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The Live Principle of Compositionality*

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Abstract

In this paper I argue that the principle of compositionality should be thought of as a principle that applies to the live meanings of constituent expressions. Under such a conception of the principle contextualist findings in the philosophy of language can be handled in an intuitive and non-trivial way. Several cases, most of them known from the semantics literature, are addressed in order to illustrate the presence of live meanings. The live principle also grounds a so-called interference principle, that is used as a methodological tool for a fair judgement of proposed semantic explanations of various intricate linguistic phenomena.

Keywords: Formal interpretation, pragmatic ambiguity, dynamic semantics, compositionality, contextualism, coercion.

Introduction

In this paper I approach contextualist findings in the philosophy of language (not epistemology) from the perspective of the formal semanticist's enterprise. These contextualist findings have already been shown, despite expectations or suggestions to the contrary, to be consistent with a compositional understanding of the syntax-semantics interface (Pagin & Pelletier 2007; Lasersohn 2012). However, these proposals for the accommodation of contextuality in the form to meaning mapping seems to carry with them the danger of trivialization.

Contextualist findings can be rendered compositionally once we assume that what we are dealing with are so-called 'live meanings'. The principle of compositionality, thus understood, obviously generalizes the well-known statement of the principle itself, and it obviously leaves room for all kinds of contextual modulation. Moreover, it allows for a critical evaluation of several kinds of formal semantic analyses that are proposed in the literature. For one thing, the principle naturally builds on a notion of 'live' as opposed to 'past meanings' (in the spirit of Davidson 1986), which are deemed 'present' rather than 'absent'. The principle is also called upon as a methodological tool, by means of a so-called 'interference principle', that can be applied in the evaluation of proposed semantic analyses of various phenomena at the syntax/semantics interface.

I will proceed as follows. In the first section I will briefly discuss the issues of contextualism and compositionality and propose a conception of the principle of compositionality as one that involves so-called 'live' meanings. Live meanings figure as the natural instants of contextually determined interpretations. In section 2 I discuss a series of cases, in which we

* I would like to thank Gerke de Vries and Seyed Mohammad Yarandi for stimulating insights; the idea of writing the paper for Ede Zimmermann formed, of course, a great inspiration.

can see the live principle of compositionality at work, and which illustrate the importance of a live understanding of expressions in actual discourse. Section 3 provides some further reflection on the formal semantic enterprise, given that the live principle of compositionality can be taken to cast doubt on the very idea of a minimalist semantic program. I will argue that the principle can be, and as a matter of fact is, already, very productively employed in linguistic discussions at the syntax / semantics / pragmatics interface. The final section briefly sums up the results.

1 Live Compositionality

1.1 Compositionality and Contextuality

The formal study of the syntax and semantics of natural language, as, for instance, cast in the montagovian paradigm, is seriously devoted to the fregean principle of compositionality. The principle can be found at work in Frege's writings (e.g., Frege 1892), and although it is not stated as such by Gottlob Frege himself, it can be formulated as follows.

Principle of Compositionality (PoC) The meaning of a compound expression is a function of the meanings of its parts and their mode of composition.

A formulation of the principle along these lines naturally shows up in a vast body of 20-th work on logic, language and computation, whether it be philosophical, or not. (For a solid, general overview and background, see Janssen 1997; Partee 2004.) The principle of compositionality allows for a neat explanation of the fact that finite language users may be able to create, use and understand a possibly infinite number of expressions so as to express a possibly infinite number of meanings.

Formally, the principle tends to be spelled out by means of, first, a specification of a syntactic and a semantic algebra, and, second, the definition of an interpretation function as a homomorphism from the one algebra into the other. The principle is often characterized as a methodological, not substantial, one, that does not characterize or constrain natural and formal languages, but one that constrains the formulation of the interpretation of these languages, i.e., as, in principle, a homomorphism. Nevertheless, there are ongoing attempts to falsify or refute the principle, and these at least challenge its proponents to come up with analyses that refute these attempts. It is, then, at best an estimation of the methodological cost of keeping to the principle that may decide for or against maintaining it. While a natural defense of the principle consists in the rhetorical question: "if the meaning of a whole is not determined by the meanings of its parts, 'of what else could it be a function?'" (Putnam 1954, p. 118), a natural attack often consists in the reply that it is also determined by other parameters of interpretation, not better labeled than 'contextual'.

