『東京大学言語学論集』 **37** (2016.9) 239-259

Realism and Anti-Realism of Polysemy

Tomohiro Sakai
t-sakai@waseda.jp

Keywords: polysemy, network model, realism, anti-realism, pessimistic induction, linguistic knowledge[1]

Abstract

The purpose of this paper is to examine, from a philosophical perspective, the validity of the literal or realist interpretation of the polysemy network model assumed in cognitive linguistics. It will be shown that, succumbing to all types of selective skepticism about theoretical entities, polysemy networks fail to be part of the knowledge of language defined as the (largely tacit) knowledge that makes the use of language possible. The practice of constructing the network model is at odds with the goal, professed by linguists, of accounting for the linguistic knowledge. This allows us to rationally recommend them to change either their goal or their practice, as suggested by Laudan's (1984) triadic network of justification. Hasegawa (2015) takes the first option by extending the definition of the linguistic knowledge in such a way that it may include the distinction between polysemy and homonymy, despite the fact the distinction has no consequences for native speakers' ability to use words appropriately. This approach is self-destroying, however, in that it entails a radical form of relativism, characterized by the slogan "Anything goes". In order to shun the relativism or anarchism, Kuroda (2015) proposes to optimize the network model so that it can be substantiated by psychological experiments. Contrary to his claim, however, the psychological method does not enable us to believe in the network model, whether it be optimized or not. If our argument is on the right track, there is no positive evidence that polysemy networks really exist in the mind/brain. As Langacker (2006, 2013) puts it, the network model is no more than a metaphor, to the lure of which we must not succumb.

1. Introduction

Among the theoretical entities commonly assumed in cognitive linguistics are polysemy networks, where the meanings of a lexical item are interconnected to each other by such extension relations as metaphor or metonymy (cf. Brugman 1981). The nuclear structure of the network is illustrated in Figure 1, where sense B is a metaphoric or metonymic extension of sense A, while C is a sense schematic for both A and B (Taylor 2003: 164-165).

1 This paper is based on my presentation at the symposium "The Linguistics and Philosophy of Polysemy", held at Waseda University on December 12, 2015. My deepest thanks go to the other participants in the symposium: Kaori Yamasaki (Ochanomizu University), Sayaka Hasegawa (Seikei University), Yoshiki Nishimura (University of Tokyo) and Masataka Yamaguchi (Kobe City University of Foreign Studies). Without their comments on my presentation, it would not have been possible to complete this paper.

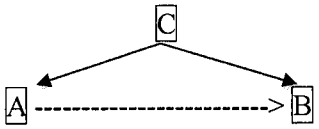

Figure 1: The Nuclear Structure of the Network Model

As an alternative to the criterial attribute model, where the meaning of a lexical item is viewed as a set of necessary and sufficient conditions for its use, the network model, which hinges on the prototype theory, purports to be a proper model for our knowledge of polysemy, traditionally defined as "the association of two or more related meanings with a single linguistic form" (Taylor 2012: 219). Crucially, it purports to give an account of the fact that "the meanings of a commonly-used lexical item define a complex category, i.e. one that is not reducible to a single structure (node)" corresponding to sense C in Figure 1 (Langacker 1988: 135).

The rejection of the criterial attribute model, however, does not necessarily establish the validity of the network model. This move can only be justified if there are no other options at all. Then, the question that must now be addressed is this: Does the network model properly account for our knowledge of polysemy? Fully aware of the issue, Langacker (2006, 2013) warns the linguist of the danger of giving too realist an interpretation to the network model.

> The network model is inappropriate if pushed too far. In particular, it is wrong to ''reify'' the senses in a network by viewing them as well-delimited islands representing the only linguistic meanings a lexeme can assume. Such atomization of the field of meaning- or use-potential is artificial and leads to pseudo-problems, e.g., the problem of ascertaining which discrete sense a given use instantiates.
>
> (Langacker 2006: 144-145)

> Bear in mind that the network model of complex categories is a metaphor. Like any metaphor, it is helpful in certain respects but potentially misleading in others, On the one hand, the network model is useful because it captures some essential properties of complex categories: that there are multiple variants, that these are related in certain ways, and that some are more central (or easily elicited) than others. On the other hand, the model proves misleading if the discreteness it implies is taken too seriously. It suggests that a category has an exact number of clearly distinct members, that it exhibits a unique configuration defined by a specific set of categorizing relationship, and that a target of categorization can always be assigned to a particular category member. Yet these entailments of the metaphor should not be ascribed to the actual phenomenon.- if you look for a category in the brain, you will not find boxes linked by arrows. It may well be that the network metaphor has outlived its usefulness. At the very least, it should be counterbalanced with an alternative metaphor that emphasizes continuity rather than discreteness. (Langacker 2013: 227)

Despite Langacker's repeated warnings, a number of researchers are committed to "a strict interpretation of the network metaphor that takes its discreteness quite literally and as constituting the total description of lexical meaning" (Langacker 2006: 145).

In this paper, it will be shown, drawing on the debate between scientific realism and anti-realism/skepticism, that there is no empirical evidence for the model as it is construed literally or realistically.

2. What is and what is not the object of skepticism

Before going into the matter, it should be kept in mind that the skepticism about polysemy networks does not entail that of polysemy *per se*. There is no doubt that a single linguistic form can have several uses. The verb *cut*, for example, can be used in such collocations as *cut an apple*, *cut grass*, *cut class*, etc., where different manners of cutting are expressed by the single linguistic form *cut*. The modal auxiliary *may* can be used to express possibility, permission and wishes. The noun *eye* can be used to denote the two organs on the face and the ability to see. These facts are so obvious that no skepticism can arise here. What we can or must be skeptic about is the realist construal of the network model put forward by Lakoff and Brugman (1986).

> Such polysemy chains are hypothesized to account for synchronic connections in the semantic knowledge of the user. [...] These chains exist statically to structure semantic information in the lexicon. We are not proposing them as parts of "semantic derivations", nor are we proposing them as recapitulations of historical change [...]" (Lakoff and Brugman 1986: 451)

On this view, endorsed explicitly or implicitly by a number of cognitive linguists, the meanings of a lexical item are linked to each other in the mind, and this makes the proper use of the word possible.

At odds with the realist construal of the network model is the fact that researchers do not converge, despite their long-term effort, on the exact nature of the networks associated with a word (Sandra and Rice 1995, Moriyama 2015a). "Not infrequently, given the subjective evaluations needed to implement this approach, different linguists may come up with different proposals for what is supposed to be the basic sense" (Taylor 2012: 229). If there is no agreement on the basic sense, i.e. "that meaning from which all others can be most plausibly and most economically derived" (ibid.), there will, *a fortiori*, be no hope of convergence on the entire form of the model[2].

The lack of convergence provides an argument, albeit a weak one, against the reality of polysemy networks. To ask which network model best represents our knowledge of the word may then be to ask the wrong question, just as you can hardly ask which picture best represents Martians or phantoms. The right question, for the moment, is rather to ask whether polysemy networks really exist, that is, whether they are part of the linguistic knowledge, defined as "the (largely tacit) knowledge that makes the use of

[2] Recall that researchers are not dealing with historical change, as Lakoff and Brugman (1986) put it. From a historical point of view, we can hope to arrive at a (approximately) true model, which is supposed to represent the true historical derivations of senses. In fact, we are dealing here with "synchronic connections in the semantic knowledge of the user" (Lakoff and Brugman 1986: 451), concerning which we have no means for evaluating competing theories (cf. Lyons 1977: 552).

language possible" (Saito et al. 2015: 176). Insofar as this question is not answered positively, the pursuit of the 'correct' network model has no significance as a research program in modern linguistics, whose ultimate aim is to account for the faculty of language of the human species[3].

