittgenstein

As pointed out in Baker’s and Hacker’s commentary (2005), family resemblance was intended as an antidote to Wittgenstein’s first attempts at defining the essence of terms like ‘proposition’, or ‘language’ (see also Krüger 1994).

The §§66-67 of Wittgenstein’s *Philosophical Investigations* are the locus classicus. Here is an abridged reminder of them:

66. “Consider for example the proceedings that we call “games”. I mean board-games, card-games, ball-games, Olympic games, and so on. What is common to them all? Don’t say: “There *must* be something common, or they would not be called ‘games’ ” — but *look and see* whether there is anything common to them all. (...)

And the result of this examination is: we see a complicated network of similarities overlapping and criss-crossing: sometimes overall similarities, sometimes similarities of detail.

67. I can think of no better expression to characterize these similarities than “family resemblances” [*Familienähnlichkeiten*]; for the various resemblances between members of a family: build, features, colour of eyes, gait, temperament, etc., etc. overlap and criss-cross in the same way. — And I shall say: ‘games’ form a family.” (2006 [1953] : 27-28)

Games being heterogeneous, language games are too; on this account, there is nothing common to all language games in virtue of which we call them so. The consequence, says Wittgenstein, is that “what we call “sentence” and “language” has not the formal unity that I imagined [i.e. in the *Tractatus*], but is the family of structures more or less related to one another” (2006 [1953], §108: 40).

Let us now turn to the role which was given by Rosch to the notion of family resemblance.

In the 1970s, Rosch was extending her prototype theory from “natural categories” (colors and shapes) to “semantic categories” (= lexical ‘concepts’), but, unlike natural categories, semantic categories could not be structured along a continuum of variations with peaks of typicality corresponding to prototypes. In other words, she needed for “semantic categories” a counterpart of this Gestalt-like “internal structure” of natural categories. This is where family resemblance entered the scene; it was introduced by Rosch in the following terms:

“This principle was first suggested in philosophy; Wittgenstein (1953) argued that the referents of a word need not have common elements in order for the word to be understood and used in the normal functioning | of language. He suggested that, rather, a family resemblance might be what linked the various referents of a word. A family resemblance relationship consists of a set of items of the form AB, BC, CD, DE. That is, each item has at least one, and probably several, elements in common with one or more items, but no, or few, elements are common to all items” (Rosch & Mervis 1975: 574-5).

Once it was established that semantic categories had a family resemblance structure, Rosch felt she needed an explanation for the formation of these categories, since their structure could not be due to perceptual principles. More precisely, three aspects of this structure had to be accounted for: 1) why are semantic categories formed at all? 2) how can they be cohesive given that their members need not have features common to all? 3) how can the taxonomical organization of semantic categories be explained?

The answer to the first question was both probabilist and, in spirit, pragmatist: categories are formed because they are useful, and they are useful because they correspond to bundles of unpredictable attributes (e.g. what looks like an apple is also edible); unpredictability was measured by a probabilist index (*cue validity*, first proposed by the Viennese psychologist Egon Brunswik, 1903-1955). As for the second aspect, cohesiveness, it was “shown” that the degree to which members of a category resemble each other was higher than the degree to which they resemble members of contrastive categories (in fact, the demonstration was based on artificial categories of meaningless items, because it had turned out to be impossible to conduct the experiment with “semantic categories”); in this respect, of all members, a prototype could be defined as the one with the highest cue validity (Rosch & Mervis 1975: 602). Finally, the very existence of degrees of genericity (taxonomy) was not thoroughly justified, except for a level called “basic level”, which, explained Rosch, among other properties, was the level with the highest number of unpredictable attributes.

In short, family resemblance was incorporated into a probabilist theory which, unlike Wittgenstein, posited the existence of prototypical members and focused on taxonomical organization (a very “Aristotelian”, or Porphyrian concern, by the way, though Rosch’s inspiration was principally Berlin’s work on folk taxonomies).

The first cognitive linguists, who sought to enter fields left open by generative linguistics, from which they were disaffiliated, were, to a certain extent, cut off from the tradition of lexical semantics. They found that prototype theory was a handy tool for engaging in this line of research and especially for dealing with polysemy (on this transition, see Kleiber 1990); it should be noted, however, that they failed to take into account cue validity, and consequently tended to neglect the contrastive dimension of categories. As a consequence, prototype theory was essentially reduced to two tenets: there are central meanings, and meanings of polysemous words are linked by family resemblance. Note that by identifying prototypes with attested meanings (e.g. certain spatial relations in the case of prepositional meanings), cognitive linguists interpreted Roschian prototypes as members of a category. They were justified to do so insofar as Rosch & Mervis (1975) explicitly invited this interpretation. However, in other places, Rosch warned against this construal, speaking of prototypes as “grammatical fictions” resulting from the reification of judgments of typicality (Rosch 1978: 40).

