

Where Cognitive and Truth-Conditional Semantics Meet: The Case of Concept Shift

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Abstract

As is well known, cognitive semantics originated as a remedy for the problems encountered within formal analyses of meaning in terms of truth conditions and model theory, most notably the problems of objective truth to which sentences must conform, universal principles for associating the logical form (in a metalanguage) with natural language sentences, and the treatment of non-literal meaning as a departure from the literal norm. However, in recent years, the rift between the two approaches has been considerably lessened. While truth-conditional semantics undoubtedly offers an account of meaning that easily yields to computational implementation (especially in its dynamic version, supplemented with post-Gricean heuristics or some other account of defeasible reasoning, see Blutner -- Zeevat 2004, Asher -- Lascarides 2003; or Jaszczolt 2005), cognitive semantics offers unbeatable insights into the process of meaning construction, such as an interpretation of metaphor, irony, or any process of concept shift, offering the category of a conceptual schema that gives rise to

a whole range of meanings that cannot be straightforwardly accounted for in compositional semantics.

In this paper I consider the case of concept-shift proposed by Carston (2002), exemplified as concept narrowing (1) or two types of concept broadening in (2) (straightforward broadening of extension) and (3) (new extension overlapping with the encoded one):

- (1) The birds (+> sea birds) wheeled above the waves.
- (2) The steak is raw (+> undercooked).
- (3) Bob is a magician (+> has some properties of a magician).

(examples from Carston 2002: 324, 344, 351). While such an on-line construction of a concept allows us to retain the framework of truth-conditional semantics in its post-Gricean version (i.e. where semantics is underdetermined and has to be supplemented with the output of pragmatic processing in the form of inference or, on some approaches, defaults), one seminal question remains unresolved: “The question remains: how is the move from the lexically encoded concept to the ad hoc concept effected in these fundamental category-crossing cases?” (*ibid.*: 354). One of Carston’s tentative suggestions is that abstract concepts make use of pre-existing metaphorical schemas such as TIME IS MOVING ENTITY, LIFE IS JOURNEY, a.s.o. (see e.g. Lakoff -- Johnson 1980; Lakoff -- Turner 1989; Lakoff -- Johnson 1999; Jaszczolt 2002, ch. 17). I follow Carston in assuming that such “non-literal” meanings are not qualitatively different from “literal” and they can both be analysed on the level of what is explicitly said in an utterance. But I point out that such concept construction need not require conscious inference: conceptual schemas can give rise to the intended, “non-literal” interpretations automatically, conforming to the characteristics of subconscious image schemas of cognitive semantics (e.g. Lakoff -- Johnson 1999).

I also demonstrate that in Carston’s pragmatics-rich semantics there is no tension between a truth-conditional, pragmatics-rich analysis of utterance meaning and the explication in terms of cognitive schemas. However, the logical extension of this relaxation of the relationship between

the coded and the conveyed meaning would be to relax the dependence of the propositional representation of the utterance on the grammatical form of the uttered sentence. I briefly discuss the theory of Default Semantics and its proposal of such an independence of the semantic representation from the particular sources of information about meaning (including the lexicon and syntax). I point out the flexibility of this framework as regards the types of representation used by these different sources and conclude that, since semantic representations of cognitive grammar can be regarded as a level of representation of human cognition (Lewandowska-Tomaszczyk 1998), no incompatibility ensues.

Key terms:

concept shift, concept narrowing, concept broadening, *ad hoc* concept construction, image schema, post-Gricean pragmatics, truth-conditional semantics, Default Semantics

1. Foreword

Cognitive linguistics attracts interest not only from its dedicated advocates, but of most linguists interested in meaning and conceptualization, be it as a source of possible answers to their questions or as a juicy topic for attacks in reviews. In the summer of 1999 I attended an international conference in Cognitive Linguistics in Stockholm that attracted both types of interested parties. As I had engaged myself neither with utilising the cognitive paradigms nor with criticising them in writing, I was a rather anonymous observer, contributing a paper in which the argumentation had little in common with Lakoff and his acolytes. One of the participants asked me what framework I worked in, to which I replied: “truth-conditional semantics”. The person answered somewhat sniggeringly that he had thought truth-conditional semanticists were long extinct.