3. Realism-in-general and Realism-in-particular

The question raised in the preceding section can be rephrased in terms of the debate on scientific realism and anti-realism. Scientific realism is the position which claims that "the entities, states and processes described by correct theories really do exist" (Hacking 1983: 21), whereas anti-realism is the position which claims that entities posited by theories are fictions and that "theories about them are tools for thinking" (ibid.). Unlike realists, anti-realists "will not include theoretical entities among the kinds of things that really exist in the world" (ibid.)[4]. Disputes between realism and anti-realism have repeatedly occurred in the history of science. Hacking (1983) discusses the realism and anti-realism of photons:

> We should also distinguish realism-in-general from realism-in-particular.
>
> To use an example from Nancy Cartwright, ever since Einstein's work on the photoelectric effect the photon has been an integral part of our understanding of light. Yet there are serious students of optics, such as Willis Lamb and his associates, who challenge the reality of photons, supposing that a deeper theory would show that the photon is chiefly an artifact of our present theories. Lamb is not saying that the extant theory of light is plain false. A more profound theory would preserve most of what is now believed about light, but would show that the effects we associate with photons yield, on analysis, to a different aspect of nature. Such a scientist could well be a realist in general, but an anti-realist about photons in particular. (Hacking 1983: 29-30)

Given the distinction between realism-in-general and realism-in-particular, a cognitive linguist can be a realist in general, but an anti-realist about polysemy networks. This is precisely the option we will consider in what follows. Perhaps some might say that the dispute between realism and anti-realism is philosophical in nature, having little to do with linguistics as an empirical science. Hacking (1983) indicts this demarcation, however, by saying that "such localized anti-realism is a matter of optics, not philosophy" (ibid.: 30), and that "[a] question of realism-in-particular is to be settled by research and development of a particular science" (ibid.: 31). If Hacking's position is a legitimate one, the dispute on the reality of polysemy networks should be settled by research and development of cognitive linguistics, rather than by purely philosophical considerations.

This attitude is underpinned by Todayama's (2012) argument. Psychologists' stance toward what Psillos (1999) calls *t*-discourse is, Todayama says, often inconclusive. A *t*-discourse is a discourse containing *t*-terms, i.e. theoretical terms that purport to refer to *t*-entities, i.e. unobservable theoretical

---

[3] This does not preclude the possibility that the network model may serve for lexicographic or pedagogical purposes. This will amount to instrumentalism as opposed to realism. For a general discussion on the distinction, see Psillos (1999: Ch. 2).

[4] Van Fraassen (1980: 9) defines the two positions as follows: "Scientific realism is the position that scientific theory construction aims to give us a literally true story of what the world is like, and that acceptance of a scientific theory involves the belief that it is true. Accordingly, anti-realism is a position according to which the aim of science can well be served without giving such a literally true story, and acceptance of a theory may properly involve something less (or other) than belief that it is true."

entities. Physical science posits *t*-entities such as electron or proton (Psillos 1999: 3), while psychology posits *t*-entities such as belief or desire. In some cases, psychologists take the realist position by saying that human behavior is causally liked to belief or desire. In other cases, however, they take the non-realist position by saying that such terms do not really refer, being employed merely to organize experience. The latter position corresponds to an instrumentalist position according to which "[theoretical statements] should be considered as merely syntactic constructs for the organization of experience" and "[theories] do not represent anything 'deeper' than experience" (Psillos 1999: 17). The same holds for cognitive linguistics. On the one hand, linguists often talk about the psychological reality of such theoretical entities as polysemy networks (Moriyama 2015b). On the other hand, they sometimes say, rather informally, that such networks just serve for pedagogical purposes[5]. The two positions, however, are not compatible to the extent that, as Todayama (2012) puts it, they give different answers to the question of to what degree it is warranted to use *t*-terms to construct a theory that accommodates the mechanism of the mind. The degree of commitment to *t*-entities depends on the goal of the research. If you just want to predict or control observable phenomena, you can be an instrumentalist. In this case, *t*-entities are viewed as nothing but tools for thinking, like epicycles in the Ptolemaic system, and are not required to really exist. If, on the contrary, you want to pursue the mechanism of the mind that causes us to behave as we do, you must be a realist. In this case, *t*-entities are considered to be really there to induce linguistic behavior. It is not philosophers but researchers of a particular science that have the right to define the objective of their discipline. This is the reason why the dispute between realism and anti-realism regarding polysemy networks should not be left to philosophers.

Normally, the objective of cognitive linguistics (and of psychology, as Todayama (2012) notes) is declared to be the pursuit of the mechanism of the mind/brain. Accordingly, cognitive linguists must take the realist position on polysemy networks. The next question to be asked is whether they have evidence for the realist position.

4. In defense of Realism: No Miracle Argument

A well-known argument for scientific realism is what is called 'the no miracle argument', put forward by Putman (1975) among others.

> The positive argument for realism is that it is the only philosophy that does not make the success of science a miracle. That terms in mature scientific theories typically refer (this formulation is due to Richard Boyd), that the theories accepted in a mature science are typically approximately true, that the same terms can refer to the same even when they occur in different theories – these statements are viewed not as necessary truths but as part of the only scientific explanation of the success of science, and hence as part of any adequate description of science and its relations to its objects.
>
> (Putnam 1975: 73)

[5] This position is not officially declared in the linguistic literature, but it is sometimes expressed in a rather informal manner (Kaori Yamasaki, p.c., 2015).

The no miracle argument claims that the success of a scientific theory is best explained by its being true[6]. Among the criteria for the 'success' of a theory are the following three factors (Todayama 2015): (i) the theory has been applied to the development of useful technology, (ii) the predictions of the theory have been borne out, and (iii) the results of experiments have converged. We might add to the list such social factors as the number of published papers, the foundation of international associations, and so on. Given these criteria, cognitive linguistics may well count as a successful theory. The no miracle argument then tells us that polysemy networks posited by cognitive linguistics gives us true descriptions of the mind.

This conclusion, however, is questionable. Although statistical analyses as made by Moriyama (2015a) may appear to give scientific and true descriptions of what is going on in our brain/mind (cf. Karasawa 2012), the interpretation of the statistical data obtained is often arbitrarily determined by researchers (Yamasaki 2015). What is really needed is not only quantitative data, but also a proper qualitative interpretation of the data, which determines the value of the research (Karasawa 2012). This is exactly what is lacking in much of the research conducted within the framework of cognitive linguistics. If the discipline continues to lack qualitative justification of the research being conducted, it will fall prey to the pessimistic (meta-)induction, as we are going to see in the next section.