To sum up, a simplified and reifying version of prototype theory served to reopen the field of lexical semantics, in an environment (American post-Bloomfieldian linguistics and generative linguistics) which showed little concern for it (but see Katz & Fodor 1963), or was to a large extent oblivious of the modern European tradition, still well alive for example in Ullmann's book, *The Principles of Semantics* (1951), that is, shortly before the advent of generative linguistics.

Complexive groupings: Werner, Vygotsky, Bruner

The reference to Wittgenstein's family resemblance should not eclipse a line of inquiry, which Rosch mentions in passing, and whose influence, therefore, is difficult to assess. I shall dwell on it a little, since this work does not seem to be very well known. I am alluding here to the following passage (Rosch & Mervis 1975: 602) : "The principle of family resemblances in adult categories casts a new perspective on children's classifications. Young children have been shown to classify objects or pictures by means of complexive classes, that is, classes in which items are related to each other by attributes not shared by all members of the class (Bruner, Olver, & Greenfield, 1966; Vygotsky, 1962)." It is probable that Rosch, a former student of Harvard, where she wrote a dissertation on child psychology, had first-hand acquaintance with complexive classes through the work of Bruner, who was an authority on child development and was working in the same university. Now, Bruner himself had borrowed the notion from Vygotsky, which is duly acknowledged in Rosch's references above. Note that Bruner may have influenced Rosch in other ways, for example in his pragmatist views on categorization (Fortis 2010).

A few words need be said on complexive classes. Their closest origin is the developmental theory of Heinz Werner, whom Vygotsky quotes on several occasions (1962; 1988 [1934]). For Werner (1933), complex states are undifferentiated psychological contents or acts which are grasped as total units. The most primitive complex states are intuitive groupings which give rise to collections organized according to Gestalt-like principles. Further, connections between objects are initially context-dependent, so that features linking objects can hardly be abstracted from the situation *hic et nunc*. Being subject to circumstances and merged into complex psychological units, these linking features cannot stabilize a word's meaning, with the consequence that the child's verbal concepts do not have the character of generic concepts subsuming clearly defined instances. Conceptual development requires that holistic and situation-dependent states be progressively differentiated into recurring features. Importantly, complex thinking is an inferior form of cognitive functioning, which is the hallmark of so-called *Naturvölker*, children and subjects suffering from mental disorder (esp. schizophrenia, agnosia and aphasia). Werner's insistence on the feeble capacity of "primitive" people for abstraction, and his willingness to confirm his own prejudices with a perfunctory use of the literature are a most unpleasant aspect of the book.

Like in Werner's theory, in Vygotsky's account complexive classes are characteristic of a stage in the cognitive development of the child. During this stage, objects are grouped together through attributes that may vary from one pair of associated items to the next. Classes thus formed may have various structures: they may be built around a nucleus, i.e. a central instance sharing at least one attribute with every member; they may comprise objects that are functionally related (like 'fork' and 'plate'), or made up of elements chained together like the links of an associative chain, or even be unified by features that are themselves somewhat vague or diffuse. Since complexive classes are not based on consistently applied features, they are not yet "concepts". Features criterial of a concept must be consistently singled out and, as it were, stabilized for concept formation to take off. But such stabilization is made possible, says Vygotsky, through language; and it is thanks to this verbal *instrumentation* (as Bruner was later to put it), in interaction with adults, that the child raises itself above this stage of erratic categorization.

Remarkably, of words as they are used by children when referring to complexive classes, Vygotsky says they are akin to *family names*, insofar as they connect objects by similarity without there being consistency in the features establishing this similarity. A last point deserves mention. Vygotsky notes that lexical semantic change is typically complexive, since it is generally the case that new meanings link up with older ones through features of a contingent and unpredictable nature.

In pursuing Vygotsky's ideas on complexive classes and the role of language, Bruner, or so it seems to me, is faithful to his Russian precursor. His typology of complexive classes is close to that of Vygotsky (Bruner 1964; Bruner et al. 1966).