We are not extinct. On the contrary, we are doing quite well in making important advances in dynamic semantic frameworks and in post-Gricean pragmatics. But I think the above mentioned conference participant would not make this kind of comment now, seven years on in 2006 as it is becoming more and more apparent to both sides that the two orientations in the study of meaning are not incompatible. While it is a well worn out slogan that the followers of Tarski and Davidson are “objectivists” about meaning and the followers of Lakoff are “subjectivists”, the labels no longer hold. On this topic I find it very reassuring to find in Barbara Lewandowska’s publications predating that 1999 conference (e.g. Lewandowska-Tomaszczyk 1996, 1998) that she stresses the similarities and overlap between the linguistic-semantic and cognitive-semantic modes of the description of meaning. She points out the importance of admitting by Lakoff (1987) that conceptual models (his ICMs) can be image-schematic or propositional. She also argues that, for example, representations of Langacker’s cognitive grammar (Langacker 1987, 1991) are not so remote from those of Fodor’s (e.g. 1983, 1998) Mentalese, despite the modularity-connectionism debate: they are not pictorial representations but rather “[t]hey can be treated as emergent properties of the mental processing, of

different levels of generalization” (Lewandowska-Tomaszczyk 1998: 65). Since then I have observed that many other theoretical assumptions of both classes of frameworks are compatible and, indeed, complement each other. This paper concerns such points of compatibility and complementariness of the cognitive and truth-conditional approaches to meaning. I dedicate it to Professor Lewandowska-Tomaszczyk with my heartfelt gratitude for introducing me to semantics and philosophy of language back in the early 1980s, encouraging me to read great linguists and philosophers instead of uninspiring textbooks from the very early days of my undergraduate studies, and for being interested in my work for the subsequent twenty-odd years, although I have remained to this day an unrelenting truth-conditional semanticist.

2. Radical pragmatics

Conceptual categories are fuzzy: concepts have no clear boundaries. “Rich”, “poor”, “happy”, and even “bird”, “furniture”, “on”, “in” are all fuzzy when we try to apply them in descriptions of objects and situations. They can also be radial (Lakoff 1987, 1996; Lakoff -- Johnson 1999): a reasonably well-defined core of a concept may give rise to related satellites by means of an application of a certain rule. “Mother”, for example, generates the satellites “stepmother”, “foster mother”, or even “college mother”. They also give rise to typicality effects: we can often discern a prototypical exemplar of a category and exemplars that resemble it to a greater or lesser extent.

Conceptual categories come from our experience and we reason for the most part by using such experience-based prototypes (see e. g. Lakoff -- Johnson 1999: 19). But this reasoning is on some level of description identified with sensorimotor inference: a bodily function. The question to be answered in this paper is how this view of conceptualization compares with the one assumed in the current truth-conditional semantics and the post-Gricean pragmatics that uses the former as its base.

It has been widely accepted in truth-conditional approaches to meaning that the output of processing of the sentence structure and the lexicon is an underdetermined representation: it is “underdetermined” in the sense that more information is required in order to complete the semantic

representation and make it accurate as a representation of the speaker's intended, explicit meaning. This orientation is also called semantic underdetermination or sense-generality and was brought to the fore in the 1970s by a group of followers of Paul Grice: Jay Atlas (e.g. 1977, 1979, 1989, 2005, 2006), Ruth Kempson (e.g. 1975, 1979, 1986), Deirdre Wilson (1975), Larry Horn (e.g. 1976, 1984, 1985, 1988, 1992, 2004, 2006), Gerald Gazdar (1979), and subsequently Stephen Levinson (e.g. 1987, 1995, 2000), Kent Bach (e.g. 1994, 2001, 2004, 2006), Dan Sperber and Deirdre Wilson (1986), Robyn Carston (e.g. 1988, 1998, 2001, 2002), François Recanati (1989, 2001, 2002, 2004, 2005), and many others. The movement was then dubbed radical pragmatics (Cole 1981). According to radical pragmatics, there is no semantic ambiguity. The only ambiguities that are supported by the correct modelling of discourse processing are syntactic and lexical. The processing of the grammar and the lexicon often leads to an incomplete semantic representation that has to be completed by the result of pragmatic enrichment such as inference from context or, on some accounts, default interpretation.¹ Such pragmatic additions to the logical form are considered to be part of the truth-conditional representation, that is, they contribute to the truth conditions of the utterance. This works well on the assumption that the truth conditions that are of any interest for a theory of meaning are the truth conditions of the utterance: the meaning intended by the speaker and recovered by a model hearer as so intended. Sometimes grammatical processing may render a complete syntactic representation whose semantic interpretation gives wrong truth conditions – “wrong” in the sense of being an unfaithful reflection of the speaker's meaning. So, the completeness of the form is not a reliable criterion for the truth-conditionally relevant meaning. For example, (1) requires an expansion to (1b) instead of being interpreted as (1a).

- (1) I haven't eaten.
- (1) a. There is no time prior to the time of the utterance at which the speaker ate.
- (1) b. The speaker hasn't eaten lunch (or the appropriate meal for the part of the day) yet.

We thus obtain a truth-conditional semantics that subsumes a pragmatic element which further elaborates the logical form (Carston 1988) or, according to an alternative terminology, we obtain a theory of truth-conditional pragmatics (Recanati 2002, 2003, 2004).