Many authors in the philosophy of language have realized, in the spirit of the later Wittgenstein (Wittgenstein 1953), that the context of the use of language plays a pervasive role in its interpretation, up to the effect that it hardly deserves the effort any longer to characterize meanings of natural language expressions without paying due attention to these contextual aspects. Thus, an old and methodologically convenient picture of a linguistic theory has come under attack. According to this picture, or caricature, the syntax of a language is taken to define what are the well-formed expressions of that language; in its semantics it is next systematically specified what are suitable meanings of those expressions; and in the

pragmatic component of such a theory it is ruled what one can do with these expressions with their meanings. The picture is naturally associated with a so-called ‘minimalist’ view of semantics. Upon this view, expressions or utterances of a natural language are associated with a minimal core meaning, that can be enriched, by pragmatic means, up to a more natural, contextually adjusted meaning. Compositionality of meaning is taken to reside on the supposed autonomous level where syntactically analyzed expressions are associated with their minimal semantics. Contextualists argue, or assume, that the prospects of a formal semantics, thus conceived, are slim, if not outright unattainable.

The contextual impact on meaning and interpretation has been subsumed under various labels. To name a few, there is pragmatic enrichment, argument saturation, domain restriction, predicate loosening, semantic coercion, deferred reference, and what have you. Generalizing somewhat rudely, we may bring them all under the label of ‘modulations’ of meaning, and then it can be observed that the various types of modulation indeed affect all basic, truth-conditionally relevant, semantic categories. They affect the traditional semantic categories of reference, predication, quantification, and construction. It will not do here to rehearse all the contextualist examples that have been presented, as they are probably fairly well-known, and since they will reappear in the cases to be discussed below. Let me just cite some of the conclusions that have been drawn.

“Contextualism holds that what is said depends on the context of utterance. The evidence in favor of contextualism is provided by indefinitely many examples in which the same sentence, which does not seem to be ambiguous, is used in different contexts to say different things.” (Recanati 1994, p. 164)

“Contextualism ascribes to modulation a form of necessity which makes it ineliminable. *Without contextual modulation, no proposition could be expressed*—that is the gist of contextualism.” (Recanati 2005, p. 179–80)

“These days, the natural descendent of the formal approach, known as minimalism, has been consigned to the margins: not everyone rejects minimalism, but lots of people do. Minimalism is rejected in favour of contextualism: roughly, the idea that pragmatic effects are endemic throughout truth-evaluable semantic content.” (Borg 2007, p. 339)

According to Herman Cappelen and Ernie Lepore, one of the hallmarks of ‘radical contextualism’ is the claim that “No English sentence *S* ever semantically expresses a proposition. Any semantic value that Semantic Minimalism assigns to *S* can be no more than a *propositional fragment* (or radical), where the hallmark of a propositional fragment (or radical) is that it does not determine a set of truth conditions, and hence, cannot take a truth value.” (Cappelen & Lepore 2005, p. 6) Even so, in response to the contextualists’ conclusions, Cappelen and Lepore, Emma Borg, Peter Pagin and Jeff Pelletier, and recently Peter Laserson, have all defended a systematic, compositional, semantic theory, that does not deny the contextualist findings. “Even if the output of linguistic activity (i.e., what was said, meant, asserted, claimed) is, as we have argued, context sensitive to the extreme, it does not follow that there is nothing general, systematic, or non-context sensitive to resolve about how we determine what-was-said (or meant, asserted or claimed).” (Cappelen & Lepore 1997, p. 293) Emma Borg also submits that “according to the minimalist (as I construe her) there is an entirely formal route to meaning. This means not only that every contextual contribution to semantic content must be grammatically marked but also that those features contributed by the context must themselves be formally tractable.” (Borg 2007, p. 358) As a matter of fact, (Pagin & Pelletier 2007) develop a classical compositional architecture of interpretation which provides

room for the (outcomes of) pragmatic aspects of interpretation within the composition of meaning. They propose a compositional syntax/semantics architecture which allows, for any analyzed sentence, for modulations on every constituent of its construction-tree and of the corresponding meaning-tree. It is worthwhile to explore their compositional implementation of contextualist insights in some detail.

1.2 Modulated Compositionality

(Pagin & Pelletier 2007) proposes a system of interpretation that employs expressions of a familiar type-theoretical language for the representation of meanings of analyzed sentences of natural language. The language is assumed to be built up from basic terms t , and construction operations σ combining terms into larger structures. It employs a basic interpretation function μ for the terms, and an interpretation $\rho(\sigma)$ of the construction operations which are assumed to be of the right type for the (interpretation of the) terms that they combine. Generalizing over the types of modulation that have been distinguished, a modulation function \mathcal{M} is used that may apply to basic meanings and more involved constructions alike.

The evaluation of the type-theoretical constructions proceeds in two steps: first, the constructions are associated with structured meanings (constituted by the meanings of the constructions' constituent expressions); second, these meanings are evaluated by a proper combination of the meanings' components, in joint combination with any type of interfering modulations \mathcal{M} . The full definition runs as follows.

