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EPISTEMO-SEMANTIC COHERENTISM: AN ATTITUDINAL VIEW OF MEANING BASED ON EPISTEMIC PRAGMATISM

SUMMARY: This article develops a conception of linguistic meaning that treats it as an attitude on the part of language users towards pairs of expressions. As with propositional attitudes, these meaning attitudes are subject to being deliberately altered over time by language users, with the aim of maximizing the efficiency of their language use. Therefore, meaning attitudes can be justified or refuted in practical terms. Our instrumentalist-coherentist approach, which allows for meanings to be advocated for alongside beliefs, provides a viable theory of justification of that kind. This view fits better with the evolutionary nature of linguistic phenomena, and resolves the problem of substitutability in opaque contexts.

KEYWORDS: coherence, justification, meaning, belief, strategic and definitory rules.

1. MEANING OF EXPRESSIONS AND THE ATTITUDINAL VIEW OF MEANING

Theories of knowledge have certainly come a long way since the time when Dewey sought to highlight the ineffective ways in which terms in this field were being used (Dewey & Bentley, 1945, pp. 225–226). From that time on, epistemologists have made progress by interpreting at least some of their preferred basic terms in the light of relations to others that they take to be more closely tied to readily accessible observations. A case in point would be Peirce’s revival of the empiricist interpretation of the term “belief” as disposition to behave

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(Misak, 2014, p. 29). As such, beliefs become testable on the basis of their actual and anticipated practical consequences, so that we can decide whether or not we should believe a proposition to be true in accordance with the pragmatist criterion of truth.

Dewey's three desiderata for firm namings in epistemology (Dewey & Bentley, 1945, p. 226) would therefore seem apt for generalization to cover all fields of philosophical study. Pursuing that thought a little further, we may restate them in the following way:

- a) We should base our terms on publicly accessible and attainable observations.
- b) We should consider the reports based on such observations as being tentative, postulational and hypothetical ones, and weigh the justificatory status of the relevant observations accordingly.
- c) The terminology and the domain of observation should be chosen in a way that promotes further observations and advances.

Let us call these three Deweyan principles, respectively, *accessibility*, *hypotheticality* and *progressivity*. Adopting these as furnishing the main methodological tenets of pragmatism with regard to the philosophical clarification of theoretical terms, I wish to suggest some steps to be taken towards developing a general pragmatist view of meaning.

The first thing we should note in this regard is that Peirce's game-theoretical ideas provide another framework for developing a pragmatist view of meaning. Indeed, as is well known, the idea of extending game-theoretical semantics to natural language has evolved into a lively research program. Lewis (1969) contributed the pioneering work in this field, while more recently, Pietarinen (2014) has presented a development of Peirce's and Hintikka's game-theoretical ideas that elucidates their relevance to meaning in natural languages with reference to Grice's theory of meaning. Pietarinen (2006) gives a detailed presentation of Peirce's pragmatic view of meaning, and an interpretation in the light of both game-theoretical ideas and Hintikka's own conception of logic. In principle, the present view does not stand in opposition to work in that area: rather than being construed as providing an alternative model of the interpretation of strategic meanings to that offered by game-theoretic semantics, it can just be interpreted as providing an additional conceptualization of strategic meanings—one that is in line with the general ideas of Dewey. As I hint in Sections 2 and 4, epistemo-semantic coherentism can be vindicated from a game-theoretical point of view as much as from a modal or probabilistic one, in that the conditions of coherence can be revised accordingly. (This is mainly accomplished by replacing the notion of inductive support with that of the game-theoretical solution.)

Dewey's principles direct us immediately to put aside many widely supported views of meaning, such as those encountered in conceptualist and possible-

worlds-based theoretical approaches, *in so far as* concepts or possible worlds are themselves regarded as amounting to undefined metaphysical entities. For in this context, their terms will not in fact be based on accessible observations. On the other hand, attempts to define the meanings of particular expressions in terms of innocuous entities are most likely to fail, for the reason that these entities have definite characteristics that meanings of expressions cannot have. This is certainly the case for most behaviourist and physicalist explanations. Similar remarks apply, for example, to sets, types or other abstract entities, due to discrepancies between the basic properties and relations of these entities and those of meanings themselves.

Some recent views—most notably those of Horwich (1998; 2005), Grice (1957; 1975; 1978), Searle (1969; 1983) and Brandom (1994)—do not leave the linguistic realm in search of meanings, but rather appeal to regularities of use, linguistic intentions, or pragmatic inferences. These views claim that every particular semantic fact concerning the meaning of a linguistic expression can be derived from some other linguistic fact or facts. As such, they are often criticized for being circular: the objection is that meanings, if held to be explanatorily required at all, are so only because it is thought that they are needed to explain phenomena that themselves involve the use of language, such as our inferences, rather than the other way around. This sort of circularity objection against inferentialism has been raised by several authors (e.g., Fodor & Lepore, 2001). The strongest inferentialist response (Peregrin, 2009, pp. 168–171) seems to be the assertion that content is dependent on normative attitudes, but it is hard to see how normative attitudes could be explained on the basis of inferences without first giving an account of meaning.¹ Insofar as the inferentialist thesis just is the assertion that the meaning of an expression is its inferential role, (where the inferential role of an expression is determined by the inferential rules governing the use of that expression within some inferences), it is hard to see how it could overcome the circularity objection. If, on the other hand, the inferentialist thesis is that the inferential roles of expressions with respect to analytic inferences and meanings of expressions coincide, then it becomes a less interesting thesis—one that merely affirms the extensional equivalence of meaningfulness on the one hand and possession an inferential role on the other, while refraining from giving any account of meaning that could explain *why* inferential roles and meanings of expressions coincide (in the sense of two terms with the same inferential role being synonymous).²

¹ See the work of Sellars (1948; 1953), Grice (1957) and Brandom (1994). See also (Goble, 1967) for a further elaboration of Sellars' view and see e.g., (Macbeth, 2010) for a critical discussion of the views of Sellars and Brandom.

² Szubka also argues for the conclusion that Brandom's view "faces the dilemma of being an unhelpful platitudinous doctrine or theoretically fruitful but implausible conception requiring the reducibility of semantic categories to narrowly conceived pragmatic ones" (2010, p. 173).