While underdetermined semantics throws open many questions such as the semantics-pragmatics boundary, the possibility of formal modelling of discourse, the delimitation of the explicit content (called by some what is said, Recanati 1989, Jaszczolt 2005, by others explicature, Sperber -- Wilson 1986, Carston 1988), its main advantage is that it gives a more accurate account of what happens in utterance interpretation than the original Gricean model on which the truth-conditional content of the utterance equalled the truth-conditional content of the sentence plus some minimal resolution of indexical terms and lexical and syntactic disambiguation (see Grice 1978). We can now begin the analysis of meaning with adopting an assumption that the only level of representation of meaning that is required is the one of the meaning intended by the speaker as the primary, explicit content. Implicature becomes relegated to additional, secondary, intended meanings that have their own logical forms, separate from the one explicitly stated.

We shall not be concerned for the current purpose with the debate pertaining to the scope of what is said. While some post-Griceans construe it broadly, in the manner introduced above, others prefer a three-level model, with the intermediate level construed as what is implicit in what is said (Bach 1994, see also Bach 2004; Horn 2006) or as context-free presumed meanings, modelled loosely on Grice's generalized conversational implicatures (Levinson 1995, 2000). In what follows we will assume the broad, pragmatics-rich notion of what is said and assess the extent to which such pragmatic developments of the logical form are compatible with the cognitive stance on concepts.

3. Ad hoc concept construction

It is a fact of conversation that in particular contexts words may come to acquire senses that differ from the encoded meaning. Carston's (2002)

account of this phenomenon is a good example to show that in order to understand the processing of concepts in a discourse, one has to have an adequate semantic theory as well as an adequate theory of language processing. She starts with the assumption that lexical concepts, that is concepts encoded as words, are atomic, non-decomposable, and do not have definitions. This assumption, borrowed from Fodor's (e.g. 1998) theory of concepts, allows her to develop a proposal of how lexically encoded concepts shift and new senses are derived pragmatically. Such shifted concepts she dubs "ad hoc concepts": they are constructed "online" out of the coded meaning, using pragmatic inference. For example, in (2), the concept bird is narrowed, that is made more specific and narrower in extension, to sea bird. We can also say that through the narrowing of the extension the concept has been strengthened. This narrowing is achieved by a pragmatic process of context-driven inference.

(2) The birds wheeled above the waves.

(from Carston 2002: 324).

She agrees with Recanati (e.g. 1989, 2002) that this process is free from syntactic constraints: it is not driven by any slots to be filled in the logical form of the sentence. It is not, as Recanati says, "bottom up", governed by the considerations of sentence structure, but "top-down": it is a result of pragmatic inference, motivated by the need to recover the speaker's intended meaning. The latter is governed, according to Carston's account, by the principle of relevance (Sperber and Wilson 1986) and in particular by the subconsciously assumed and subconsciously applied rule of preserving the balance between the effort spent on the processing of the utterance and the amount of informative contribution ('cognitive effect') the utterance brings to the conversation.

In addition to strengthening, concepts can also undergo a process called "loosening", "broadening", or "relaxation" of meaning. In (3), the concept raw becomes pragmatically loosened to mean undercooked:

(3) This steak is raw.

(from Carston 2002: 328).

Such pragmatically constructed concepts are then part of the explicit, truth-conditionally evaluable, content of the utterance. So, on this construal, there is a pragmatic shift that contributes to the truth-conditional content.

Pragmatic enrichment of the output of syntax (the logical form) is taken further here than in earlier radical-pragmatic accounts: not only can the addressee further enrich the logical form as in (1) in order to obtain a representation of the meaning intended by the speaker, but he/she can also manipulate the encoded content. And all this happens on the level of the explicit content and is captured in the semantic representation of the explicit, primary meaning of the utterance. To be faithful to the terminology of relevance theorists, we should not even speak of truth conditions of utterances here but instead of truth conditions of thoughts and assumptions because semantic theory is a theory of intended meaning, or meaning recovered by the addressee as that intended by the speaker. We shall, however, retain the more intuitively plausible label of truth conditions of utterances, understanding utterances in a broad sense preferred by philosophers (most notably Grice) as expressions of thoughts where these expressions are not necessarily linguistic or are not necessarily wholly linguistic.

What is interesting is that once we admit concept loosening in semantic representation, then we also have to admit metaphorical meanings as belonging to the explicit rather than to the implicated content. For example, (4) contains a metaphorical use of the term “bulldozer”. The concept bulldozer shifts pragmatically to render aggressive, inflexible, assertive, etc.

(4) Mary is a bulldozer.

(from Carston 2002: 328).