Modulated Principle of Compositionality (MPoC)

- The structured meaning $\mu'(\sigma(t_1, \dots, t_n), c)$ of the construction of the constituents t_1, \dots, t_n by means of operation σ in context c , is:
 - $\langle \rho(\sigma), \mu'(t_1, c), \dots, \mu'(t_n, c) \rangle$,
 i.e., the ordered $n + 1$ -tuple consisting of the composition function $\rho(\sigma)$ and the structured meanings in c of the constituents of the construction.
- The modulated evaluation E_m of such a structure using modulation function \mathcal{M} in context c , $E_m(\langle \rho(\sigma), \mu'(t_1, c), \dots, \mu'(t_n, c) \rangle, c)$, is:
 - $\mathcal{M}(\rho(\sigma)(E_m(\mu'(t_1, c), c), \dots, E_m(\mu'(t_n, c), c))))$,
 the modulation of the result of the application of $\rho(\sigma)$ to the modulated evaluation of the structured meanings of the constituents in c .
- For an atomic term t , the structured meaning $\mu'(t, c)$ of t in c is $\mu(t, c)$, and the modulated evaluation $E_m(\mu'(t, c))$ of $\mu'(t, c)$ is $\mathcal{M}(\mu(t, c), c)$, the modulation in c of the basic meaning of t in c .

In order to keep things tractable we may proceed on the assumption that the syntactic operation σ is almost always functional application FA , so that the modulated evaluation yields results written, in relational format, as $R(t_1, \dots, t_n)$ or, in functional format, as $R(t_n) \dots (t_1)$.

As one can see, meanings are in the first place the basic meanings of terms, and structures built up from them. The modulated evaluations of these structures are recursively, compositionally, defined, in terms of the modulated application of the modulated evaluations of the constituents of these structures.

To see how the MPoC works, let us inspect three basic examples, first a simple subject-predicate structure.

- (1) Ed smiles.

This sentence can be basically rendered in context c as the structured meaning $\langle \rho(FA), S_c, e_c \rangle$, where $\rho(FA)$ indicates function application, S_c is the basic meaning $\mu(S, c)$ of ‘smile’ in c , and e_c the basic meaning $\mu(e, c)$ of ‘Ed’ in c . The modulated evaluation of this structure under modulation \mathcal{M} in c is $\mathcal{M}(\mathcal{M}(S_c, c)(\mathcal{M}(e_c, c)), c)$. If we assume the context is sufficiently incorporated in the modulations we get $\mathcal{M}(\mathcal{M}(S)(\mathcal{M}(e)))$; and if the three modulations are trivial (the identity function) then the result is $S(e)$, the proposition that Ed smiles. Just what we want (1) to mean in the first place.

The next example has some proper internal structure.

(2) Alfred gave Ed a skateboard.

A structured meaning for example (2) may take the following form:

$$\langle \rho(QIFA), G_c, e_c, \langle \rho(FA), some_c, S_c \rangle, a_c \rangle.$$

For simplicity’s sake I have assumed a rule labeled *QIFA*, which can be taken to involve any form of ‘quantifying in’, plus functional application, according to one’s favourite syntactic/semantic framework. The objects G_c , $some_c$, S_c and a_c are the basic meanings $\mu(X, c)$ of ‘ X ’ in c , where ‘ X ’ is ‘give’, ‘a’, ‘skateboard’ and ‘Alfred’, respectively. If the contextual contributions have been suitably absorbed by the modulation function \mathcal{M} , the modulated evaluation of this structure then will be the following:

$$\mathcal{M}(\mathcal{M}(SOME)(\mathcal{M}(S), \mathcal{M}(\lambda z \mathcal{M}(G)(\mathcal{M}(a), z, \mathcal{M}(e)))))).$$

Any constituent contributing to this construction may be modulated, but, again, if no modulation interferes, so if \mathcal{M} is trivial, we arrive at the following evaluation:

$$SOME(S)(\lambda z G(a, z, e)).$$

Of course, this is the proposition normally assigned to example (2).

In the last example discussed here we will allow for some non-trivial modulation.

(3) Few philosophers are linguists.