Neither of the above remarks should be considered an attempt to furnish an overall argument against the aforementioned foundational theories of meaning. An attempt in that direction would well exceed the scope of the present paper. However, I do view these as providing an adequate motivation for refraining from trying to identify meanings of particular expressions as extralinguistic entities, or derive particular facts about meanings of particular linguistic expressions from facts that are held to be describable without invoking the notion of meaning. Instead, I propose that we consider meanings to be our irreducible collective attitudes directed primarily towards pairs of expressions: more precisely, we should think of a meaning attitude as being directed towards a pair of expressions (considered as a pair of types of physical entity consisting of actual or possible utterances of the types in question) as its object. On this account, our possession of a meaning attitude necessarily involves our entertaining an intention to revise our language so that we use the two expressions interchangeably, and our expectation that our language will function more effectively if we decide to deploy utterances of these two expressions interchangeably. The satisfaction of the latter involves the realization of such an amendment to our language, as well our future observation that our revised language is now functioning properly and would not be functioning so well if we had left it as it was, or developed it in some other way.³

Our meaning attitudes do not directly relate our words to the world: we only require that expressions paired by our meaning attitudes also be co-referential. The direct linking of our language with the world is achieved by means of the existence of expressions that refer directly to things (be they linguistic or non-linguistic), with reference explained in terms of the causal theory of reference. The main function of our meaning attitudes, once justified in combination with our beliefs, is to support analytic inferences within our belief systems. It follows that our proposed conception of meaning is one that aims to furnish an explanation of the semantic processing of the expressions required when making analytic inferences, where such an explanation is accomplished by an appeal to our pragmatically testable collective attitudes.

We normally express our meaning attitudes through collective assertions of the form “ e_1 means e_2 ”, where e_1 and e_2 denote two expressions of our language. These collective meaning assertions should be considered hypotheses constructed mainly on the basis of our projection of a more effective language, rather than logical or metaphysical conclusions pertaining to a prior delimited set of facts (including facts about our prior usage of the relevant terms, such as previous inferences that are in some sense valid).

Since it explicates meaning assertions as hypotheses, the present attitudinal view of meaning requires that the semantic endeavour should be carried out

³ I have adopted this characterization of meaning attitudes from the general explanation of individual propositional attitudes developed by Vanderveken in several of the latter’s writings (see, for example, Vanderveken, 2011, sect. 1).

largely within the context of the justification, rather than the discovery or explanation, of meanings. Firstly, a meaning attitude of a linguistic community should be such that either it has already been expressed by being collectively asserted, or the linguistic community is ready to accept this meaning assertion in the light of an inquiry, say, in response to a learner of the language who is competent enough to ask what some expression *e* of the language means. (Nevertheless, on the present view, the answer will be interpreted not as giving the meaning of *e*, but rather as expressing an attitude towards two expressions, namely *e*, and another expression, *e'*). Therefore, from the perspective of the present position regarding meanings, given a reasonably rich language, we need not bother about *how* to deal with questions concerning the meanings of expressions.

Secondly, the question “What are meanings?” should also not raise difficulties: if one has an understanding of propositional attitudes, such as beliefs, then a grasp of meanings should not be far away, insofar as meanings are attitudes towards pairs of expressions. Thus, the justification of meanings, rather than their discovery or explanation, becomes the central question to be addressed when seeking to explore theories of meaning of the sort under consideration here. This runs parallel with what has been observed in the field of epistemology, where neither the discovery of one’s actual set of beliefs, nor the explanatory question “what are beliefs?”, seem as central as issues pertaining to the formation, justification and revision of beliefs. My aim, then, is to defend the position that holds that, through utilizing the close interaction of our meanings and beliefs, it is possible to develop a viable theory of the justification of meanings as a more or less straightforward extension of the idea of epistemic coherentism.

Sellars’ and Brandom’s inferentialist views of meaning are also sometimes characterized as coherentist. Recall that according to their inferentialist stance, the meaning of a linguistic expression just is its inferential role. (They mainly differ on which set of inferences should be considered.) The inferential coherence of our beliefs is held to be a basic virtue of belief systems, as given an inferentially coherent belief system, it becomes possible to identify meaning as inferential role in that system. Yet this being the case, continuity with epistemic coherentism breaks down. The reason is that epistemic coherentism does not primarily aim at identifying what an agent’s beliefs are, or defining the notion of belief; rather it is a methodological program aimed at identifying which belief systems should be ranked more favourably than others.

Before pursuing the task of further elaborating the position outlined above, it is worth noting that meanings as attitudes towards pairs of linguistic expressions may be viewed as providing an adequate basis for a philosophical theory, inasmuch as it permits us to formulate both major philosophical problems about meaning, and our solutions to these, within the framework of the proposed view. Among these problems, the following two are especially important, as meanings are thought to play an indispensable role in addressing them: firstly, reference

fixing for the terms we use, and secondly, making explanatory sense of the existence of informative identity statements.

As regards the former, we may note that it is by no means universally accepted that the meaning of an expression considered as an entity can help us explain how we could fix the reference of that expression. On the contrary, there is actually a strong element of doubt as to whether meanings could ever do that. Moreover, in the context of some version of the Kripkean causal theory of reference, our terms can refer without the mediation of meanings. Assuming such a theory, co-referentiality of terms will function as a precondition for our meaning attitude: for any two supposedly referential terms e_1 and e_2 , one cannot rationally assert that e_1 means e_2 without also believing that e_1 and e_2 are co-referential.

The attitudinal view of meanings also helps us to deal with the problem of non-trivially true identity statements: it suffices to say that for a true identity statement of the form " e_1 is e_2 " to be non-trivial, it is necessary and sufficient that the corresponding meaning assertion " e_1 means e_2 " be false when judged on the present account of meaning. The falsity of " e_1 means e_2 " should result from one of the following two possibilities: either the hypothetical synonymy of e_1 and e_2 has been considered and refuted, or it has not yet been considered. In either of these cases, we can understand the identity statement " e_1 is e_2 " formed by the co-referential terms " e_1 " and " e_2 ", and recognize it as true, only by appeal to referential relations. In fact, our recognition of the truth of the statement " e_1 is e_2 " is a necessary precondition for accepting assertions of the form " e_1 means e_2 ". We can thus explain non-trivially true identity statements without needing to posit meanings as transcendent truthmakers (or falsitymakers) for them and their like, and also without recourse to any viciously circular reasoning.