To repeat, since the pragmatic shift occurs on the level of the explicit content, the sentence is not false because Mary is not a piece of builders' machinery; it is true because she has an aggressive, inflexible, and assertive disposition. In short, "...metaphorical (and other loose) uses are no less literal interpretations of speakers' thoughts than standard literal uses are." (Carston 2002: 340). In this approach Carston takes a new line on metaphor as compared with that of standard relevance theory of Sperber and Wilson (1986, 1995). On the relevance theory account, propositional form of the utterance was understood to stand in the relation of interpretation to the thought of the speaker: the two could be identical or the utterance could merely resemble the thought. Metaphors facilitated such a relation of resemblance between the propositional form of the utterance and the thought of the speaker.² Now, on Carston's 2002 account, metaphors are not relations of resemblance between the two but instead belong to the propositional form itself. And, as we shall see in the following sections, they also belong to the thought: we think in terms of metaphors and this metaphorical thought can be construed as being reflected in propositions, or Carston's explicatures. Translating this cognitive assumption into the set of assumptions of Carston's post-Gricean pragmatics, it means that our propositions contain metaphorical expressions in the same manner in which they contain literal meanings; there is nothing nonliteral about their content and use.

It has to be observed that while concept narrowing is a relatively straightforward move and is well acknowledged in the pragmatic literature, concept broadening is more contentious. In addition to clear broadening of the extension such as from raw meat to raw plus significantly undercooked, we also have here cases where the extension is not simply broadened but rather is replaced with an overlapping one such as in (5):

(5) Bob is a magician.

(from Carston 2002: 351).

Bob may be called a magician because he is particularly good at solving logical puzzles or baking cakes. Some “real” magicians can be good at baking cakes too but some will not. Also, most people who are good at baking cakes are not magicians. So the extension of the new, ad hoc concept will at most overlap with that of the encoded concept. And, finally, as we saw from the discussion of (4), broadening may also mean the shift to a completely new extension set, disjoint from that of the original, lexically encoded extension: no aggressive, assertive, inflexible people are at the same time pieces of heavy machinery.

While the varieties of concept loosening are likely to remain controversial when classified as sub-cases of the same process, and while the symmetry of broadening and loosening may be (and has been) legitimately questioned, we can remain neutral on the debate at the moment. What interests us for the current purpose is the very process of the ad hoc concept shift. We are interested in its properties, stages, and its place in reasoning, communication and cognition. Carston (2002: 354) asks: “...how is the move from the lexically encoded concept to the ad hoc concept effected in these fundamental category-crossing cases?”. We don’t have an answer to this important question yet and it is very likely that a reliable answer will only come from experimental pragmatics and from experimental evidence concerning the properties of pragmatic inference.³ However, she suggests some interesting possibilities that are worth exploring. One is “the general human capacity for making analogies” (*ibid.*) as exhibited in creative thinking of artists and scientist. This involves mapping between very different domains, such as, for example, the atom and the solar system in order to understand and express the structure of the first.⁴ Another possible explanation, related to the one above, can be found in cognitive linguistics. Abstract concepts are processed and stored with the help of subconsciously accessible metaphorical schemas such as TIME IS MOVING ENTITY, ARGUMENT IS WAR, or LIFE IS A JOURNEY. Carston does not elaborate on this possibility, neither does she provide many pertinent references (but see e.g. Lakoff -- Johnson 1980; Lakoff 1987, 1996; Lakoff -- Turner 1989; Lakoff -- Johnson 1999; Ungerer -- Schmid 1996; Jaszczolt 2002). Langacker (1999: 93) defines an image

schema as follows: “A schema is the commonality that emerges from distinct structures when one abstracts away from their points of difference by portraying them with lesser precision and specificity.” The mapping normally occurs from the more concrete to the more abstract domain, and hence also from the physical to the psychological (MIND IS BODY), which explains expressions such as “I can see the problem” or example (4) above. This is so because the mind is construed as “embodied”: the semantic categories formed by speakers are part of their experience, are often based on prototypes formed by this experience, and, ultimately, concepts should be understood as neural structures that are part of the sensorimotor system of the brain (see e.g. Lakoff and Johnson 1999: 16-23). “Concept shift” can be construed as an instantiation of this “embodied thinking”.

Encyclopedic information about the activity of bulldozers helps execute the shift: sweeping debris on its way is mapped onto, say, sweeping opponents in conversation. However, if metaphorical schemas are subconscious, closely dependent on the embodiment of the mind, then are such concept-shifts really ad hoc? They seem to be ad hoc in the sense that the context dictates whether the coded meaning remains as the recovered meaning of the speaker’s or is replaced with the “shifted” meaning. In the sense of predictability and conscious inference, however, such shifts are hardly ad hoc. In fact, from the perspective of cognitive semantics, they are not “shifts” either: for the shifts to take place we would have to assume clear-cut encoded meaning and a clear-cut complement set to this coded meaning. This is not the case in the cognitive perspective. Further, this is not the case in post-Gricean pragmatics either: pragmatic ‘inference’ is not necessarily a conscious inferential process, and the starting point of this process is not necessarily a clear-cut concept. Perhaps the “shift” and the “encoded” are to be taken as metaphorical expressions themselves. It can be reasonably inferred from the various assumptions held in relevance theory that while the idea of the move towards speaker’s meaning still holds, the shifting concept and the process of shift itself are not to be understood as in the traditional semantic approaches to metaphorical concept shift. I return to this topic in sections 5 and 6 while discussing the properties of pragmatic

inference and the extent to which semantic theory should make use of the idea of coded meaning.