The syntactic structure of this sentence can be assumed to be very simple, as well as the structured meaning it is associated with:

$$\langle \rho(FA), few_c, P_c, L_c \rangle.$$

The modulated evaluation consists in the modulation of the proposition obtained by applying the modulation of *FEW* to the modulations of P , the ‘philosophers’, and L , ‘linguists’.

$$\mathcal{M}(\mathcal{M}(FEW)(\mathcal{M}(P), \mathcal{M}(L))).$$

Probably the outermost modulation is superfluous, but it may be evoked if someone deems (3) a platitude that the speaker always employs in contexts like the one in which it is uttered. The modulation $\mathcal{M}(FEW)$ of *FEW* may be needed because this determiner itself is heavily context dependent of course, and it can be argued that its contextual meaning may even get shifted. Assuming that the modulation has effectively incorporated contextual influences both effects can be accounted for. The modulation $\mathcal{M}(P)$ of the philosophers may or should answer questions like:

- (4) Philosophers? What do you mean by ‘philosophers’? Do you mean, so-called, ‘philosophers’? People that act thus? Academically trained philosophers? ‘Real’ philosophers? Philosophers attending the present conference? Philosophers we have have been studying lately? Etc.

Once a suitably modulated interpretation of P has been established, it can contribute to the proposition expressed by an utterance of (3), which, as said, may itself be in need of further modulation as well. Analogous questions can be asked about what L means in an utterance of (3). A modulated interpretation $\mathcal{M}(L)$ may result, which then plays its part, in a compositional way, in the interpretation of (3).

One of the main points taken from an example like (3) is, or so it has been argued, that one doesn’t seem to construe or understand a most general and context independent proposition first, like ‘Few academic philosophers in the entire universe are linguists,’ and then derive from this a more specific, and more informative one, to the effect, for instance, that some of the philosophers at this conference are so-called linguists. Rather, it seems, that in a given context one directly interprets the phrase ‘some philosophers’ as ‘some philosophers at this conference,’ or as any of the other specifications suggested. But then, contextualists ask, what role would the most general (trivial) proposition have to play here in the first place? The minimal answer appears to be, none, really, except that the associated structured meaning hosts a component which, after possible modulation, contributes to the meaning that is expressed.

There is an obvious appeal to the MPoC and it has an obvious weakness. It fits perfectly in the idea that natural language and its interpretation has a recursive structure, ideally established by a homomorphism between the syntactic and the semantic algebra involved. Moreover it leaves plenty of room for all kinds of modulated interpretation. As a matter of fact, too much room, one might want to say. This is the weakness, but not a weakness of the MPoC itself, but of the underlying contextualist conclusions, that have often been left implicit, and now have gone explicit. For, an unconstrained use of the modulation function \mathcal{M} allows, for any expression or utterance, to have any kind of meaning built up from any kind of meanings of its constituents. Even for a principle that, like compositionality, can be claimed to be purely methodological, this is too lenient to be acceptable.

Of course, one may be tempted to put constraints on, or characterize, the modulations that are allowed in practice, or realistic, in an actual linguistic setting or community. One may think of external constraints on \mathcal{M} , naturalistic ones, cognitive ones, or conventional ones, but this seems to be a real sisyphian enterprise. Moreover, doing so could seem to be a false start. First, one may wonder whether, or why, a semantic theory should be designed to be ontologically endorsable, cognitively plausible, or socially acceptable. It is not self-evident that a semanticist should live up to current common standards (if any) in epistemology, cognitive psychology, or the social sciences. More crucially, while the common notion of meaning may appear, upon philosophical reflection, to be inscrutable, or even suspect, so much the worse, it seems, for the very notion of modulation of meanings, let alone for that of constraints on such modulations.

Maybe it be better to take the contextualist findings to heart, and not think of the meanings at issue as something derivative form an independent and idealized architecture, but as the basic building blocks in actual interpretation. In what follows I will argue that such a conception yields a constructive take on the issue. I do want to take to heart the fact that language constitutes a real, actual phenomenon, that it is actually used and plays a role in

real life, and that there is a both cognitively and socially embodied practice of meaning—of language use and understanding. These are commonplace and rather inescapable assumptions, or so it seems to me. They, however, bring along a different view on what compositionality really says, or should be taken to say.

1.3 Live Compositionality

At a certain level of abstraction and idealization we can, and do, speak of meanings as identifiable and distinguishable entities, that allow to be formalized and quantified. I.e., we do speak, formally as well as naturally, about ‘the meaning of’ a certain expression, and wonder and debate about the question ‘how many meanings’ a certain expression has. Obviously some such talk also underlies the formulation of the principle of compositionality, which assumes the very existence of meanings of compound expressions and of their constituents. This need not, and should not, hamper the conviction that these are, indeed, entities that exist (only?) at some level of abstraction and idealization, and that their well-being vaporizes upon philosophical, intuitive or naturalistic reflection. As a matter of fact, this may hold of all objects and properties we are familiar with, or that are known to us. After all, situations and events are negotiable entities, like, upon further inspection, properties, objects, even numbers. In the context of sceptical epistemological arguments David Lewis has put things as follows.