5. Against Realism: Pessimistic (Meta-)Induction

A simple but strong argument against scientific realism is what is now known as 'the pessimistic (meta-)induction', put forward by Laudan (1984)[7]. He says on the one hand that "what the theory of science offers us is a plethora of theories that were both successful and (so far as we can judge) nonreferential with respect to many of their central explanatory concepts" (Laudan 1984: 121), and on the other hand that "[m]any theories in the past, so far as we can tell, were both genuinely referring and empirically successful, but we are nonetheless loathe to regard them as approximately true" (ibid.: 123). Psillos (1999) summarizes Laudan's (1984) argument as follows:

> The history of science is full of theories which at different times and for long periods had been empirically successful, and yet were shown to be false in the deep-structure claims they made about the world. It is similarly full of theoretical terms featuring in successful theories which do not refer. Therefore, by a simple (meta-)induction on scientific theories, our current successful theories are likely to be false (or, at any rate, are more likely to be false than true), and many or most of the theoretical terms featuring in them will turn out to be non-referential.
>
> Therefore, the empirical success of a theory provides no warrant for the claim that the theory is approximately true. There is no substantial retention at the theoretical, or deep-structural, level and no referential stability in theory-change. (Psillos 1999: 101)

[6] The no miracle argument takes the form of abduction in Peirce's sense, or 'inference to the best explanation'.

[7] Laudan is certainly not the first to defend this kind of induction. Henri Poincaré explicitly makes a similar point: « Les gens du monde sont frappés de voir combien les théories scientifiques sont éphémères. Après quelques années de prospérité, ils le voient successivement abandonnées ; ils voient les ruines s'accumuler sur les ruines ; ils prévoient que les théories aujourd'hui à la mode devront succomber à leur tour à bref délai, et ils en concluent qu'elles sont absolument vaines. C'est ce qu'ils appellent la faillite de la Science. » (Poincaré 1900: 1168, emphasis in the original)

The pessimistic (meta-)induction deters us from inferring from the success of a scientific theory that it gives us true descriptions of the world. Specifically, it allows for the possibility that polysemy networks as posited by cognitive linguistics may be both successful and radically false. This possibility must be taken seriously, all the more because researchers do not converge, despite their long-term effort, on the exact nature of the network associated with a lexical item (Sandra and Rice 1995, Langacker 2006, Taylor 2012, Moriyama 2015a), as noted in Section 2 above.

To resist the pessimistic induction, Psillos (1999: Ch. 5) proposes the *divide et impera* move, which tries to show that "the success of past theories did not depend on what we now believe to be fundamentally flawed theoretical claims" (Psillos 1999: 108). This move allows us to take the realist stance toward that part of a given theory which contributes to its success, because that part, and only that part, should be retained as an essential part of the theory, even if the theory turns out to be false.

The question that interests us here is whether the network model of polysemy constitutes an essential part of cognitive linguistics that should and can be retained in subsequent theories. In general, the *divide et impera* move offers us the three options given in Figure 2, depending on which part of a given theory we believe to be retained (Todayama 2015)[8].

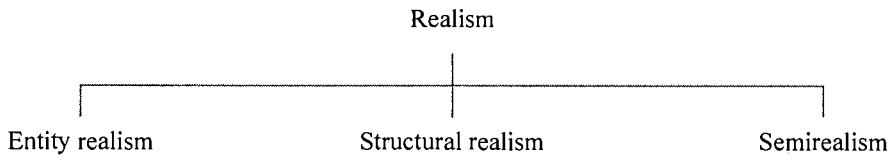

Figure 2: Selective Skepticism

Psillos (1999: 256) calls these options 'selective realist positions', whereas Chakravartty (2007: 29) calls them 'selective s[k]epticism', for they are selectively skeptic about the reality of constituents of a theory:

> The most promising suggestion for realism here comes from a familiar adage. As in life generally, so too in science: do not believe everything you are told. Not all aspects of scientific theories are to be believed. Theories can be interpreted as making many claims about the nature of reality, but at best one has good grounds, or epistemic warrant, for believing some of these claims. Only some aspects of theories are likely to be retained as the sciences march on. I will refer to any approach that takes this advice seriously as a form of *selective s[k]epticism*. The primary motivation for this modification to realism *simpliciter* is to pick out, from among the numerous claims embedded in theories, the ones that are most epistemically secure and thus likely to survive over time.
>
> (Chakravartty 2007: 29, emphases in the original)

In the next section, we will examine if the network model posited by cognitive linguistics can avoid selective skepticism, or equivalently, it can resist the pessimistic induction put forward by Laudan (1984).

[8] Chakravartty (2007) spells "skepticism" as "scepticism".

6. Selective Skepticism

6.1 Entity Realism

Entity realism is "the position that one may believe all sorts of entities posited by scientific theories (e.g. electrons, genes, Higg particles, etc.), while one actually suspends or withholds belief in the theories in which descriptions of these entities are embedded" (Psillos 1999: 255-256). As an entity realist, Hacking (1983: 274) recommends us to "think about practice, not theory", because "[t]he 'direct' proof of electrons and the like is our ability to manipulate them using well-understood low-level causal properties" and "engineering, not theorizing, is the best proof of scientific realism about entities". Hacking's position is summarized in the famous slogan: "*So far as I'm concerned, if you can spray them [= electrons] they are real*" (Hacking 1983: 23, emphasis in the original).

Does this position enable us to believe in polysemy networks? The answer is negative, because we do not know how to manipulate them. Hacking remains skeptical about entities we cannot manipulate; "[l]ong-lived theoretical entities, which don't end up being manipulated, commonly turn out to have been wonderful mistakes" (Hacking 1983: 275)[9]. Polysemy networks are thus likely, according to entity realism, to turn out to be wonderful mistakes.

To accommodate this challenge to the network model, the entity realist might weaken the condition for the reality proposed by Hacking (1983). Even if it is not possible to manipulate unobservable entities, it is still often possible to detect them by making use of their causal properties, because "[a] well designed experiment is constructed to allow us to infer the character of the cause from the character of its more readily observable effects" (Cartwright 1983: 83)[10]. There are good reasons to believe in theoretical entities if they are, though unobservable, causally linked to observers, because "any causal mechanism that is invoked for explanatory purposes must be taken to be real" (Salmon 1984: 238). "If we are not prepared to assert its existence, says Salmon, we cannot attribute explanatory force either to that mechanism or to any theory that involves it" (ibid.)[11]. On this conception, polysemy networks are viewed as being causally linked to phenomena known as polysemy, whose reality we are not challenging at all, as discussed in Section 2 above. However, the reality of the alleged causal link between them is far from obvious, as suggested by the lack of convergence among researchers. If the causal link were obvious, we would be able to infer, from the observable phenomena, a proper network model or at least a set of proper network models potentially corresponding to the knowledge of language users. This is not the case, however. For any phenomenon of polysemy P, you can construct a (perhaps infinite) number of network models M1, M2, ...Mn fully compatible with P. This is the source of the underdetermination discussed by Sandra and Rice (1995), Langacker (2006), Taylor (2012) and Moriyama (2015)[12]. "[D]ifferently

[9] Iseda (2005) makes a similar point. He says that entities which end up being manipulated are generally retained in subsequent theories, while entities which do not, like celestial sphere, phlogiston, ether, etc. are likely to succumb to the pessimistic induction put forward by Laudan (1984).

[10] By invoking the fact that "although philosophers generally believe in laws and deny causes, explanatory practice in physics is just the reverse" (Cartwright 1983: 86), Cartwright distances herself from empiricists, who "are notoriously suspicious of causes" (ibid.: 74).