Be that as it may, this possibility of explaining ad hoc concept shift in terms of conceptual schemas of cognitive linguistics is attractive for many reasons. The main reason is purely epistemological. Truth-conditional semantics enriched with pragmatic inference offers a precise, formalizable, and as it seems computationally implementable model of utterance meaning (see e.g. Optimality Theory Pragmatics, Blutner -- Zeevat 2004) but does not offer a satisfactory explanation of the process by which coded meaning becomes altered in a context. Cognitive semantics, on the contrary, is not restricted by coded meaning and offers a well-developed account of abstract concepts, unconscious thought, in the overall perspective of the embodiment of the mind. By combining these two outlooks we can obtain a precise linguistic account of speaker's meaning and a reliable psychological account of utterance processing. Next, in making the assumption that the two perspectives are compatible, one opens up a possibility of explaining utterance interpretation as cross-modal, where concepts can rely on image schemas, and hence sometimes on a form of visual, or at least graphic representations, while utterance meaning remains propositional, represented through a language of predicate logic or some other metalanguage, and is based at least to some degree on syntactic representations. And, since semantic representations of cognitive grammar can be regarded as only a level of representation of human cognition (e.g. Lewandowska-Tomaszczyk 1998), no obvious incompatibility ensues. I shall look at this possible compatibility in Section 6.

4. From logical form to merger representation

While Carston's proposal of the merger of relevance theory with an account of ad hoc concept shift can be deemed radical in its acceptance of inferentially shifted meanings of words as part of the explicit content (explicature), it is not radical enough in other respects such as in its pursuit to capture the content of the primary, intended, speaker's meaning. Leaving aside the debate as to whether a pragmatic theory should study speaker's intended meaning or the meaning (re)constructed by the addressee as that

intended by the speaker (see Saul 2002; Horn 2004), the main question to pose here is whether we really need the constraint to the effect that utterance meaning is the development, embellishment, enrichment, modulation, a.s.o. of the logical form understood as the output of grammatical processing. Firstly, the criteria for what counts as a “development” are not reliable.⁵ Secondly, if what is said can contain the result of pragmatic inference and ad hoc concept shifts, then why should it not contain the shift from the meaning indicated by the grammatical construction to some other meaning that is best described by using a different sentence structure but which is the one primarily intended by the speaker or, alternatively, is recovered as the primary, intended meaning by the addressee? Default Semantics (Jaszczolt 2005, 2006b) takes this step. It models utterance interpretation as a merger of information coming from four sources: (i) word meaning and sentence structure; (ii) (conscious) pragmatic inference⁶; (iii) cognitive defaults; and (iv) social-cultural defaults. The output of (i) corresponds to the traditionally understood logical form, (ii) is the output of context-dependent reasoning, (iii) provides ready specifications of the meanings of semantically underspecified expressions such as definite descriptions (“the man who wrote Oscar and Lucinda”), giving them the reading that comes with a stronger informative intention (here: the referential reading, “Peter Carey”), and (iv) provides ready meanings that come from shared cultural and social knowledge, such as (6a) for (6), where “the mother” is understood by default as the boy’s mother – an instantiation of the default presumption that children are raised by their own parents.

- (6) The boy hurt his head and the mother took him home.
 (6) a. The boy hurt his head and the boy’s mother took him home.

The output of these sources forms what is called a merger representation. This representation is propositional, formulated in an amended and extended language of Discourse Representation Theory (Kamp -- Reyle 1993; van Eijck -- Kamp 1997). The language is extended in the sense that it allows operators on non-linguistic objects such as events (in order to represent temporality and modality) and intensional objects (in order to represent, for

example, propositional attitude constructions). In this sense it allows for object that can have their own form of representation and as such is compatible with the idea of admitting image schemas as explanations for metaphors. The incorporation of image schemas would be analogous to that found in Carston's version of pragmatics-rich semantics discussed above, with the main difference lying in the substantially decreased reliance (in Default Semantics) of the semantic representation of the utterance on the logical form of the uttered sentence.

The main advantage of freeing the representation from the constraints of grammar is, in the domain of the theory of metaphor, that the analysis is not confined to concept shifts for atomic, encoded concepts. While the shift from "bulldozer" to "aggressive" can be instituted with minimal alterations to the grammatical structure of the whole sentence, this is not the case with many other metaphorical expressions and we want to be able to represent them equally successfully. In (7), the expression "be swept off one's feet" requires an alteration of the whole verb phrase to something to the effect of (7a) in search for the intended primary meaning:

- (7) Mary heard the performance of La Traviata and was swept off her feet.
- (7) a. Mary admired the performance of La Traviata very much.