“We know a lot. (...) We have all sorts of everyday knowledge, and we have it in abundance. To doubt that would be absurd.” (Lewis 1996, p. 549)

However,

“(...) it will be inevitable that epistemology must destroy knowledge. That is how knowledge is elusive. Examine it, and straightway it vanishes.” (Lewis 1996, p. 560)

Lewis’ argument in the article mentioned seems compelling, and casts doubt on the qualified assessment of knowledge of things. So much the worse one might say for our claimed knowledge of meanings, and a fortiori for our knowledge of modulations of meanings. Or not? After all, Lewis does not disqualify everyday, unqualified, knowledge. We have all sorts of everyday knowledge of meanings, and we have it in abundance. Upon reflection, it then seems wise to let our theories call on this everyday knowledge, and then, very much in the spirit of the later Wittgenstein, look at the practice of meaning and meaning attribution.

“Die Bedeutung eines Wortes ist sein Gebrauch in der Sprache.” (Wittgenstein 1953, §543)

We can retain the spirit of Wittgenstein’s observation by explicitly relating the principle of compositionality to these matters of use.

Live Principle of Compositionality (LPoC) The *live* meaning of a compound expression is a function of the *live* meanings of its parts and their (*live*) mode of composition.

With this formulation of the principle of compositionality I have deliberately been unspecific about what ‘live’ means. (As a first approximation, I can say that a ‘live’ interpretation is one that the interlocutors, and a suitably informed observer, can agree upon.) I have also abstained, and will abstain in the remainder of this paper, from giving a more specific implementation of the principle in terms of a homomorphism, which would force me to fill out details that require all kinds of philosophical and methodological justifications that are not relevant now. These reservations being made, let us have a look at the constructive aspects of the given understanding of the principle of compositionality. There are two general points

about this definition that may need to be emphasized first, and a third, more substantial one, that will figure as the main subject of the investigations in the next section.

First, notice that if one so chooses to understand ‘live meaning’ as ‘the meaning’ (or ‘literal meaning,’ or ‘linguistic meaning’) then the live principle of compositionality simply, literally, is the generally accepted principle as we have presented it in the beginning of this section. Thus, from a conservative semantic point of view there can be nothing wrong with the principle. Quite the opposite. Such a conservative understanding may itself be in need of an explanation or justification of what kinds of things these literal or linguistic meanings really are—but, being progressively conservative myself, I will not capitalize on this issue.

Second, more importantly, we can, and should of course, understand the principle as one that is tailored to incorporate the contextualist findings. For, any time that it invokes the live meaning of an expression that is not its so-called literal meaning, we can take it to *replace* its modulation given by the \mathcal{M} function in Pagin and Pelletier’s modulated principle of compositionality. Thus the LPoC can be conceived of as a pure notational variant of the MPoC, with, of course, some purported motivation added in terms of the suggestive notion ‘live’. This brings me to the third point.

Third, and now I do want to give some substance to the notion ‘live’, the ‘live meanings’ of expressions are supposed to be their actual interpretations upon their actual use and they can, at worst, be incorrect, or, at best, be intended, correct and justifiable. Here I, again, draw from an everyday, colloquial, understanding of the relevant notions and one that does not purport to be more than that. Of course unclarity, confusion, discussion and misunderstanding may always arise about what is ‘intended’, ‘correct’ and ‘justifiable’, but that’s what we have to live by. I here take again my cue from the later Wittgenstein:

“Die Begründung aber, die Rechtfertigung der Evidenz kommt zu einem Ende; – das Ende aber ist nicht, daß uns gewisse Sätze unmittelbar als wahr einleuchten, also eine Art *Sehen* unsererseits, sondern unser *Handeln*, welches am Grunde des Sprachspiels liegt.” (Wittgenstein 1984, §204) “Unser Fehler ist, dort nach einer Erklärung zu suchen, wo wir die Tatsachen als ‘Urphänomene’ sehen sollten. D. h., wo wir sagen sollten: *dieses Sprachspiel wird gespielt.*” (Wittgenstein 1953, §654)

The point is that, pending further investigations, most live interpretations are simply clear, and good as they are. While the principle of compositionality is meant as a methodological principle, and even while the notion ‘live’ has been left unqualified, it nevertheless naturally suggests two principles that can be brought to bear on ‘live’ examples, that is, on cases that have been discussed in the literature and that are considered to be ‘natural’. In the first place the principle implies that live meanings of expressions, and, more importantly, of their constituent expressions, are actually *present* on an occasion of use. In the second place, it suggests that past meanings—if one wants: ‘literal’ meanings—are absent, when they are substituted by more suitable live meanings. These are two intuitions or even predications that are open to empirical investigation, even if, in a paper like this, only virtually, or only in thought experiment. So what I will do in the next section is to test the idea that the natural actual (live) meanings of expressions are indeed present on their occasion of use, and not the meanings that might, e.g., literally, have, but do not actually have. The next section thus puts the following two ‘predictions’ to the test.