Obviously, for Rosch, complexive classes do not characterize an inferior stage of cognitive development. The family resemblance structure of semantic categories and their very cohesiveness ensure that Rosch's complexive classes are not collections of straggling members contingently brought together under a name. In short, though they have a comparable structure, they are more tightly organized than Vygotsky's

complexive classes. And Rosch's concern is not to explain how we get from complexive classes to bona fide concepts with clearcut boundaries.

Sketch of a partial genealogy

There is an abundant literature on the origins and interpretation of Wittgenstein's family resemblance. To the best of my knowledge, the most comprehensive review can be found in Goeres (2000). As far as we know, the term first appeared in a remark on Spengler's *Decline of the West*, in a passage where Wittgenstein compares the network of similarities between *Kulturperioden* to those which exist between members of the same family and across different families (Wittgenstein 1977: 48; cf. Ferber 1991 on the relation to Spengler).

Roughly, we may say that the possible sources for the term (i.e. *Familienähnlichkeit*), that is, Schopenhauer, Nietzsche and Mauthner, do not have the best claim to having inspired the idea itself. The matter of the intellectual sources is further complicated by the fact that some authors, like Kries, consider that recollecting by resemblance is a property of a type of concept formation (*synchysis*) which can be considered independently of the use of language, while others, like Bühler, define such concepts with respect to their linguistic expression.

In what follows, I will focus on views which are related both to the Wittgensteinian idea of *Familienähnlichkeit* and to what became of it in cognitive semantics.

“Analogy”

At the beginning of *Women, fire and dangerous things* (1987: 18), we see Lakoff praising Austin (1961 [1940]) for having “prefigured much of contemporary cognitive semantics”, especially on account of Austin's discussion of the polysemy of *healthy*.

Let me reproduce Austin's text as quoted by Lakoff: “The adjective ‘healthy’: when I talk of a healthy body, and again of a healthy complexion, of healthy exercise: the word is not just being used *equivocally*... there is what we may call a *primary nuclear sense* of ‘healthy’: the sense in which ‘healthy’ is used of a healthy body: I call this nuclear because it is ‘contained as a part’ in the other two senses which may be set out as ‘productive of healthy bodies’ and ‘resulting from a healthy body’... Now are we content to say that the exercise, the complexion, and the body are all called ‘healthy’ because they are similar? Such a remark cannot fail to be misleading. Why make it?”

On Lakoff's view, Austin's *primary nuclear sense* would be a precursor of the notion of prototypical meaning. Readers acquainted with the philosophical tradition will have recognized in *healthy* the example Aristotle cites when he introduces a form of polysemy which he calls *pros hen* (i.e. said with respect to one <thing>). The example occurs in a famous passage of the *Metaphysics* (Γ 2, 1003a33), in the context of a discussion of the polysemy of ‘be’, which, were it to be a case of genuine equivocality, would undermine the very enterprise of metaphysics. Now, Austin does acknowledge his debt in the above passage but Lakoff took care to suppress the mention of Aristotle in Austin's text, perhaps because it would not have squared well with trumpeting the novelty of his own views.

For reasons that need not detain us here, in the case of ‘be’ and ‘healthy’, tradition has often spoken of *analogy pros hen*, or even of *homonymy pros hen* (see e.g. Porphyry in Sorabji 2005: 234-5) although Aristotle just speaks of *pros hen kai mian phusin legesthai* (‘be said relatively to one thing and one nature’), and certainly not of analogy nor homonymy. It is interesting to note that when Brentano (1862: 96) discusses this form of “analogy” (his word), he finds it apt to say that terms like *healthy* behave, with respect to what they refer to, like family names (*Familiennamen*) with respect to their referents; in other words, languages are often unspecific and designate with one and the same “name” things whose family resemblance stems from the fact that they are all related to a fundamental meaning.

The recognition of the phenomenon of polysemy by Aristotle is especially clear in his treatment of the Greek preposition *en* ‘in’, in *Physics* (209a15sq). The passage enumerates the various meanings of *en*, of which the spatial meaning is singled out as “primary”:

- (i) a finger is in a hand (a part is in a whole)
- (ii) a whole consists in parts
- (iii) man is in animal (eidos en genei ‘species in genus’)
- (iv) animal is in man (meros tou eidous en tōi tou eidous logōi ‘part of the form in the definition of the form’)
- (v) health in warm and cold things (to eidos en tēi hulēi ‘form in matter’)

- (vi) the affairs of Greece lie in the King's hands (en tōi prōtōi kinētikōi 'in the first mover' i.e. in the efficient cause)
- (vii) [the motive to action is found] in the [expected] good (en tōi telei 'in the goal', i.e. 'in the final cause')
- (viii) primary sense (kuriōtaton): 'in a vessel' and generally 'in a place'.