It has to be noticed that the overall semantic representation of the speaker's meaning is propositional: although it is a merger of information coming from different domains and as such allows in principle for different media for different modalities, its infallible methodological assumption is that the semantic representation has to be compositional and hence requires a compositional language for this representation, such as the extended formal language of DRT. The relaxation of the link between the logical form of the uttered sentence has no impact whatsoever on this requirement of a compositional semantic representation.⁷

The adequacy of the model can be better assessed when the algorithm for the compositional merger of information is completed and when we obtain more experimental evidence on the properties of inferential

processes: their speed, the moment at which they are activated in utterance processing, the nature of ‘shortcuts’ through costly inference, and so on (see Jaszczolt 2006b). What matters for the current discussion is that adherence to the “development of the logical form” is not a necessary constraint for modelling discourse: sources of information can interact on terms of equality and override each other’s output. I have assumed that this merger is always propositional and compositional. But whether a merger representation is always constructed entirely from traditionally understood building blocks of propositions (such as constituents in some version of generative grammar) is an open question: the output of the source of information need not necessarily be “translated” into a fully propositional system. I assumed above that no such constraint on the form of representation of the components of the merger holds. In a similar vein, in truth-conditional pragmatics, Recanati (2004: 132) suggest that a more “interactionist” or “Gestaltist” approach to compositionality may be a way forward. Free enrichment, ad hoc concept construction, and merger representations all testify to the plausibility of this prediction.

5. Ad hoc concept construction: Inference or automatic shift?

Coming back to the process of concept shift, the question arises: does it have to be an inferential process? Does concept shift rely on inference? If image schemas can give rise to metaphorical concept shifts, then surely such shifts can be unconscious and automatic? Part of the problem is terminological. While for relevance theorists the label “inference” subsumes both conscious, effortful processing and unconscious enrichment (see diagram in Recanati 2004: 41), in more neutral terminology we would reserve the term “inference” for conscious reasoning, possibly also including spontaneous inference which can be retrospectively brought to the subject’s consciousness while he/she reflects on the interpretation process, but nothing else. So, if automatic and instantaneous shifts of the metaphorical-schema type are inferential, they are only inferential in the widest sense of the term. But if it is so, then, surely, it is more plausible to describe them as instances of default, instantaneous, effortless

interpretations, at least on the understanding of default in which defaults arise post-propositionally, when the whole expression has been processed and the context assessed. Default Semantics construes salient interpretations as such post-propositional unmarked meanings.⁸ Let us take example (4) again (repeated below).

(4) Mary is a bulldozer.

The schema PSYCHOLOGICAL FORCE IS PHYSICAL FORCE acts as a subconsciously available conceptual schema. We can assume that it is subconscious because it pertains to a metaphor that is likely to be entrenched as a way of thinking about aggressive and uncompromising behaviour. Similarly, “Mary is my star” or “Tom is a real snake” can be plausibly construed as instances of a subconscious use of metaphorical schemas: the coded meaning of “snake” merges with the socially and culturally triggered default for “snakehood” as predicated of human beings because of the automatic activation of the conceptual schema through the social-cultural default of Default Semantics.

Lakoff and Johnson (1999: 10-11) give the following (indicative and incomplete) list of activities that happen automatically below the level of consciousness in a conversation. I have emphasised in boldface the processes that are particularly pertinent to our earlier discussion.

- Accessing memories relevant to what is being said
- Comprehending a stream of sound as being language, dividing it into distinctive phonetic features and segments, identifying phonemes, and grouping them into morphemes
- Assigning a structure to the sentence in accord with the vast number of grammatical constructions in your native language
- **Picking out words and giving them meanings appropriate to context**
- Making semantic and pragmatic sense of the sentences as a whole
- Framing what is said in terms relevant to the discussion

- **Performing inferences relevant to what is being discussed**
- Constructing mental images where relevant and inspecting them
- Filling in gaps in the discourse
- Noticing and interpreting your interlocutor's body language
- Anticipating where the conversation is going
- Planning what to say in response.

All these activities indeed intuitively seem to go on below the level of consciousness. However, we are in danger of overgeneralizing here. Surely, there are novel metaphors that force the addressee to infer a schema through conscious reasoning. For example, (8) is unlikely to be processed entirely below the level of conscious awareness.

(8) Your book is a Siamese cat.

We have a series of weak associations that may come to mind but it is unlikely that any salient characteristic of a Siamese cat will spring to the hearer's mind to activate a subconscious concept shift from properties of cats to properties of books. We would not want to say either that the utterance of (8) must always be infelicitous: surely, as Gricean maxims and post-Gricean principles predict, the addressee will look for a relevant interpretation. So, while some concept shifts are automatic, others seem to require effortful conscious inference.

6. Concluding remarks: Compatibility or ad hoc eclecticism?

Lakoff and Johnson (1999: 3) summarise the foundations of the cognitive-semantic paradigm as follows:

The mind is inherently embodied.