- Live meanings are present.
- Past meanings are absent.

2 Live Meanings

In this section the live principle of compositionality is demonstrated to apply to a number of cases familiar from the literature, and some of my own making. It will not do to attempt a full analysis of the cases here, but I will take them to indicate the presence of live meanings, and the absence of past meanings. Since most of the cases already figure on the semanticist's agenda, they hopefully need not too much of introduction and examination.

The first case relates to nominal or verbal predications, by means of an utterance of, e.g., 'The car is red.' About such predications François Recanati has critically observed:

"(...) in most cases the following question will arise: what is it for the thing talked about to count as having that colour? *Unless that question is answered, the utterance ascribing redness to the thing talked about (John's car, say) will not be truth-evaluable.* (...) To fix the utterance's truth-conditions, we need to know something more—something which the meanings of the words do not and cannot give us: we need to know *what it is for that thing (or for that sort of thing) to count as being that colour.* What is it for a car, a bird, a house, a pen, or a pair of shoes to count as red?" (Recanati 2005, p. 183)

In many cases of use it is hard, if not impossible, to precisely define what kind of 'red' is meant on a specific occasion, and, actually, it normally is quite irrelevant to do so. (Irrelevant, suspending philosophical or linguistic reflection.) However, Anne Bezuidenhout has brought up a case in which situations serve to decide about possible, relevantly distinct, readings of 'red.'

Case 1 (Bezuidenhout 2002, p. 107)

"We're at a county fair picking through a barrel of assorted apples. My son says

(5) 'Here's a red one,' [Example numbering is mine, PD]

and what he says is true if the apple is indeed red. But what counts as being red in this context? (...) But even when it is an apple that is in question, other understandings of what it is to call it 'red' are possible, given suitable circumstances. For instance, suppose now that we're sorting through a barrel of apples to find those that have been afflicted with a horrible fungal disease. This fungus grows out from the core and stains the flesh of the apple red. My son slices each apple open and puts the good ones in a cooking pot. The bad ones he hands to me. Cutting open an apple he remarks:

(6) 'Here's a red one.'

What he says is true if the apple has red flesh, even if it also happens to be a Granny Smith apple."

A typical contextualist conclusion from examples such as these is that 'red' (as for apples) and also 'sorting' (as for red apples) typically has an interpretation that heavily depends on context. However, such, entirely correct, conclusions tend to obscure a typical and semantically systematic fact that the live principle of compositionality intends to lay bare. The point is that whatever meaning 'red' or 'sorting' is meant to play in a concrete use of example (5 or 6), it does play a non-negotiable role in the construction of the meaning of the whole utterance, and this contribution can be reinforced by subsequent anaphoric means. So while Anne's son, when going through the barrel, may be right when uttering (6), it would be very odd indeed, if he were to claim (7).

(7) ?Here is again a red one. Like yesterday, at the county fair.

Intuitively, Anne's son is not holding the same kind of red apple like he did yesterday, so there is something very odd about the son's use of 'again' in (7). Anne herself, because she is seeing her son is indeed holding a Granny Smith, might also have countered with either of the following two replies, which, abstractly speaking, constitute a truth-conditionally felicitous follow up of (6):

(8) ?Yes, it is red; but look: it is green!

(9) ?No, that one is not red, it is green.

In the circumstances described, however, these would be like linguists' jokes, one almost funny, the other rather sick. One may explain this, and rightly blame these reactions, pointing out that they involve violations of gricean-style maxims of relevance or cooperativity. But in order to do so, one has to draw from the assumption that the live meaning of 'red' in (6) is not the live meaning of 'red' in (8) or (9). To mark the reactions by means of the latter two utterances as deviant one has to assume that they elaborate on a meaning of 'red' absent from the utterance of (6) (while present in the utterance of 5). (Notice, moreover, that the distinction between the two readings of 'red' in the present discussion of this case is contextually infected as well. It is not difficult to come up with a case in which the distinction relevant here is immaterial.)

Case 2 (Kripke 1979, p. 14/15)

"Two people see Smith in the distance and mistake him for Jones. They have a brief colloquy:

(10) "What is Jones doing?"

"Raking the leaves."