Besides playing a role in possible solutions to the above two classical problems, another indispensable function of meaning assertions will be particularly important in terms of directing us towards the pursuit of an attitudinal view of meaning: namely, that of allowing us to make some argument schemes that are intuitively valid analytically so. Let e_1 and e_2 be two expressions in our language, and now consider the following two arguments:

- (1a) e_1 has the same meaning as e_2 .
- (1b) a knows (or believes) that ... e_1 ...
- (1c) Therefore, a knows (or believes) that ... e_2 ...
- (2a) e_1 has the same meaning as e_2 .
- (2b) a acts on the hypothesis that ... e_1 ...
- (2c) Therefore, a acts on the hypothesis that ... e_2 ...

where ... e_1 ... and ... e_2 ... are declarative sentences in our language, such that the second sentence is obtained from the first by replacing one or more occurrences of e_1 by e_2 .

Neither (1c) nor (2c) follows necessarily from the given premises, as it is possible that a does not bear the appropriate sort of cognitive relation to the meanings of e_1 and e_2 . On the other hand, consider the following two arguments:

- (3a) a means e_2 by e_1 .
- (3b) a knows (or believes) that ... e_1 ...
- (3c) Therefore, a knows (or believes) that ... e_2 ...
- (4a) a means e_2 by e_1 .
- (4b) a acts on the hypothesis that ... e_1 ...
- (4c) Therefore, a acts on the hypothesis that ... e_2 ...

Both consequences—i.e. (3c) and (4c)—now follow necessarily from their premises. Once we are able to interpret the premise “ a means e_2 by e_1 ” as ascribing to a an appropriate attitude towards the expressions e_1 and e_2 , the information given in the premises allows us to leave out the possibility that would invalidate (1) and (2).

Neither the idea of doing away with meanings as entities, nor the idea of focusing upon synonymy as the central notion of the theory of meaning, is new (see Quine, 1951, pp. 22–23). Having said that, Quine argued strongly against the view that synonymy can be explained in terms of interchangeability *salva veritate*, for the reason that the latter requires analyticity. Nevertheless, the present view, while making synonymies the basis for a theory of meaning, escapes Quine’s criticism. It seems that his criticism counts powerfully against views that focus on exact synonymies while also seeking to establish the interchangeability *salva veritate* of terms by deriving this from their extensional agreement. On the other hand, synonymies are now to be regarded not as necessary conclusions solely to be derived from the extensional agreement or prior usage of terms, but rather as hypotheses entertained on the basis of both prior facts about the relevant terms and the anticipation of success. Therefore, hypothesizing synonymies cannot be considered a free-floating language game. This approach to meaning can be properly characterized as pragmatist, insofar as it satisfies the three Deweyan desiderata—namely accessibility, hypotheticality and progressivity—that, as we saw earlier, together count as a clear expression of the principal methodological tenets of pragmatism. As a result of its compliance with the progressivity principle, the present view prompts us to conceive of the phenomenon of semantic change as a philosophical problem, and to regard theorizing the guiding principles for constructing better webs of meaning for our languages as the main challenge facing a philosophical approach to semantics.

2. A THEORY OF MEANING AS A THEORY OF JUSTIFICATION

Once we have discovered that our planet is the third one from the sun, we may consider pairing the expressions “Earth” and “the third planet from the sun” as synonymous. Our decision should be based on a comparison of the anticipated consequences of our current alternatives. It is important to take into account the fact that we need not synonymize every expression of our language with some other expression. Indeed, many expressions can function without entering into synonymy relations with others. Many, including those that we understand through paradigmatic examples or partial explanations, belong to this category. The possibility of leaving some particular putative case or other of synonymy undecided matters, because any meaning attitude will bring with it a requirement of interchangeability for the relevant paired expressions in almost all contexts. Once we let the expressions “Earth” and “the third planet from the sun” be synonymous, we are obliged to extend our present set of beliefs with the addition of many others that will be obtained from our current beliefs just by exchanging “Earth” for “the third planet from the sun” and vice versa.

The Archimedean point from which one should proceed when seeking to develop further the attitudinal approach to meaning is this: that we regard a natural language as a critical tool useful for a wider network of activities, and treat meaning choices as improvements to the language in question. From this point of view, constructing, using and revising a natural language are goal-directed activities, so that Hintikka’s distinction between definitory and strategic rules (see Hintikka, 1989, §3) will apply. The following passage from Hintikka and Sandu presents this distinction thus:

In practically all such activities a distinction can be made between two different kinds of rules. This distinction is especially clear in the case of games of strategy [...]. In them, we can distinguish the definitory rules which specify what may happen in the game from the strategic rules which tell how to play the game better or worse. For instance, the definitory rules of chess determine what moves are possible, what counts as checking and checkmating, etc., whereas following the strategic rules of chess is what makes a player better or worse. Strategic rules are not merely heuristic. They can in principle be as precise as the definitory rules, even though they are quite often so complicated as to be impossible to formulate explicitly. (2007, p. 20)

An example given by Hintikka offers further guidance when it comes to correctly evaluating the status of our meaning rules. As Hintikka and Sandu (2007, p. 20) note, in logic, inference rules should be counted as definitory rules: their function is to allow us to derive propositions without committing any fallacy. In a goal-directed activity, not all legal rules (i.e., those in compliance with the definitory rules) are effective with regard to moving us forward to reach the desired goal(s). Strategic rules then determine which legal moves are the right ones, and mastering these makes one a better player. Those possessing even just

a brief acquaintance with logic will know that starting with some arbitrarily chosen premises and applying inference rules in an arbitrary manner is not usually sufficient to derive a desired proposition, even if one applies the inference rules correctly. One should also master the strategic rules, which tell you which assumptions and inference rules to choose and in which order the inference rules should be applied.

If we consider natural language in the light of the above distinction, we can see that a general rule of substitution is an example of a definitory rule, as it is merely permissive: it lets us obtain new expressions from those previously given (on condition that we make no category mistakes). For example, from the proposition

(5) A square has four sides,

we may, by means of a substitution for the subject term, obtain the sentence

(6) A triangle has four sides,

and by means of a substitution for the predicate term we may produce the sentence

(7) A square has three sides.