Thought is mostly unconscious.

Abstract concepts are largely metaphorical.

One can hardly disagree: we know among others from the seminal work of Gilbert Ryle (1949) that Cartesian dualism does not hold. We also know that utterance interpretation is for the most part an unconscious process of (i) decoding or remembering and employing past uses of an expression, depending on the orientation, and (ii) inference of some kind. It is also difficult to deny that some metaphorical meanings are more salient than their literal counterparts and are more likely to constitute concepts that are used in the process of utterance production and comprehension without going through the phase of the reinterpretation of the “literal” – if the latter is discernible at all. We have observed in this brief analysis of Carston’s “concept shift” that putting together the truth-conditionalists’ achievement of a pragmatically enriched semantic representation and the cognitivists’ model of processing meanings through image schemas, we obtain a more comprehensive picture of utterance interpretation. While the terms “shift”, “encoding”, or “inference” may sound alien or inadequate on some of the orientations combined here, I hope to have shown that the conceptual underpinnings of such an eclectic approach are in principle conducive to progress in our understanding and modelling of utterance interpretation.

Lewandowska-Tomaszczyk (1998: 67) discusses some big questions concerning the epistemological foundations of cognitive linguistics:

- (i) whether language is a module with its autonomous system of representation different from the systems of other (visual, auditory) modalities;
- (ii) if the system is identical across the modules, then whether it is a visual image schema;
- (iii) whether there is an intermediate system of representation such as for example Fodor’s Mentalese or some other linguistic-structure-based system, and generally,

(iv) whether human cognition is direct like connectionists claim or rather involves computations on symbols.

These questions are particularly pertinent to the issue of compatibility of the cognitive and truth-conditional outlooks. We have to remember that for cognitive linguists grammatical and lexical units are symbolic (see e.g. Langacker 2002: 16). But the symbolic character of linguistic units is supervenient on neural networks: “From the processing standpoint, language must ultimately reside in patterns of neurological activity. It does not consist of discrete objects lodged in the brain, and it cannot all be manifested at any one time” (Langacker 1999: 95). Connectionism and parallel distributed processing provide the ultimate level on which we can talk about processing meaning. While this perspective has to be seen as an alternative to the modularity hypothesis, it is also the case that the strict modularity view can no longer be maintained: the cross-feeding of information across domains is widely accepted. Next, question (ii) is relatively easy to answer. Image schemas are “highly abstract conceptions, primarily configurational” (Langacker 1999: 3). Meaning is understood as conceptualization and hence the schemas are representations of meaning. But conceptualization subsumes both established concepts and newly formed concepts, sensory, kinesthetic and emotive experience, as well as the concepts formed by the cultural, social, and textual context (see Langacker 2002: 2). It is clear from this introduction to image schemas that they are not merely pictorial images in the brain, neither are they the ultimate, most basic level of semantic description. Moreover, they cannot be images and they cannot be most basic because of the processing, dynamic perspective taken on meaning in this framework. Semantics does not merely yield ready representations, it also models the process of meaning construction of which images are an output.

While we are still far from resolving the debate over representationalism, the last few years of theorizing and experiments brought us closer to the answers. We now know that even when we assume representationalism and modularity, we have to allow for cross-modal cross-feeding. This is so even if (ii) is answered negatively, that is the systems of representation do indeed vary cross-modally and (i) holds for linguistic

expressions. If we go along with (iv), the cross-feeding between different domains of information is even simpler to explain than what we have attempted here: the physical reality of neural activities is the same for all domains of meaning construction and reconstruction. All in all, whether we construe cognition as symbolic or connectionist, ad hoc concept construction as a legitimate component of a truth-conditional semantic analysis founded on the idea of semantic underdetermination and top-down pragmatic processing demonstrates that image schemas (a very plausible representation for ad hoc concepts) can be reconciled with a propositional-structure-based approach to speaker's meaning. The very fact that pragmatics-rich truth-conditional semantics/truth-conditional pragmatics takes speaker's meaning as its basic unit and relegates linguistic semantics (the semantics of linguistic strings) to the role of an underspecified representation – a string without cognitive reality, shows that a more inclusive (“Gestaltist”) approach to meaning should be strongly favoured (see also Recanati 2004: 132). Moreover, the fact that top-down, free pragmatic enrichment is not the most radical explanation allows us to predict that the compatibility of the orientations will only increase. Default Semantics takes the rejection of the role of the logical form in utterance processing even further: it offers a model on which the primary, explicit meaning of the utterance may not even resemble the structure uttered but instead may be what is in other post-Gricean frameworks called an implicature, as long as this “implicature” is the strongest meaning intended by the speaker to be conveyed by this utterance.