"Jones," in the common language of both, is a name of Jones; it *never* names Smith. Yet, in some sense, on this occasion, clearly both participants in the dialogue have referred to Smith, and the second participant has said something true about the man he referred to if and only if Smith was raking the leaves (whether or not Jones was)." "In the example above, Jones, the man named by the name, is the semantic referent. Smith is the speaker's referent, the correct answer to the question, "To whom were you referring?" "

Notice that Kripke, as a third person figuring in this case, understands the second participant as having said something true about Smith, so he might have interfered in the colloquy and have uttered:

(11) True, but he is not Jones.

With an interjection such as in (11), Kripke would have picked up the live referent of 'Jones', which is Smith, and referred back to him with the pronoun 'he'. He would have re-established the past, and 'official', interpretation of 'Jones' by reusing the name 'Jones'. Also, assuming that the real Jones is as a matter of fact not raking the leaves, Kripke might have interfered with:

(12) False, that is not Jones.

With an interjection like that in (12) Kripke could have used the pronoun 'that' to refer demonstratively to the guy who is raking the leaves, Smith, while 'Jones', as usual, would have referred to Jones.

Now, since the speaker has mentioned Jones himself, Kripke might as well have used a pronoun for him, as in the following reply.

(13) False, that is not him.

In replying thus, ‘that’ would again have been used as a demonstrative, and the pronoun ‘him’ could be conceived to be coreferential with the term ‘Jones’ as used by the first speaker, according to Kripke’s picture of the common language. The interesting situation arises when Kripke agrees with the speaker about the situation and construes ‘Jones’ as denoting Smith. The live principle of compositionality then predicts that Jones himself is not available as a live antecedent for the pronoun, thus the following kind of reply on the side of Kripke would appear to be ruled out.

(14) *True, but he is not him.

In this hypothetical reply, ‘he’ would apparently be intended to denote Donnellan’s so-called speaker’s referent, and ‘him’ to denote Kripke’s own semantic referent. According to the live principle of compositionality this would not correspond to a sensible reply, and indeed a reply with (14) sounds quite bizarre. In Donnellan’s and Kripke’s terms, ‘Jones’ may have a semantic referent and a speaker’s referent but when the two are different, the live meaning cannot be both.

Very much the same observations can be made about a case which is very similar to the previous one, the difference being that a definite description is used, not a proper name.

Case 2’ (Kripke 1979, p. 7)

“Someone sees a woman with a man. Taking the man to be her husband, and observing his attitude towards her, he says,

(15) “Her husband is kind to her,”

and someone else may nod,

(16) “Yes, he seems to be.”

Suppose the man in question is not her husband. Suppose he is her lover, to whom she has been driven precisely by her husband’s cruelty.”

The scenario allows for the following alternatives. (Kripke 1979, p. 21)

(17) *B*: “No, he isn’t. The man you’re referring to isn’t her husband.”

(18) *B*: “He is kind to her, but he isn’t her husband.”

The reaction from *B* that Kripke imagines in (17) can be explained if we assume that ‘he’ is intended to refer to the woman’s actual husband, while there is obviously a man present who is not her husband, and whom the speaker apparently refers to. The reaction from *B* that Kripke imagines in (18) simply picks up this intended referent as the live meaning of ‘her husband.’ Notice, however, that it would be pretty awkward again, as with example (14), if *B* were to react as follows.

(19) *B*: *Yes, but he is not him.

The confirmation ‘Yes’ would indicate that *B* agrees with the lover as the live referent of ‘her husband’, as in his agreement in (18). But then this means that the woman’s real husband does not play a part in *B*’s rendering of (15). Thus, even though *he* (the lover) isn’t her husband, so *he* [the lover] is not *him* [the husband], *B*’s appreciation of (15) does not license him to respond as in (19).

Similarly, assume that the lover is actually the husband’s neighbour, and that *B* knows this. Then it would be fine for him to respond with (20), but not with (21).

- (20) *B*: No, *he* is his neighbour.
 (21) *B*: *Yes, but *he* is his neighbour.

Uttering (20) indicates that *B* construes (15) as involving the real husband, picked up with the pronoun ‘his’, while he may use ‘he’ to ostensively refer to the lover seen with the woman. However, uttering (21) would indicate that *B* accepts the lover as the speaker’s referent of ‘her husband’, but then ‘his neighbour’ can only be understood as her lover’s neighbour, and this yields, again, a bizarre result.

The following example drags along with it a whole series of cases, and which can be taken to show to what extent discussions about phenomena like presupposition or discourse reference rely upon a notion of present meanings.

Case 3 “Quantified structures of the form $DET(A, B)$ presuppose a domain *A* and contribute discourse referents $(A \cap B)$ and $A \setminus B$.” (Free after Geurts & van der Sandt 1999; Moltmann 2006; Nouwen 2003, among many others.)