[11] As Todayama (2015: 180) makes explicit, the causal/mechanic theory defended by Salmon (1984) purports to be an alternative to the deductive-nomological model or the covering law model defended by the logical positivism (Hempel and Oppenheim 1948: 137).

[12] We have an underdetermination of theories if two or more theories are observationally indistinguishable, i.e. they entail

configured networks, says Langacker (2006: 143), might very well give rise to linguistic judgments and behavior which are similar enough that discrepancies would seldom be detected." If it is possible to causally associate M1, M2, ...Mn to P on equal footing, then there are no positive reasons to choose one over the others as the proper model for P. Crucially, it is now equally possible to causally dissociate all of M1, M2, ...Mn from P, since there is no obvious causal link between them. This might suggest that polysemy networks are not part of the linguistic knowledge, defined as "the (largely tacit) knowledge that makes the use of language possible" (Saito et al. 2015: 176), i.e. we can be linguistically competent even if we do not have any polysemy network in our mind.

This is in a sharp contrast with syntactic constituents, for instance. You can make use of several tests to judge whether *chase(d) Bart* in (1) form a constituent or not (Larson 2010: Unit 7).

(1) Homer chased Bart.

The sequence in question can be replaced by *did so* as in (2), can be conjoined with other phrases as in (3), and can be elided as in (4).

(2) Homer chased Bart, and Marge did so, too.
(3) Homer chased Bart and chased Lisa on Monday.
(4) Homer could chase Bart, and Marge could _____, too.

This is to say that utterances like (2-4) are observed in the linguistic behavior of native speakers of English, or that sentences like (2-4) are judged to be grammatical by them. The three tests converge to the conclusion that *chase(d) Bart* form a constituent. The same tests suggest that *Lisa a* in (5) does not form a constituent. There is no proform that can replace the sequence, as suggested by the ungrammaticality of (6). The sequence can never be conjoined, as suggested by the unacceptability of (7).

(5) Homer handed Lisa a baby.
(6) *Homer handed Lisa a baby and Bart handed her dog. (her = Lisa a)
(7) *Homer handed Lisa a and Bart a baby.

If syntactic constituents were not part of the linguistic knowledge, phenomena illustrated in (2-7) would remain unaccounted for. Consequently, according to entity realism, we have good reasons to believe in constituents posited by syntactic theories.

What is going on here can be summarized as follows: the fact that linguistic behavior A is constantly attested confirms the adequacy of a certain syntactic structure A (if you accept induction)[13], and falsifies syntactic structure A' that is distinct from and incompatible with A (if you accept falsificationism).

---

exactly the same observational consequences. In this case, there are no positive reasons to believe in one rather than the other(s) (cf. Psillos 1999: 162).

[13] Here the term 'attested' is intended to mean either 'observed in the linguistic behavior of native speakers' or 'judged to be grammatical by native speakers'.

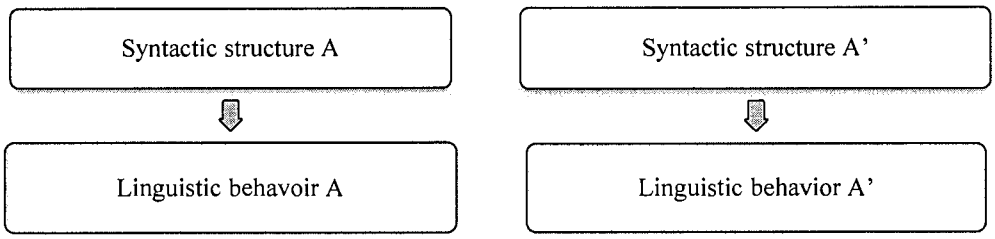

Figure 3: Causal Link between Unobservable Entities and Observable Behavior

By contrast, it is by no means clear whether observable facts can confirm or falsify a given polysemy network model, if we take into account Taylor's (2012: 230) claim that "[w]hether a speaker perceives a word to be polysemous or homonymous probably has no consequences at all for their [sic.] ability to use the word appropriately, in accordance with native speaker norms"[14]. Whether a word is polysemous or homonymous has a significant consequence for the form of the network model, because "[t]he distinction between polysemy and homonymy is usually drawn in terms of whether the different meanings associated with phonological form are related (as in polysemy) or whether they are unrelated (in which case we should speak of homonymy)" (Taylor 2002: 469)[15], and "[i]n the case of homonymy it could be argued that we are dealing, strictly speaking, with two different words which happen to share the same phonological form." (ibid.). If we are dealing with a polysemous word which has senses A and B, A and B must figure in the one and same network model describing the word in question. If, on the other hand, we are dealing with homonymous words that happen to sound the same, one of which has sense A and the other sense B, A and B must not be included in the same model. As a consequence, we have different network models, depending on whether we are dealing with polysemy or homonymy. Despite this significant difference, however, native speakers can behave in exactly the same manner, as Lyons (1977) and Taylor (2003, 2012) claim[16]. This shows that polysemy networks are not causally linked to observable behavior, and hence there are no positive reasons, under entity realism, to believe in such networks.

6.2 Structural Realism

An alternative to entity realism is structural realism, which "relies on a distinction between the *nature* of an entity, or process, and its *structure*, and claims that the latter is captured by the mathematical equations describing the behaviour of an entity, while the former somehow 'lies beyond' what can be quantitatively described" (Psillos 1999: 146-147, emphases in the original). To put it rather informally,

[14] Similarly, Taylor (2003: 106) says that "it is doubtful whether speakers' intuitions in this respect correlate with any observable differences in language use (Lyons 1977: 552)".

[15] Lyons (1977: 551) says that the distinction between relatedness and unrelatedness of meaning is arguably "the only synchronically relevant" criterion for the distinction between polysemy and homonymy.

[16] It must be noted that we are not claiming that there is no individual variation in linguistic behavior. It is obvious that lexical knowledge is different from individual to individual. If two individuals have different states of knowledge about a given word, we need to conceive two different network models for the word, corresponding to each of the two individuals. In this case, "we would be justified in saying that they speak slightly different dialects of the same language" (Lyons 1977: 552). There can be no controversy here. What we are claiming is rather that even for one individual, we can conceive a number of network models which are incompatible with each other but can nevertheless equally well accommodate the behavior of that individual. This is a typical symptom of underdetermination of theories (cf. Psillos 1999: Ch. 8). There can probably be no observable facts that enable us to choose one model over the others.

structural realism suggests that "although the nature of unobservable entities cannot be known, successful scientific theories can still tell us something about the structure of the unobservable world" (ibid.: 151). As noted by Psillos (1999: 149), this position can be traced back to Henri Poincaré, who says that "[t]he true relations between these real objects are the only reality we can attain to, and the only condition is that the same relations exist between these objects as between the images which we are forced to replace" (Poincaré 1900: 1169, tr by Psillos 1999: 150)[17].