Thus, restricted to declarative sentences and considered as an inference rule, substitution is not a sound rule: it does *not* guarantee that once we have accepted the original proposition, we shall obtain an acceptable proposition after performing a substitution. One may wonder why we have rules of this generality. In our example, one of the reasons is that such rules let us form as many expressions as we can from a single instance, and that ability is important for resource-bounded beings who are in need of languages of sufficient complexity, and who are expected to learn them. Moreover, we have a need to utter not just declarative sentences that we are ready to accept, but also those we are not prepared to accept.

What we have witnessed, then, is an example of a definitory rule for natural language: that of unrestricted substitution. Since the use of a language is a goal-directed activity, there should also be strategic rules telling us how to use our language effectively (relative to our goals). It should be easy to see that in the sense ascribed to them here, meaning rules are strategic rules: whilst unrestricted substitution allows us to construct as many expressions as possible from a given expression, meaning rules direct us to perform substitution in ways that are such that our language will better serve our goals. Considering the examples given above, while our general rules of substitution permit us to obtain both (6) and (7) from (5), both moves are bad from the perspective of our goal of arriving at knowledge—or, at least, that of extending our explicit true beliefs. On the other

hand, a rule which, for example, tells us to substitute “regular quadrilateral” for “square” compels us to make a good move in almost all cases.

Clearly one may, for instance, believe that “A square has four sides” without believing that “A regular quadrilateral has four sides”, or vice versa. There could be someone, say *s*, such that for them the truth values of (8) and (9) below would differ:

(8) *s* believes that a square has four sides.

(9) *s* believes that a regular quadrilateral has four sides.

Moreover, even if an expression other than “regular quadrilateral” were to be chosen, we would still be faced with a similar conclusion. Therefore, it seems that one may generalize from this particular case and say that no strategic rule is good enough to be a sound rule. Even so, failure of substitutivity in intensional contexts does not raise a problem for the present view, as what we should really be seeking are those pairs for which substitution succeeds in as many contexts as possible. The point is that in that case we would be introducing a good strategic rule. In fact, it is part of our solution to decide whether we will consider such inferences as that of (9) from (8) as good: if we have developed a shared meaning-attitude towards the pair of expressions “regular quadrilateral” and “square”, this need not mean that everyone has in fact mastered a rule to the effect that these terms should be used interchangeably. Rather, it means that if a competent user of our language, say, believes that a square has four sides, then he or she also should believe that a regular quadrilateral has four sides. On this basis, one is entitled, as a piece of practical reasoning, to infer (9) from (8), as in this case *s* would be viewed as following a strategic rule even though the possibility exists that he or she actually was not. One may fail while acting on the basis of having argued from (8) to (9), but it is a fact that in many strategic games, following a strategic rule does not and need not guarantee a win at the end of *every* actual playing of the game. (Beginner’s luck seems to illustrate this point well.)

Since meaning rules are strategic rules within a goal-directed activity, they are supposed to facilitate the achievement of our desired goals in those of our activities that essentially require the use of language, and it is in this sense that they require justification: whether our meaning rules significantly contribute to the accomplishment of our goals should be the ultimate basis for their assessment. This also holds for our choice of theoretical constraints in the form of higher-order rules such as compositionality or contextuality. Such principles should only be adopted if we can be sure that following them while introducing lower-order rules will generally produce a better functioning language than the one already to hand.

Furthermore, as a result of construing meaning rules as strategic rather than definitory, the present view has a better chance than its competitors of staving off the criticisms directed against rule-based accounts of meaning. (These criticisms are especially forceful where use-based theories of meaning are concerned; see,

e.g., Gluer & Pagin, 1998.) Definitory rules are those required to make an activity—whether it be goal-directed or not—possible. Thus, if meaning rules were definitory, this would mean that they are required just to make use of the language possible, and it is easy to see that an understanding of rules of meaning in such terms leads quickly to a circularity. On the other hand, according to the present view, meaning rules are required neither to construct a language, nor to use it. Once we separate our theory of meaning from our theory of reference (Quine, 1951, pp. 22–23), it becomes possible that the role of meaning will be regulative rather than constitutive.

3. FROM EPISTEMIC TO EPISTEMO-SEMANTIC COHERENTISM

So far I have been arguing for the view that meanings should be construed as attitudes towards pairs of linguistic expressions, adopted by us on the basis of an anticipation of a better language, and that, as such, they should be considered amenable to justificatory evaluation. What remains is to elucidate the nature of the justification required for adopting particular choices of meaning attitude. In this section, after observing that a distinction that runs parallel to the foundationalism-coherentism distinction in epistemology is applicable to the justification of meaning attitudes, I will argue for the claim that a coherentist approach fits well with the present conception of meanings. Subsequently, I shall briefly outline how such an approach could be developed as an extension of epistemic coherentism.

As is well known, the two major approaches to epistemic justification—namely, epistemic foundationalism and epistemic coherentism—arise as alternative solutions to the regress problem: if every belief requires justification and a belief can be justified only by inferring it from some previously justified beliefs, then we should face the threat of infinite regress or circularity. As a rescue strategy, foundationalist theories of epistemic justification have had recourse to foundational or basic beliefs. These supposedly foundational beliefs are not in need of inferential justification, yet they can serve as premises in an attempt to justify a non-foundational belief. Epistemic foundationalism is subject to several strong criticisms, due to problems relating to the possibility of non-inferential justification for the foundational beliefs themselves, as well as the putative utility of such beliefs when it comes to imparting justification to others. Claiming that the foundational beliefs can be justified by an appeal to sensory experience, the foundationalist should be ready to engage head-on with the following Sellarsian dilemma: if our experiential states are non-doxastic, they themselves cannot justify any belief, while on the other hand, if they are belief-like and so are able to support other beliefs, they themselves require further justification. Either way, we fail to stop the justificatory regress (see BonJour, 1985, §6.2).