We can now address the main points of discrepancy between cognitive and truth-conditional outlooks. Langacker (2002: 1) writes: “... a formal semantics based on truth conditions is deemed inadequate for describing the meaning of linguistic expressions. One reason is that semantic structures are characterized relative to knowledge systems whose scope is essentially open-ended. A second is that their value reflects not only the content of a conceived situation, but also how this content is structured and construed.”. While these two issues have frequently been regarded as core points of incompatibility with truth-conditional semantics, it need not necessarily be so. Ad hoc concept construction is compatible

with a truth-conditional analysis, as long as the truth conditions we are interested in are the truth conditions of the utterance, thought, or a sentence enriched or merged with the information about meaning that comes from other domains recognised in radical pragmatics, for example the four domains of Default Semantics. The problem of meaning construction is accounted for by the same token: merging information about meaning *is* such a process of meaning construction. What remains to be resolved then is the problem of compositionality. While cognitive semantics (and within this orientation cognitive grammar, Langacker 2002: 25) is described as not fully compositional, and, on the contrary, truth-conditional semantics assumes compositionality of meaning as its fundamental methodological principle, in practice there is no polar opposition here. Meaning as the output of syntactic structures understood as in generative grammar is not fully compositional either. Attempts of early truth-conditional semantics to make it compositional and fit into rigid formalisms had to either ignore some parts of meaning of natural language sentences or posit intensional objects in the semantic representation, for example for representing propositional attitude constructions, referring expressions, or temporality. In the pragmatics-rich truth-conditional theory of utterance meaning, however, we are free to construe compositionality as a requirement methodologically imposed not on the output of grammar and the lexicon but as the property of the representation that collects information from a variety of sources, including situational, social and cultural context, social, cultural and linguistic conventions, gestures, interlocutors' knowledge base, and other sources that may turn out to be relevant on a particular occasion. Compositionality so construed, in the spirit of Recanati's (2003) Gestaltist compositionality or the compositionality of merger representations of Default Semantics, allows for much more open-endedness in meaning construction.

In order to facilitate predictions as to this compatibility, one also has to consider the most radical stance on utterance meaning called sometimes meaning eliminativism (Recanati 2004, 2005). Meaning eliminativism denies that words have coded meanings and assumes that they merely indicate particular senses in particular contexts thanks to the past uses with

which they were encountered. If words have no meaning but only meaning potential and if all meaning is, in the late-Wittgensteinian manner, use, then the path from a word and a construction to its meaning is all that there is: meaning is constructed there and then on the spot, and it can be constructed in whatever medium is most appropriate for this particular meaning. Carston (2002) does not go that far towards context-dependence, although she admits that lexical meaning can be of different kinds: some words encode concepts, while others encode “concept schemas, or pointers, or addresses in memory” (p. 363). But, in practice, ad hoc concept construction may prove to be more radically ad hoc than Carston assumes in that it may prove not to have a clear starting point, and less radical in not being ad hoc but often driven by a subconsciously assumed metaphorical schema. Similarly, representations can be more radically context-dependent than most post-Griceans assume; the reliance on the syntactic representation, even to some small degree, may prove to be an unnecessary constraint. And if we allow various sources of information about meaning to interact in producing a semantic representation of the speaker’s utterance, then it is natural to assume that these sources have their own representation systems that are mutually intelligible and that allow for the merger of their outputs. Merger representations of Default Semantics, for example, would be compatible with such a construal.

Coming back to Lewandowska-Tomaszczyk’s (1998) questions (i)-(iv) from the beginning of this section, it seems that although we don’t yet have a final word of experimental science on the topics, what we have is theories of utterance meaning and utterance processing that are not constrained by the representation system, the coded-inferential distinction, and, above all, by the alternative of the linguistic vs. the extralinguistic source of meaning. This liberal conception of semantics cuts across the cognitive -- truth-conditional divide. Representing meaning is representing it all, from the perspectives of content, as in truth-conditional, pragmatics-rich semantics, and from the perspective of processing, through pragmatic inference and subconsciously available schemas, be it imagistic or propositional.

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Notes

¹ For an extensive introduction to radical pragmatic see Jaszczolt 2006a.

² See also the diagram in Sperber and Wilson (1986: 232).

³ Experimental pragmatics is still in its infancy but see e.g. Noveck --
Sperber 2004.

⁴ See ibid. for the literature on psychological studies of this phenomenon.

⁵ See e.g. Recanati 1989 and Jaszczolt 2006a on an overview of some
possible criteria.

⁶ On the differences in understanding of the terms “conscious” and
“inference” in post-Gricean pragmatics see Recanati 2004.

⁷ I discuss the methodological requirement of compositionality and how it
can be reconciled with the idea of the merger in Jaszczolt 2005. For a
different attempt to model pragmatic rules using DRT see Asher and
Lascarides 2003.

⁸ Unlike, for example, Levinson’s (2000) presumptive meanings which are
“local” defaults. See Recanati 2003 and Jaszczolt 2006a for a discussion.