The question which interests us here is whether or not structural realism allows us to be committed to the reality of polysemy networks. This question is vacuous, however, to the extent that cognitive linguistics certainly tells us something about the structure of language. Applied to cognitive linguistics, structural realism would say that the success of cognitive linguistics is due to the fact that it (partially) captures the structure of the knowledge of language, while being skeptical about the nature of the entities that realize the structure. Cognitive linguistic research has revealed that our linguistic knowledge includes such structures as prototype categories, metaphor mappings, metonymy relations, etc. Obviously, these structures are to be found, together with, say, constituent structures discussed in, 6.1 above, among those that enable us to use language as we do, as evidenced by classical studies: Rosch (1973) on the category of *bird*, Coleman and Kay (1981) on the definition of *lie*, and so on. Relevant for the present discussion is rather whether these structures are also attested in the alleged organization of the senses of polysemous words. By definition, however, structure realism tells us nothing about the nature of the entities that realize the structures. To be sure, there exist prototypical categories, but we never know, under structural realism, whether or not polysemy should count as one. A prima facie argument for realism is analogy; what is effective for the definition of *bird* or *lie* should be equally effective for the characterization of polysemy. Yet this is at best a very weak argument for the reality of a theoretical entity, and must be supplemented with independent evidence.

6.3 Semirealism

Semirealism, the third position of selective skepticism, is proposed by Chakravartty (2007). This position combines the advantages of entity realism and those of structural realism. In general, a scientific theory consists of existential assertions like "X's exist" and of theoretical assertions like "X's are P" (Todayama 2015: 218). Both entity realism and structural realism force us to believe in only one of the two assertions; the former forces us to believe in theoretical entities without believing in any properties exhibited by those entities, while the latter forces us to believe in properties without believing in any entities having those properties. Unlike these positions, semirealism underscores the fact that knowing an entity E necessarily involves knowing some property P of E, and, conversely, knowing some property P necessarily entails the existence of some entity E exhibiting that property. It recommends us to be committed to the reality of detection properties, properties detected through causal links to observers, as well as their relations, while remaining skeptic about those properties that cannot be detected by experiments. Now, does semirealism allow us to believe in polysemy networks? It is hard to answer the

[17] The original text written by Poincaré is: « Les rapports véritables entre ces objets réels sont la seule réalité que nous puissions atteindre, et la seule condition, c'est qu'il y ait les mêmes rapports entre ces objets qu'entre les mêmes images que nous sommes forcés de mettre à leur place. » (Poincaré 1900: 1169)

question positively, since, as discussed in 6.1, polysemy networks do not even have detection properties.

Let us elucidate the notion of detection as used in modern linguistics. Suppose first that we try to prove the existence of phantoms. As a first step, (8) is confirmed by such observations as (9).

(8) Person A has a representation R of a phantom P.
(9) A is running from (unobservable) P. / A talks to (unobservable) P.

Here, (8) is understood as the cause of (9). In this case, we can say that R in (8) is detected by the observations in (9). Yet, this is not sufficient to believe in P. A's behavior does not provide any evidence that phantoms exist; it just indicates that A has a representation of a phantom P. As a second step, in order to establish (10), it must be shown that the cause of (8) is (11).

(10) P exists.
(11) A perceived P.

We must find a causal link between the perception of a (real) phantom and its representation. Otherwise, A would be blamed for just hallucinating.

Compared with this, the proof of the existence of mental entities such as polysemy networks is much simpler, because the first step is sufficient for the purpose. (12) directly entails (14), without the help of any fact corresponding to (11).

(12) Person A has a representation R of a polysemy network N. (cf. (8))
(13) Person A behaves in a certain manner (on the basis of R). (cf. (9))
(14) N exists. (cf. (10))

As a consequence, if (12) is established, we are allowed to believe in (14). The remaining problem is whether we can establish (12) on the basis of (13). To be sure, card sorting tests as conducted by Moriyama (2015a) may suggest that (12) is true. Yet, crucially, the tests fail to show that R in (12) is part of A's linguistic knowledge, that is, they fail to establish (13). Sorting cards does not usually count as linguistic behavior, because, no matter how differently two people A and B may sort cards, their linguistic behavior can remain the same, as far as the use of the word in question is concerned, as discussed in 6.1 above (Lyons 1977, Sandra and Rice 1995, Langacker 2006, Taylor 2003, 2012). If this argument is on the right track, then we can conclude that there is no causal connection between (12) and (13). This is exactly what is meant when we say that polysemy networks lack detection properties.

6.4 Summary

So far we have shown that polysemy networks succumb to all types of selective skepticism: entity realism, structural realism and semirealism. This strongly suggests that, lacking any causal link to observable linguistic behavior, such networks are not part of the knowledge of language. If so, how can linguists acknowledge the significance of the pursuit of polysemy networks, while defining their goal as

accounting for the faculty of language of the human species? It seems that a drastic change is called for, either in the goal or in the practice of cognitive linguistics.

7. Reconsidering the goal or the practice of cognitive linguistics

7.1 The triadic network of justification

As we have seen in Section 3, it is not philosophers but researchers of a particular science that have the right to define the objective of their discipline. At first sight, this might appear to be at odds with the conclusion of the preceding section, according to which linguists are required to reconsider either the goal or the practice of their discipline. This is particularly the case when we take into account the traditional hierarchical model of rational consensus formation, assumed by logical positivism as well as by philosophers of science inspired by Kuhn (1962).

Level of Disagreement	Level of Resolution
Factual	Methodological
Methodological	Axiological
Axiological	None

Figure 4: The Simple Hierarchical Model of Rational Consensus Formation (Laudan 1984: 27)

On this model, "disagreements about factual matters are to be resolved at the methodological level; methodological disagreements are to be ironed out at the axiological level" (Laudan 1984: 26), and crucially, "[a]xiological disagreements are thought to be either nonexistent (on the grounds that scientists are presumed to share the same goals) or else, should they exist, irresolvable" (ibid.). Yet, the conclusion of the preceding section may urge us, eventually, to question what cognitive linguists consider to be their goal. This may amount to doing the impossible, given that axiological disagreements are immune to any sort of resolution, as illustrated in Figure 4.

There is a means to resolve axiological disagreements, however. Laudan (1984) proposes an alternative to the simple hierarchical model of rational consensus formation: the triadic network of justification, given in Figure 5.

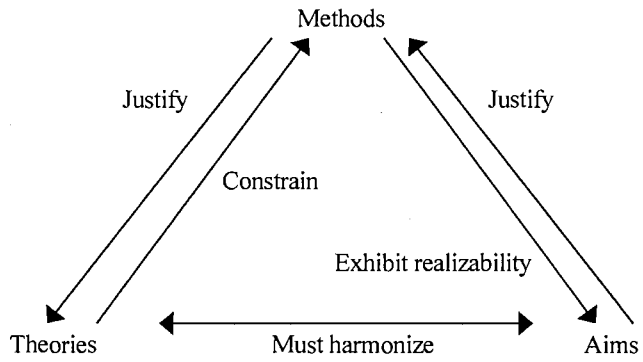

Figure 5: Triadic Network of Justification (Laudan 1984: 63)

On this model, we have mutual adjustments among all three levels, and, specifically, even the aims of science can be modified, as against the simple hierarchical model, since they must harmonize with the theories. The discussion in the preceding section suggests that the aim of cognitive linguistics does not harmonize with the theories advanced in the framework. Cognitive linguists often profess the goal of accounting for the knowledge of language defined as "the (largely tacit) knowledge that makes the use of language possible" (Saito et al. 2015: 176), whereas they are constructing polysemy network models which, as we have seen, seem to have no causal link with our use of language. In this situation, we can rationally recommend linguists to change either their goal or their practice, as Laudan (1984) suggests:

> When we find ourselves in a situation where there is a tension between our explicit aims and those implicit in our actions and judgments, we are naturally under significant pressure to change one or the other, or both. On pain of being charged with inconsistency (not to mention hypocrisy, dishonesty, etc.), the rational person, confronted with a conflict between the goals he professes and the goals that appear to inform his actions, will attempt to bring the two into line with each other.
>
> Precisely the same sort of thing happens in science. Often a scientist will find himself explicitly advocating certain cognitive aims, yet seemingly running counter to those aims in terms of the actual theory choices he makes in his daily scientific work. Still worse, [...] it sometimes happens that the dominant goals or an entire community of scientists, as voiced in the explicit accounts they give of these matters, are divorced to be at odds with the goals that actually seem to inform that community's choices and actions as scientists. Whenever a case can be made that a group of scientists is not practicing what it preaches, there are prima facie grounds for a change of either explicit or implicit values. The change may come, of course, in either area, or in both. One may retain one's professed goals and force them to shape one's practical judgments and actions; or one may adopt a new set of explicit values that accord more nearly with the one's actions and practical judgments. (Laudan 1984: 55)

It must be stressed that this is not an irrational interference in the discipline. At issue here is the fact that what cognitive linguists profess is inconsistent with what they do. The inconstancy is internal to the

discipline, and remains as it is, regardless of the theoretical perspective you may take.

7.2 The definition of the linguistic knowledge extended

In order to shun the problematic situation discussed above, the cognitive linguist must change either the practice or the aim of the discipline. If the linguist chooses to change the practice, his position will be something like that described by Lyons (1977: 552): "Until it has been demonstrated that intuitions of this kind [= intuitions of relatedness of meaning] correlate with empirically decidable differences in the use of words, the linguist might well decide that it is preferable to leave the theoretical status of the distinction between homonymy and polysemy unresolved". Alternatively, the linguist can modify the aim of the discipline. The latter is the option taken by Hasegawa (2015).

Hasegawa (2015) proposes to extend the definition of the knowledge of language so that it may be compatible with the construction of polysemy networks. Drawing on Brugman's (1981) seminal work, she claims that one of the goals of cognitive linguistics is to explicate what it is that makes us feel that the senses of a word are so neatly organized that it is natural for us to talk about polysemy, "the association of two or more related meanings with a single linguistic form" (Taylor 2012: 219). Under this perspective, it is our linguistic knowledge that makes us feel that the senses are associated with a single word (as in polysemy), or that they are associated with different words (as in homonymy). In other words, the distinction between polysemy and homonymy is viewed as being part of the knowledge of language, as against what is generally assumed in the discipline[18].

The problem with this approach is that it seems to be self-destroying in that it entails a radical form of relativism, where there is no clue as to which network model we should consider to best represent the linguistic knowledge in the wide sense of the term as defined by Hasegawa (2015). Consider the two uses of *run* illustrated in (15).

(15) a. Bart ran.
b. Bart ran the meeting.

Are we dealing here with polysemy or homonymy? Larson (2010) tells us that we are dealing with homonymy rather than polysemy:

> Notice that two very different senses of *run* are in play here. [...] So this isn't an example of a single verb with an omissible complement. Rather, it is a case of two different verbs, with different selectional requirements, that happen to sound the same. (Larson 2010: 239)

The judgments of native speakers are less than conclusive, however. Contrary to Larson's (2010), (15) might elicit the intuition that the two uses are so closely related that *run* should be regarded as a polysemous word. Particularly relevant here is the fact that, as Lyons (1977: 552) and Taylor (2012: 230)

[18] As we have seen in 6,1, it is generally assumed that "[w]hether a speaker perceives a word to be polysemous or homonymous probably has no consequences at all for their [sic.] ability to use the word appropriately, in accordance with native speaker norms" Taylor's (2012: 230).

note, the differences in judgment do not correlate with empirically decidable differences in the use of the word in question. According to the wider definition of the knowledge of language proposed by Hasegawa (2015), on the contrary, those who judge *run* to be homonymous have different states of knowledge from those who judge *run* to be polysemous. Consequently, their states of knowledge must be captured by different network models. It does not make sense to ask which model is the 'correct' one, since each model properly describes certain states of linguistic knowledge. The same argument holds for the semantics of all other lexical items. This inevitably leads to a radical form of relativism, where all network models proposed by researchers are to be equally respected, without ever being refuted. This might amount to saying that there is nothing wrong with the fact that, as Sandra and Rice (1995), Langacker (2006), Taylor (2012) and Moriyama (2015a) point out, researchers do not converge, despite their long-term effort, on the exact nature of the network associated with a word. Although Hasegawa (2015) and Nishimura (2015) fully acknowledge that such relativism is not desirable, they still do not give any criterion that allows us to evaluate the network models that have been proposed in the literature; all that they did during the discussion session of the symposium which inspired this paper was just to give examples of 'bad' analyses, without explicating why they thought they were 'bad'[19]. This suggests that the modification of the definition of the knowledge of language as proposed by Hasegawa (2015) has, ironically, consequences that she wants to avoid; if we accept her definition, it turns out that 'anything goes'[20].

7.3 The network model optimized

In order to rescue the theory from the anarchism just discussed, Kuroda (2015) proposes to optimize the network model so that it can be confirmed by psychological experiments[21]. The optimal model defended by Kuroda represents the degrees of abstractness of all related sense pairs, but not the sorts of relations that hold between them, such as metaphor or metonymy. By eliminating the latter information from the model, it is possible, Kuroda claims, to confirm its validity, because (i) subjects can, when asked, tell which of the two senses is more abstract than the other and their judgments indicate a high degree of convergence, (ii) subjects can, when asked, tell the distance between two senses, and their judgment indicate a more or less high degree of convergence, but (iii) subjects have difficulty judging whether a

[19] During the discussion session, Yoshiki Nishimura stressed that, although this is ultimately a matter of preference, 'rational' researchers are capable of telling good analyses from bad ones. This claim only begs the question of what is or should be meant by 'rational'. Do 'rational' researchers consider *run* in (15) to be homonymous or polysemous? And why?

[20] Indeed, this kind of anarchism motivated me to organize the symposium. It should be noticed that Langacker's (1988: 135) remark, cited by Hasegawa (2015), "although the precise configuration of the network is variable and even indeterminate, the need to postulate some type of network is seemingly beyond dispute" does not lend support to Hasegawa's approach. This remark purports to show the superiority of the network model over the criterial attribute model, as suggested by what Langacker says just after the remark: "the meanings of a commonly-used lexical item define a complex category, i.e. one that is not reducible to a single structure (node)" (ibid.). As said in the introduction of this paper, this argument can only be warranted if there are no other options than the two positions discussed by Langacker (1988). This reading of Langacker (1988) might be justified by Langacker's defense of himself published 18 years later: "I plead guilty to promoting a metaphor with the manifest potential to be misleading. But metaphors are unavoidable, and every metaphor is misleading to some extent. Let me say in my defense that in the era when I proposed the network model the crucial issue was not the specific details of complex categories, but rather whether such categories needed to be posited in the first place. Networks centered on prototypes offered an alternative to classical categories defined by criterial attributes." (Langacker 2006: 145)

[21] Though not explicitly, Kuroda (2015) seems to share with Hasegawa (2015) the view that the distinction between polysemy and homonymy is part of the linguistic knowledge.

given sense relation is metaphor or metonymy, and their judgments are not reliable.