For many contemporary epistemologists who have found epistemic foundationalism to be untenable, epistemic coherentism offers a viable solution to the regress problem. The essence of the epistemic coherentist strategy is to bring into

play conditions applicable to systems of belief, so that a belief is justified insofar as that belief is internal to a belief system that satisfies these conditions. For the purpose of presenting the idea of epistemo-semantic coherentism, I will be content with the following most common list of epistemic coherence conditions:

- a) The set of beliefs should be logically consistent.
- b) The set of beliefs should have sufficient explanatory power.
- c) There should be mutual inductive support among beliefs that are members of the set of beliefs.

Given that the coherence conditions are usually defined in terms of the internal properties of belief systems, coherentism is generally criticized for allowing the formation of belief systems in a void. Moreover, since it is most likely that we can form multiple coherent belief systems, there is a problem of criteria: how are we to choose among coherent systems without falling into some form of foundationalism? Alternative coherent systems of beliefs could even be jointly inconsistent. In other words, even if none of these alternative systems by itself implies a contradiction, they may jointly do so. Since no contradiction can be reasonably held, it is claimed that at least one of these allegedly coherent systems cannot be a faithful representation of reality. These arguments against epistemic coherentism owe their persuasiveness to the thought that it makes sense to posit a reality and truth that transcend human inquiry. Accordingly, the problems that these arguments are meant to imply are dissolved once we follow the Peircean strategy of redefining the relevant notions on the basis of intersubjectivity.

It is illuminating to consider an analogous problem of definitional regress: if giving an explicit definition of an expression by means of other (previously defined) expressions is the only way to determine the meaning of that expression in a satisfactory manner, then either an infinite regress or a circularity would be a threat once more. The oldest tradition, which clearly resembles the foundationalist solution for the epistemic regress, suggests that to solve the definitional regress we should accept some terms as semantically basic (or primitive).

To the extent that they make room for a realm of mind-independent entities in their metaphysics, most, if not all, foundationalist views of meaning typically accept some semantically basic terms on the basis of non-linguistic distinctions, given their conviction that the meanings of these expressions capture more basic ingredients of the mind or mind-independent reality itself. The traditional foundationalist strategy—represented, for example, by Aristotle—is to posit basic terms which can be given non-stipulative definitions that will be graspable without recourse to any further practices of explication (see Charles, 2000, sect. 10.6). In Aristotelian metaphysics, these basic terms correspond to basic entities with no proper parts, so they should only receive the simplest possible sort of definition (see Modrak, 2001, chap. 5). Locke's conceptualism echoes that view within epistemology, the main feature of the position (and those descended from it)

being that they base semantic distinctions on a distinction between simple and complex ideas. Russell's distinction between knowledge by acquaintance and knowledge by description provides another basis for distinguishing some expressions as basic. In each case, the resulting view would be vulnerable to criticisms similar to those directed against epistemic foundationalism.

There seems to be no explicitly foundationalist general theory of meaning that does not explain semantic basicness on the basis of a non-linguistic distinction. The most plausible explanation for this fact is that the views that seek to explain meanings of expressions on the basis of linguistic concepts are typically holistic ones. However, I wish to discuss a view of meaning—widely discussed in the philosophy of mathematics and the general philosophy of science—that represents a *prima facie* possible alternative foundationalist position where general theories of linguistic meaning are concerned. This more recent foundationalist view is based on the idea of definability by means of axioms.⁴ Apparently, this view has the advantage that it does not depend on extralinguistic distinctions, while claiming that some terms are semantically basic. Consider, for example, the notions of point, line and plane in geometry. It is said that the role of axioms of a system of geometry is to determine the basic properties of these notions and thereby limit what propositions can be derived within the system (see Kline, 1980, p. 191). Generalizing from this idea, it is sometimes claimed that the axioms taken as a whole determine the meaning of basic terms by providing implicit definitions for them. Other notions can then be defined explicitly in terms of these notions. This option fails, however, as a result of Beth's theorem, which asserts the explicit definability of a predicate F relative to a theory T whenever F is said to be implicitly defined relative to T . (Beth presented this result in [1953]; see also the work of van Fraassen [2011] for further discussion.) Therefore, the implicit definability view is actually just a roundabout route to a foundationalist position.

Given that semantic foundationalism (in the above sense) is vulnerable to criticisms that are similar to those directed against epistemic foundationalism, and given that meanings can be considered genuine attitudes along with beliefs, I suggest that we consider developing a coherentist approach to the justification of meanings as a way to solve the problem of semantic regress. Applying the idea of epistemic coherentism to meaning attitudes, all of them are treated as equal members of the system, and only entire systems of meanings count as bearers of justification. Justification of a meaning attitude towards a pair of expressions is then only possible through a justification of the whole system of beliefs and meanings, including that meaning attitude itself. As in the case of

⁴ As a result of the importance given to this idea in the writings of both Russell and Hilbert, this view is widely held in the philosophy of mathematics and logic. Quine attributes it to Gergonne, and notes that "it was still vigorous thirty years ago" (Quine, 1964, p. 71). See the work of Horwich (1997, p. 423) for an exposition and discussion of "the strategy of implicit definition".

epistemic coherentism, this holistic conception of the justification of meanings does not allow the definitional regress to get off the ground.

Accepting the idea that both beliefs and meanings are attitudes (the former towards propositions, the latter towards pairs of expressions), we may express beliefs and meanings with structurally similar statements. This fact allows us to present epistemo-semantic coherentism as a more or less straightforward extension of epistemic coherentism. For the sake of brevity, I shall make use of some formalism here. Instead of quoting expressions to form their names, I shall use for this purpose the schematic letters e , e' and e'' . For any group G and for any member a in G , let B_{Gp} and B_{ap} , respectively, symbolize the propositions “ G believes that p ” and “ a believes that p ”. The set of propositions $B^G = \{p: B_{Gp}\}$ will be called the belief-set—or, for short, the B -set—of G . For the sake of presenting the basic idea, I shall content myself with Quinton’s summative account of group knowledge (see Quinton, 1975), so that B_{Gp} if and only if B_{ap} for all or most of the agents in G . For applications of the theory to various philosophical problems, one may, of course, work with more sophisticated notions of group belief. As a minimal rationality condition on belief, it should be assumed that belief sets contain basic tautologies, and that they are closed under some basic logical inference rules. This assumption can be justified by means of the second coherence condition: indeed, it is impossible for a set of beliefs to have sufficient explanatory power unless it incorporates a significant part of logical reasoning.