Although Aristotle's description is localist, since he regards the relation of spatial containment as primary, his localism is not justified on cognitive grounds. Rather, space is primary because, says Aristotle, "that without which nothing else can exist but which can exist without anything else is primary" (*Physics* 209a1-2). With this restriction in mind, the style of his analysis is reminiscent of the localist descriptions of prepositions of which cognitive semantics has given us so many illustrations.

To sum up, if Austin is a precursor of the notions of prototype and family resemblance, and even of cognitive semantics at large, then Aristotle is a precursor too. The claim that cognitive semantics goes against the philosophical tradition "from Aristotle to the later work of Wittgenstein" (Lakoff 1987: 6) should therefore be taken with a grain of salt.

Semantic analysis and semantic change

Baker and Hacker (2005) note that Wittgenstein was not the first philosopher to fight against this "craving for generality" (Wittgenstein 1958: 17) which manifests itself in the temptation of defining concepts in terms of common properties shared by their instances. By way of illustration they cite Dugald Stewart's essay *On the Beautiful*, in which Stewart condemns the prejudice "that when a word admits of a variety of significations, these different significations must all be species of the same genus; and must consequently include some essential idea common to every individual to which the generic term can be applied" (1816: 260). Instead, Stewart's suggestion is to analyze the meaning of 'beautiful' as a chain of meanings linked together by successive generalizing steps.

Stewart referring back to D'Alembert and his discussion of figurative meaning / meaning *par extension* points to a line of thought which is connected with philosophy but has let its influence be felt also in lexicography and rhetoric. The connection which links up reflections about primary and derived meanings with philosophy is especially clear for texts which betray, I think, an influence of empiricist ideas. We see, for example, a number of authors (not necessarily proponents of empiricism), from Leibniz to Condillac, Harris and some linguists of the 19th defend localist analyses of prepositions and cases, i.e. analyses in which the primary function of prepositions and cases is that of expressing concrete, spatial relations (Fortis 2014). A quite common claim is that primary meanings are extended to more abstract meanings by metonymy, metaphor or some sorts of synesthesia or syncretic perception. In this respect, cognitive semantics is a continuation of this philosophically impregnated strand.

In several studies (esp. 1988, 2010), Geeraerts has drawn attention to similarities between modern cognitive semantics and the historical-philological tradition. This is not the place to expatiate on this subject, let it just be emphasized that in this tradition, somewhat artificially segregated from the one just mentioned, analyses by semantic chains have been practiced of long. The parallel with cognitive semantics goes even further. In *La Vie des Mots*, Darmesteter (e.g. 1887: 82-3) proposes diagrammatic representations of semantic change that may be taken as diachronic counterparts of the semantic networks which Lakoff, Brugmann and others made fashionable from the 1980s on. When nearly a hundred years after Darmesteter, Nunberg (1978) rummaged through these antiquated studies, he thought that something could be gleaned from them for synchronic analysis, or, to borrow his words "that the meaning-relations that held between new and old uses of words were very like the meaning-relations that hold synchronically among the psenses [= particular uses of words] of polysemous words..." This was not to say that the ghostly presence of the etymon still made itself felt, as had been sometimes speculated. Rather the notion that central and derived meanings are linked by associations, analogies, metaphors etc. could be applied to synchronic analysis. Note, however, that Nunberg had qualms about the possibility of identifying a central meaning in every instance (Nunberg 1979). At any rate, since Lakoff read Nunberg, an influence of Darmesteter cannot be ruled out.

What is the conclusion, or perhaps the lesson, to be drawn from this discussion? We should not speak purely and simply of "rediscovery" nor lament the amnesia of linguists. First, the reintroduction of ideas of yore fulfilled a strategic goal, that of finding a niche for practitioners who had broken up with generative linguistics. Old and venerable ideas are especially well-suited for pursuing this aim: their distant but unmistakable familiarity lends them credence and makes them easier to adopt. Second, ideas of the

philosophical, rhetorical and philological tradition did get transmitted after all, although the depth of their roots was probably underestimated and distant sources were sometimes forgotten or downplayed, or dissimulated. However, for the next generation, trained after the emergence of cognitive semantics, there is a risk that the reinvention of the wheel be taken as a breakthrough.

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