We find Kuroda's (2015) view still too realist, even though the optimal model he proposes is supposed to represent less information than the standard model as assumed by Moriyama (2015a). Somewhat dubious is the claim that the fact given in (ii) above substantiates the network model. Kuroda (2015: 2-3) suggests that those who do not accept this claim are probably those who find no value in psychological experiments. This is not necessarily the case, however. Suppose that subjects can measure the distance between two senses, Si and Sj[22]. This does not entail, however, that subjects have a mental representation connecting Si and S2, prior to judging that Si and Sj are related to each other, because they can judge the similarity of Si and Sj without having any representation that links them. As emphasized by Recanati (2004), "*the dimension of similarity is not given, but contextually determined*" (Recanati 2004: 145, emphasis in the original). The similarity between two things can only be judged from a certain perspective, chosen in context (Noya 2011:128). In connection with this, Wittgenstein says: "If something is said to agree or disagree with an idea or thought, we do not *find* it agreeing or disagreeing. What are called agreement and disagreement is something laid down as a rule" (Ambrose, ed.2001: 84, emphasis in the original). It follows that it does not make sense to say, out of context, that Si and Si are (not) similar to each other. To be sure, we can tell, when asked, whether Si is similar to Sj or not. But this is made possible precisely by the fact that we are asked. The experimental task itself creates a perspective from which the similarity is judged. This is why the fact that subjects can judge whether Si and Si are similar or related to each other does not entail that they have networks in the mind/brain, as part of their linguistic knowledge, which relate Si to Sj in a context-independent manner. It can then be concluded that psychological experiments, even though they establish the relatedness of senses, still do not allow us to believe in the network model which represents that relatedness[23].

8. Concluding Remarks

We have shown that, lacking any causal link to observable linguistic behavior, polysemy networks as assumed in cognitive linguistics are not part of the knowledge of language defined as the (largely tacit) knowledge that makes the use of language possible. There seems to be a tension between the aim of cognitive linguistics and the theories advanced in the framework. This allows us to rationally recommend cognitive linguists to change either their goal or their practice, as suggested by Laudan's (1984) triadic network of justification.

Hasegawa (2015) chooses to change the goal by extending the definition of the linguistic knowledge in such a way that it may be compatible with the construction of polysemy networks. The linguistic knowledge now includes the distinction between polysemy and homonymy. This approach is self-destroying, however, in that it entails a radical form of relativism, where all network models proposed by researchers must equally be respected, without ever being refuted. Put simply, 'anything

[22] Although Kuroda (2015: 2) notes that not many linguists accept the claim in (ii), the attitude toward this issue is irrelevant to the discussion that follows. Even those who fully acknowledge the significance of psychological experiments in general and hence accept (ii) can still maintain that accepting (ii) does not entail any commitment to the reality of the network model that (ii) is supposed to substantiate.

[23] The same holds for what Kuroda (2015) characterizes as non-optimal models, such as Moriyama's (2015), which represents not only the relatedness of senses, but also the sorts of the relations holding between senses.

goes' in this approach.

In order to shun the relativism or anarchism, Kuroda (2015) proposes to optimize the network model so that it can be confirmed by psychological experiments. Contrary to his claim, however, psychological experiments do not allow us to believe in the network model, whether it be optimized or not. The commitment to the model requires that the judgment of the similarity between two senses be always based on a representation connecting the two senses. Yet, this requirement is not fulfilled, because, generally speaking, we can judge a similarity even if the similarity itself is not mentally represented prior to the judgment.

If our argument is on the right track, there is no positive evidence for the literal or realist construal of the network model. Cognitive linguists are working on what may turn out not to really exist. As Langacker (2006, 2013) puts it, the network model is no more than a metaphor, to the lure of which we must not succumb.

This conclusion may still not stop researchers from interpreting the model literally or realistically, as dictated by the Planck principle, according to which "a new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die and a new generation grows up that is familiar with it" (Laudan 1984: 18, n. 24). A fundamental question that must now be addressed is, what exactly is the new truth about polysemy?[24] It is obviously not enough just to say that there are no such things as polysemy networks. It is required to explicate what is really involved in the phenomena known as polysemy.

In the preface to the Japanese version of his 1980 book, van Fraassen states that it is not 'scientists *qua* scientists' who are realists or anti-realists; it is rather philosophers, or 'scientists *qua* philosophers', who, asking what science is all about, are committed to realism or empiricism. In this paper, 'a linguist *qua* philosopher' has explored the realism and anti-realism of polysemy. It is now up to 'linguists *qua* scientists' to find and pursue a new truth about polysemy, by answering the question: what makes it possible for us to use alleged polysemous words as we do?[25]

N.B. This work was supported by JSPS KAKENHI Grant Number 25370437.

References

Ambrose, Alice (ed.) (1979) *Wittgenstein's Lectures: Cambridge 1932-1935*, Prometheus Books.

[24] It is in principle possible to claim that truth is a useless notion in science. The most promising position that adheres to the claim is constructive empiricism put forward by van Fraassen (1980): "*Science aims to give us theories which are empirically adequate; and acceptance of a theory involves as belief only that it is empirically adequate.* This is the statement of the anti-realist position I advocate. I shall call it *constructive empiricism.*" (van Fraassen 1980: 12, emphases in the original)

[25] An approach we find promising is Taylor's (2012): "The alternative view presented here is that knowing a word involves knowing the kinds of contexts in which a word can be used. A word provides access, not only to the conceptual domains against which it is understood, but also to the linguistic contexts in which it has been used, as these have been laid down in the speaker's mental corpus." (Taylor 2012: 244) In this approach, no commitment to unobservable entities is required, to the extent that all uses of words are observable. This is in line with constructive empiricism defended by van Fraassen (1980), according to which "*[s]cience aims to give us theories which are empirically adequate; and acceptance of a theory involves as belief only that it is empirically adequate* (van Fraassen 1980: 12, emphasis in the original). And "a theory is empirically adequate exactly if what it says about the observable things and events in this world, is true – exactly if it 'saves the phenomena'"(ibid.).

Brugman, Claudia (1981) *The Story of* Over*: Polysemy, Semantics and the Structure of the Lexicon*, published from New York/London: Garland in 1988.

Cartwright, Nancy (1983) *How the Laws of Physics Lie*, Oxford University Press.

Chakravartty, Anjan (2007) *A Metaphysics for Scientific Realism: knowing the Unobservable*, Cambridge University Press.

Coleman, Linda and Paul Kay (1981) Prototype Semantics: The English Word *Lie*, *Language* 57: 26-44.

Hacking, Ian (1983) *Representing and intervening*, Cambridge University Press.

Hasegawa, Sayaka (2005) Shizenbutsu toshite no tagikouzou?: Tagi no jitsuzairon wo yougo shite miru (Polysemy structure as a natural object?: An attempt to defend the realism of polysemy), paper presented at the symposium "Tagi no gengogaku to tetsugaku (Linguistics and Philosophy of Polysemy)", Waseda University, December 12, 2015 (in Japanese).

Hempel, Carl .G., & Paul Oppenheim (1948) Studies in the Logic of Explanation, *Philosophy of Science* 15: 135-175.

Iseda, Tetsuji (2005) Kagakuteki jitsuzairon wa doko e mukaunoka (Where Will Scientific Realism Go?), *Nagoya Journal of Philosophy* 4: 35-50 (in Japanese).