As a step in the direction of a formulation of epistemo-semantic coherentism, we may first extend our formalism so as to cover meanings in addition to beliefs. Let G be a group of users of a language (considered as a single entity) that, in addition to forming beliefs about propositions, can develop shared meaning attitudes towards pairs of expressions of their language. Let $\mu_G(e, e')$ denote the assertion that G means e' by e , where e and e' are *names* of two expressions of the language. Therefore, the set of pairs

$$M^G = \{(e, e'): \mu_G(e, e')\}$$

will be a binary relation on the set of expressions of the language. We shall call it the meaning set—or, for short, the M -set—of G .

Combining the belief-set and the meaning-set of a group, we obtain the belief-and-meaning set, or BM -set, of group G as the set $S^G = B^G \cup M^G$. We would obviously want our BM -set to be a harmonious whole:

Definition 1. We shall say that an expression is *substitutable* in a proposition p if it occurs as a stand-alone expression in p (i.e. it does not occur as a part of an idiomatic expression, a quotation, or a composite technical term) and it is only used (not mentioned) in p , except possibly in meaning-contexts such as the sentence “ e means e' ”. We shall say that a BM -set S^G is *substitution-consistent* if, for every proposition p and every substitutable expression e in p ,

$$\mu_G(e, e') \rightarrow (B_G p(e) \leftrightarrow B_G p(e')), \quad (3.1)$$

or, equivalently,

$$(e, e') \in M^G \rightarrow (p(e) \in B^G \leftrightarrow p(e') \in B^G). \quad (3.2)$$

Therefore, substitutional consistency amounts to a closure condition on the belief set B^G : to be substitution-consistent, B^G should include every substitution instance $p(e')$ for every proposition $p(e) \in B^G$ for all or most $a \in G$, given that G means e' by e .

The notion of coherence can now be extended to cover meaning, by means of the following auxiliary notion of substitutional consistency:

Definition 2. A system $S^G = B^G \cup M^G$ of beliefs and meanings of a group will be coherent if

- a) B^G is epistemically coherent and
- b) S^G is substitution-consistent with respect to M^G .

Finally, I suggest the following as a minimal definition of the coherentist justification of meaning:

Definition 3. A group G will be justified in meaning e' by e if and only if $S^G = B^G \cup M^G$ (where $(e, e') \in M^G$) is a coherent *BM*-set.

The notions above constitute the basic view that can be called *epistemo-semantic coherentism*. We may strengthen this basic view by adopting additional conditions on belief, meaning, and relations between belief and meaning. Developing the position in the direction of the first possibility is something that will concern the field of epistemic logic. To give an idea of what it would mean to pursue the second direction, let us consider how one might find support for the intuition that meaning relations should be equivalence relations: that is, for every group G , the relation μ_G that represents the totality of their meaning attitudes should satisfy

- a) For every expression e , $\mu_G(e, e)$ (Reflexivity)
- b) If $\mu_G(e, e')$, then $\mu_G(e', e)$ (Symmetry)
- c) If $\mu_G(e, e')$ and $\mu_G(e', e'')$, then $\mu_G(e, e'')$ (Transitivity)

One may argue in favour of any of these conditions by showing that if we revise a system in accordance with that condition, then the resulting system is at least as coherent as the initial one. Thus, let $S^G = B^G \cup M^G$ be a coherent system.

This means that it is substitution-consistent, and B^G is epistemically coherent to a significant degree. To make the meaning relation reflexive, we let the new meaning relation be the set $M^G \cup \{(e, e)\}$. Since the addition of a pair (e, e) to M^G —even if it is not already in it—does not result in the addition of a new substitution instance for a group belief, the new system is also substitution consistent. Thus, adding reflexivity leaves B^G and the degree of epistemic coherence of the system as before. It follows that the resulting *BM*-system possesses the same degree of coherence.

Now let $S^G = B^G \cup M^G$ be a coherent system, and let $\mu_G(e, e')$. If e is substitutable in $p(e)$, so is e' in $p(e')$. Moreover, given our definition of substitution-consistency, the assumption that $\mu_G(e, e')$ does not bring into play any new group belief. It follows that symmetry of meaning is an acceptable property. Acceptability of transitivity as a property for meaning relations can also be easily established. (Note that the summative account of group knowledge requires that the union of two insignificant groups of sceptics still be insignificant with respect to the beliefs of the group.)

I conclude this section with a remark on compositionality. Though I doubt whether meanings for natural language allow for any straightforward form of compositionality, it seems that a version of the compositionality principle can be consistently incorporated into our belief and meaning systems. In this case, it would read as follows: let S be a sentence with an immediately substitutable constituent c ; then, if $\mu_G(c, c')$, then $\mu_G(S, S(c'/c))$ (where $S(c'/c)$ denotes the sentence which obtains by replacing one or more occurrences of c by an occurrence of c').

4. STRATEGIC MEANING REVISION

A natural language is basically a tool used by a group living in a dynamic environment. Therefore, every language needs revising at some points, in accordance with changes in that environment. Indeed, this is what we may actually observe: we add new expressions to the language, or some expressions eventually become obsolete, or we decide to give a new sense to an expression already in use with some other sense(s). In historical linguistics, these and similar phenomena are usually studied under the mantle of investigations into semantic change. In this section, I shall be considering semantic change from the coherentist point of view. In particular, I hope to demonstrate that:

- a) Though semantic change is usually *stated* in terms of the meanings of linguistic expressions, the phenomena associated with semantic change can easily be reformulated and, more importantly, *explained* in terms of change in our meaning attitudes.
- b) Reformulated in these terms, semantic change can be plausibly explained as a *purposive* process that results from the strategic cooperation of lan-

guage users aiming at maximizing the efficiency of their language through making better meaning choices. This should be the main difficulty both for transcendent views of meaning that work with unchanging entities, as well as views that work with innocuous entities, insofar as these entities change in ways that are incompatible with the phenomena associated with semantic change.

- c) Owing to the fact that coherence allows of degrees, the coherentist view of meaning is able to explain why semantic change is and should be *continuous*; or, in other words, why meanings in natural language are and should be continuously changing.

Semantic change comes in many types, and there are varieties even within a single type. Below, I give some widely known examples of semantic change that, I believe, are sufficient to capture the general idea.