Karasawa, Kaori (2012) Seikou shita gakumon toshite no shakaishinrigaku (Social Psychology As a Successful Discipline), Kaori Karasawa and Kazuhisa Todayama (eds.) *Kokoro to shakai wo kagaku suru (Scientific Perspectives on the Mind and the Society)*, University of Tokyo Press: 13-40 (in Japanese).

Kuhn, Thomas S. (1962) *The Structure of Scientific Revolutions*, The University of Chicago Press.

Kuroda, Kow (2015) Tagi (sei) nettowaaku bunseki wo jikken kenkyuu to seigou saseru niwa dou shitara yoika (How Can We Make the Polysemy Network Analysis Consistent with Experimental Research?), unpublished manuscript.

Lakoff, George and Claudia Brugman (1986) Argument Forms in Lexical Semantics, *BLS* 12: 442-454.

Langacker, Ronald W. (1988). A Usage-Based Model, In Brygida Rudzka-Ostyn (ed.), *Topics in Cognitive Linguistics*, John Benjamins: 127-161.

Langacker, Ronald W. (2006) On the Continuous Debate about Discreteness, *Cognitive Linguistics* 17: 107-151.

Langacker, Ronald W. (2013) *Essentials of Cognitive Grammar*, Oxford University Press.

Larson, Richard K. (2010) *Grammar as Science*, The MIT Press.

Laudan, Larry (1984) *Science and Values: The Aims of Science and Their Role in Scientific Debate*, University of California Press.

Lyons, John (1977) *Semantics*, Cambridge University Press.

Moriyama, Shin (2015a) Nihongo tagi doushi 'kiru' no imikouzou kenkyuu: Shinri teki shuhou niyori naisei bunseki wo kenshou suru (The Semantic Structure of the Japanese Polysemous Verb 'Kiru': A Psychological Approach beyond the Introspective Method), *Journal of Cognitive Linguistics* 1: 138-155 (in Japanese).

Moriyama, Shin (2015b) Nihongo gakushuu jiten kaihatsu no tame no naisei bunseki no seibi ni kansuru kenkyuu: Doushi 'agaru' wo rei ni (A Study on the Elaboration of Intuition-based Analyses in View of Developing Dictionaries for Learners of Japanese: The Case of the Verb 'Agaru'), paper

presented at the fall meeting 2015 of the Society of Japanese Education, Okinawa International University, October 11, 2015 (in Japanese).

Nishimura, Yoshiki (2015) Tagi no jitsuzairon wa dokomade yougo kanou ka: Ninchi gengogaku no tagi kenkyuu ga susumu beki michi (To What Extent Can We Defend the Realism of Polysemy?: The Right Way for Cognitive Linguistic Research on Polysemy", paper presented at the symposium "Tagi no gengogaku to tetsugaku (Linguistics and Philosophy of Polysemy)",Waseda University, December 12, 2015 (in Japanese).

Noya, Shigeki (2011) *Katarienu mono wo kataru (Speaking the Unspeakable)*, Kodansha (in Japanese).

Psillos, Stathis. (1999) *Scientific Realism: How Science Tracks Truth*, Routledge.

Putnam, Hilary (1975) *Philosophical Papers Vol. 1: Mathematics, Matter and Method*, Cambridge University Press.

Recanati, François (2004) *Literal Meaning*, Cambridge University Press.

Rosch. Eleanor (1973) On the Internal Structure of Perceptual and Semantic Categories, Timothy E. Moore (ed.) *Cognitive Development and the Acquisition of Language*, Academic Press: 111-144.

Saito, Sumio, Yoshihisa Taguchi and Yoshiki Nishimura (eds.) (2015) *Meikai gengogaku jiten (The Sanseido dictionary of linguistics)*, Sanseido (in Japanese).

Salmon, Wesley C. (1984) *Scientific Explanation and the Causal Structure of the World*, Princeton University Press.

Sandra, Dominick and Sally Rice (1995) "Network Analyses of Prepositional Meaning: Mirroring Whose Mind - the Linguist's or the Language User's?", *Cognitive Linguistics* 6: 89-130.

Taylor, John R. (2002) *Cognitive Grammar*, Oxford University Press.

Taylor, John R. (2003) *Linguistic Categorization*, 3rd edition, Oxford University Press.

Taylor, John R. (2012) *The Mental Corpus: How Language is Represented in the Mind*, Oxford University Press.

Todayama, Kazuhisa (2012) Shuudanshin ni keijijougakuteki mondai wa nai, aru no wa houhouron teki mondai dakeda (Collective mind poses no metaphysical problems, it only poses methodological problems), Kaori Karasawa and Kazuhisa Todayama (eds.) *Kokoro to shakai wo kagaku suru (Scientific Perspectives on the Mind and the Society)*, University of Tokyo Press: 117-139 (in Japanese).

Todayama, Kazuhisa (2015) *Kagakuteki jitsuzairon wo yougo suru (In Defense of Scientific Realism)*, Nagoya University Press (in Japanese).

van Fraassen, Bas C. (1980) *The Scientific Image*, Oxford University Press.

Yamasaki, Kaori (2015) Jinkoubutsu toshite no tagikouzou?: Tagi no jitsuzairon wo utagatte miru (Polysemy Structure as an Artifact?: An Attempt to Challenge the Realism of Polysemy), paper presented at the symposium "Tagi no gengogaku to tetsugaku (Linguistics and Philosophy of Polysemy)", Waseda University, December 12, 2015 (in Japanese).

多義の実在論と反実在論

酒井 智宏
t-sakai@waseda.jp

キーワード: 多義性、ネットワークモデル、実在論、反実在論、悲観的帰納法、言語知識

要旨

この論文の目的は、認知言語学において仮定されている多義性ネットワークモデルを字義どおりないし実在論的に解釈することの妥当性を哲学的な観点から検討することである。字義どおりないし実在論的に解釈された多義性ネットワークは、理論的対象に関する (選択的) 懐疑への耐性をもたないため、それが「言語使用を可能にする (大部分暗黙の) 知識」としての言語知識に含まれるという想定には根拠がない。それゆえ、多義性ネットワークの構築という実践は、言語知識の解明という (認知) 言語学の目標とのあいだに齟齬をきたしている。このとき、Laudan (1984)の正当化の三項ネットワークモデルに基づいて、認知言語学の目標と実践の少なくとも一方が修正される必要がある。長谷川 (2015)は、言語知識の定義 (それゆえ認知言語学の目標) を修正し、多義と同音異義の区別に関する知識が、言語行動に影響を与えないにもかかわらず、言語知識に含まれると主張する。しかしながら、このアプローチは、「何でもあり」の極端な相対主義を帰結し、いかなるネットワークモデルをも許容してしまうという点で自己論駁的である。こうしたアナーキズムを回避するため、黒田 (2015)は、心理実験による検証に耐えうる形でネットワークモデルの最適化を行っている。しかし、この最適化にもかかわらず、黒田の想定する形での心理実験は、その結果がいかなるものであれ、ネットワークの実在性を保証しない。この議論が正しければ、多義性ネットワークが実在する (すなわち言語知識の一部をなす) ことを示すいかなる証拠も存在しないことになる。Langacker (2006, 2013)の言うように、ネットワークモデルは意味について語るためのメタファーにすぎないのである。

(さかい・ともひろ　早稲田大学)