- a) *Metonymy* is the addition of a new sense to an expression in such a way that though this new sense was originally not present, it is closely associated with the original meaning of that expression. This is obviously the case when, for example, “pen” is used in the sense of “writing”, and “the sword” is used in the sense of “brute force”, in the sentence “The pen is mightier than the sword”.
- b) *Widening* is defined as the process of extending the applicability of an existing expression: e.g., by extending its denotation or broadening its use to new contexts. For example, while “dog” originally meant a specific breed of dog, it later came to mean all breeds.
- c) *Narrowing* is the opposite of widening. It happens either by restricting the denotation of a word to a part of its original denotation, or by restricting it to more specific contexts. For example, while “wife” originally meant “woman”, “female”, or “lady”, its sense has been narrowed to “female spouse”.

We can see that types of semantic change can be explicated as changes in respect of meaning attitudes:

- a) Allowing a new expression to be linked with some expression e by extending the means relation: that is, we add the pair (e, e') and adopt a new attitude, which is that by saying e we mean e' . This will count as an appropriate action insofar as the expression e retains its previous senses.
- b) Forgetting an existing expression linked with some expression e and thus restricting the means relation: that is, we erase the pair (e, e') and relinquish our attitude that by saying e we mean e' . We take this action if we are reluctant to retain the existing usage.

- c) A combination of the above: forgetting an existing means attitude and adopting a new one in its place. This represents a change of our meaning attitude from “by saying *e* we mean *e*’” to “by saying *e* we mean *e*’”.

Which action we should take depends on whether we want to keep on with the existing meanings or not. If the original relation is retained after the semantic change, the result will be what is known as polysemy.

After this brief explanation of the phenomena associated with semantic change within the attitudinal framework, I now wish to return to the second of the three statements put forward at the beginning of this section, where I claimed that semantic change can be plausibly explained as a *purposive* process that results from the strategic cooperation of language users who aim at maximizing the effectiveness of their language through making better meaning choices. I believe that this claim can be demonstrated within the present attitudinal-coherentist framework. The point is that if we should adopt a meaning attitude, it should be coherent with the rest of our beliefs and meanings. Moreover, the coherence conditions are defined in such a way that, as the degree of coherence of our system of beliefs and meanings increases, our language develops into a better instrument. Thus, though we may choose our *new* namings freely, we should be cooperating continuously in a way that will facilitate a positive evolutionary selection among meaning attitudes, where only the better ones survive. I now would like to consider two worries that can be raised in connection with this positive evolutionary stance towards semantic change, as discussing these will, I believe, lend more substance to the above outline of the notion of semantic change.

Firstly, one may question how it could be that such an extensive phenomenon as semantic change can be characterized in general terms as evolving in a positive sense. For there seem to be cases where it appears that we adopt a meaning choice that does not imply any increase in the effectiveness of our language. Establishing a slang term in order to discriminate against some group of people within the population seems to be an obvious case in point.⁵ To deal with this problem, we must reflect on what it means to add a new word to our language. First of all, it does not by itself imply an immediate revision in respect of our meaning attitudes. Any claim to the contrary would most likely result from a confusion between naming and meaning. Quine alerted us to the fact that confusing naming with meaning may mislead one into hypothesizing that for a singular term to have the meaning it has, the object that is supposed to be named by it must exist (1948, pp. 28–29). At the same time, though, confusing naming with meaning may also mislead one in the other direction. This happens when one thinks that an expression *must* have a meaning if it is to successfully name some

⁵ I am grateful to an anonymous referee of this journal for bringing this worry to my attention.

object. Here, the point is that we may enlarge our vocabulary without at the same time adopting additional meaning-attitudes in the sense of pairing new expressions with some that already belong to our previous vocabulary. Introducing a new word just to refer to an object will be less significant in comparison to adopting a meaning attitude for that word, and in the latter case it is considerably harder to anticipate how our language will work as a whole. In the case of introducing a new word by means of a conventional definition, however, both the reference(s) (extension) and the meaning (intension) of that word are established at once. When the word “circle” is introduced into the language by saying that “a circle” is/means “a set of all points in a plane with the same distance from a given point”, its extension is fixed as the set of all sets of points satisfying this condition, and we declare that by saying “circle” we mean “a set of all points in a plane with the same distance from a given point”. The case where a new word is established as the name of an entity is different, and if we are to respect the difference between naming and meaning, we should accept that when we make up an expression in order to label an entity, we do not automatically create a word endowed with a meaning. To see what happens in these cases, imagine that a group g_1 of scientists make up an expression e_1 to denote another group g , such that g is discriminated against by yet another group g_2 that introduces a word e_2 to refer to g . It is by way of the usage of e_1 within the context of the scientific enterprise of members of g_1 that e_1 becomes a technical term, and by way of the usage of e_2 within the context of the colloquial discourse of members of g_2 that e_2 attains the status of a slang term. (The possibility that these groups and their discourses may overlap does not seem to affect the cogency of the present argument.) Given that there are a significant number of people belonging to g_1 or g_2 , we cannot accept it as a fact that $\mu_G(e_1, e_2)$ where G denotes our community itself (which is a larger group $G \supseteq g_1 \cup g_2$), as neither $\mu_{g_1}(e_1, e_2)$ nor $\mu_{g_2}(e_1, e_2)$ obtains. This shows that meaning involves more than naming: in order that a new meaning attitude can be established for two expressions, we must be able to anticipate that using them interchangeably will promote a more coherent system of beliefs and meanings.

Secondly, the fact that semantic change is usually a lengthy process with many people involved may cast a shadow over our claim as regards its purposiveness. Nevertheless, Davenport’s (1960) game-theoretical analysis of Jamaican fishing communities has shown that there are cases where the actual strategy of a large group of real-life agents playing an iterated game-against-nature may accord with the technical game-theoretical analysis of the situation, and this supports the idea that the *prima facie* unorganized decision-making activity of a group may yet be purposive. Interpreting meaning decisions as strategic rules in games, semantic changes will correspond to changes in strategy. Indeed, a brief look at the history of strategic games suffices to lead to the conclusion that change in strategic rules happens quite often. Recall that strategic rules are those related to mastering a game with respect to the aims specific to that game; it is not knowledge of definitory rules, but following the appropriate strategic

rules, that makes you a good player. These rules develop through time: it was not until Murphy that the idea of development was known to chess players. So, at a time when strongly defensive or offensive moves were the ones considered good, if there were then to be an occasion to make such a move, making instead a move of the kind that we, now (after Murphy) would call a “developing move” might well have been deemed bad or ineffective.

In most cases, even the definitory rules of games are subject to change. (New rules may be added, some rules may be found to be redundant and dispensed with, or an existing rule may be altered.) However, this kind of change is relatively hard to meet with. When a definitory rule has been changed, we may decide whether we are now playing a new game or still playing the old game in newly evolved form. It seems to be down to us to decide. Many games have retained their names, even though their list of definitory rules has been revised considerably over the course of time. Many games with similar but different rules share the name “Chess”, while some other variants, such as Chequers, Baroque and Take-All, which can all really be considered variants of chess, have acquired different names.

Why do we bother thinking of establishing a new rule, changing an existing rule, or even abolishing a rule in a game of strategy? Some reasons behind such changes in strategic games are internal: they refer only to other factors in the game, such as improving the applicability of the rules themselves. For example, when an arbiter was introduced into chess tournaments, this was because some other rules of the game could not be applied without an authority whose decisions during the course of playing the game would count as final. When the reason is external, it rather refers to whatever function that game has within some larger framework of human enterprise. For instance, the main reason for introducing a chess clock is to make the game more efficient and fun. Obviously, in neither of these cases was the new definition aimed at making the playing of the game somehow more in keeping with the essence of what it is to be a playing of the game of chess. This is not to deny, for example, that it is thanks to the definition of “arbiter” that we are willing to assent to the sentence “Lothar Schmid was the chief arbiter at the World Championship match between Bobby Fischer and Boris Spassky in Reykjavik in 1972”.

That semantic change should be considered an ongoing purposive process realized by the cooperation of language users is something we have yet to clearly establish. In the first instance, this claim can rest on the analogy already drawn above between semantic change and change to the strategic rules of strategic games. To give an example, the main motivation behind the introduction of a new strategic rule in chess is surely to obtain a more effective winning strategy. Given that our use of language—at least by virtue of playing an essential role in our goal-oriented activities, such as producing, communicating and storing knowledge—is itself a goal-oriented activity, we may conclude that semantic change should also serve the purpose of achieving our goals. Observations in historical linguistics (see Meillet, 1905; Ullmann, 1957; 1962) also support the

conclusion that semantic change occurs for various reasons. Work in this field has led to a classification of such reasons into three categories: technical or linguistic ones, historical ones, and psychological ones. Considering these, it seems safe to conclude that semantic change is directed towards the achievement of some goal(s)—and this is why one should talk of “reasons for” rather than “causes of” semantic change.

It would be unrealistic to assume that we can always achieve these goals once and for all by making a single decision regarding some meaning attitude or other. Rather, we should be ready to revise the meaning relations that we have woven into language in the light of either some new goals or the possibility of better accomplishing our existing goals. This explains why the revision of our strategic rules is an ongoing process: our expectation is that our particular games will develop better if we consciously or unconsciously try to keep them attuned to the larger human enterprise.

The coherentist approach is best suited to explaining the continuity of semantic change, mainly because the notion of coherence allows for degrees: one system may be more or less coherent than another, and our aim is to make our systems ever more so. We may exploit this property to articulate a guiding principle for choosing an appropriate belief from a number of alternatives. Given a system S and a set of alternative propositions $\{p_1, p_2, \dots\}$, let $\langle S+p_i \rangle$ for $i \in \{1, 2, \dots\}$ denote the list of all belief systems that we obtain as a result of adding the new proposition p_i and making the adjustments needed to our existing belief system to keep our set of beliefs coherent (e.g., by abandoning some of our beliefs, or replacing them with less contentious ones). Whenever we are able to make this calculation starting out with our present set of beliefs, we reach a new belief system S' which is at least as coherent as S . It is rational to add p_i to our beliefs if $\langle S+p_i \rangle$ contains one of the resulting belief sets with the highest degree of coherence. Iterating this process as we are faced with new alternative sets of propositions, we obtain a sequence of belief systems S, S', S'', \dots , such that each system should be at least as coherent as the preceding one. Applying the same idea to systems involving meanings along with beliefs, we may decide between alternative meaning attitudes.

Our coherentist attitudinal view of meaning may thus be regarded as satisfying the three Deweyan principles of accessibility, hypotheticality and progressivity mentioned earlier. This follows from the conception of belief and meaning attitudes underlying our view, and the conditions for their justification.

Firstly, while it is the case that meaning attitudes involve psychological states, the objects of meaning attitudes, their satisfaction and realization conditions, are all described in terms that are related to accessible observations, such as those concerning the use of linguistic expressions.

Secondly, to see that hypotheticality is also satisfied, note that when a linguistic community adopts some meaning attitude $\mu_G(e, e')$, this does not mean that they have *discovered* the truth that e means e' in their language. Neither does the theory assign meanings to the expressions e and e' —even after the system

that includes the attitude $\mu_G(e, e')$ has been justified. Rather, on the basis of an anticipation of there being favourable practical consequences, the community decides collectively to use these terms interchangeably, with the expectation that in this way their language will develop for the better. Given that the satisfaction of the latter involves indefinitely many future phenomena, adopting a meaning attitude involves the entertaining of a tentative, postulational hypothesis, and no definite number of positive observations can conclusively validate it.

Thirdly, it should be clear from their general characterization that meaning attitudes are revisable, and that they should be revised both in the light of our observations and in accordance with our expectations as regards better success in the future. This, it seems fair to say, suffices to show that on the account presented here, meanings will be linked to a domain of observation in a way that also promotes further observations.

ACKNOWLEDGEMENTS

I sincerely thank the editors of “*Studia Semiotyczne*” for their time and effort in handling the manuscript of the present article. I thank two anonymous reviewers for carefully reading the manuscript and commenting constructively on it, where this helped me to improve it considerably. I would additionally like to thank Prof. Lou Goble for commenting extensively on an earlier version of the text, and I would also like to thank him for making available to me the abstract of his PhD. dissertation. I also wish to express my gratitude to Dr. Nur Kurtoglu-Hooton and Tim Hooton for having carefully proofread the manuscript.

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