It is often assumed that quantified structures of the form $DET(A, B)$, where *DET* is a determiner or generalized quantifier, and *A* and *B* are set denoting expressions (‘restrictor’, and ‘(nuclear) scope’, respectively), carry an implication or presupposition about the determiner’s domain, i.e., the restrictor’s denotation. There is the old aristotelean insight that this term carries existential import, and in logical and linguistic treatments of quantifiers it has been argued that such a use of a term presuppose its domain as something that is given or retrievable in a discourse in which it is used. Moreover, it is also assumed that such structures may provide antecedents for subsequent (plural) pronouns that may denote the *A*’s, the *A*’s that are *B*, or even the *A*’s that are not *B*. No matter how such ‘domain presuppositions’ are formally analyzed, or how the potential to supply antecedents for subsequent anaphoric reference is implemented, one thing seems to be so obvious that it hardly deserves to be mentioned. The live presupposition of the use of such a term and its live anaphoric potential derive from its live, i.e., present, meaning.

Consider again example (3):

- (3) Few philosophers are linguists.

Let us set aside all interesting questions one may have about the meaning of ‘few’ and of ‘linguists’, and let us focus on the philosophers. If (3) is used while taking ‘philosophers’ to apply to those who use lots of involved unwordly speech, then, if there is a domain presupposition, it is that there are those who use lots of involved unwordly speech; if it is used with the term ‘philosophers’ applying to trained and graduated academic philosophers, and if there is such a presupposition, it is that there are trained and graduated academic philosophers around, or mentioned in the discourse; if it is used to apply to philosophers who gave a talk at the present conference, and if there is a domain presupposition, then the presupposition applies to those. It appears to be difficult to argue that this would *not* be the case. How could anyone take an utterance of (2) to express a proposition about a certain type of philosophers, and presuppose something about another type?

Moreover, consider a possible continuation of an utterance of (2) with something like (22):

- (22) They are artists / biologists / unaware of Chomsky’s work.

In a continuation of (2) with an utterance of one of (22), the pronoun ‘they’ can be used to refer to the philosophers, the philosophers that are linguists, or even the philosophers that are not—at least, that is the common opinion in the literature. But of course, these can only be meant

to be the philosophers (that are linguists, or not linguists) as understood from the utterance of (2), and it involves the philosophers, so-called, being, or not being, linguists, as ‘linguists’ is understood from the utterance of (2). That is to say, the presupposition, if any, of an utterance of (22) draws from the live meaning of ‘philosophers’ and ‘linguists’ established by a previous utterance of (2). I dare claim that also, and in particular, in all discussions in the literature about examples such as these, such an assumption is taken for granted by all participants in the discussion. (Maybe no textbook in formal semantics would be understandable if not under the assumption that it systematically generalizes over occurrences of object language expressions assumed to have the same live meanings—that is, if not indicated otherwise.)

Something ironic happens here which might seem methodologically paradoxical for a formal semanticist. For, if an expression itself is reused in natural language, it *does* allow for the possibility that it is used with a different interpretation. People do after all say things like “You have philosophers and philosophers,” and this is quite understandable, and they can say “The dog bit the dog.” without implying that the dog bit itself. Returning to example (2), a different interpretation of ‘philosophers’ thus may arise if one reuses the term, as in a continuation of (2) with an utterance of one of (23):

(23) Philosophers are artists.

Linguistic philosophers are biologists.

Philosophers that are not linguists are unaware of Chomsky’s work.

The three continuations correspond to the types of discourse referents that an utterance of (2) may have appealed to. However, with an utterance (23), and not with that of (22), one *might* presuppose or introduce a different concept of a philosopher, a live meaning of ‘philosopher’ different from the live meaning that its use in (2) had—even though this appears to be difficult. If one is not convinced that an iterated use of a term may come with a different interpretation, while a pronoun may not allow for such a reinterpretation, try to convey that you have philosophers and philosophers by uttering “You have philosophers and them.” I think you will not succeed. One can say, however: “You have philosophers and philosophers. They are not them.”

The next case describes a portion of relatively recent American history, and summarizes what one can say about it, as generally agreed upon in the semantics literature.

Case 4 In 1969, January 20-th, Richard Nixon succeeded Lyndon B. Johnson as the president of the United States, so that after eight years of democratic rule (with John F. Kennedy and Johnson), an eight year period of republican rule started (with Nixon and Gerald Ford). With hindsight, the following sentence, could have been truthfully uttered in 1969.

(24) The last eight years the president was a democrat. The next eight years he will be a republican.

Example (24) could have been used, in 1969, to state something true, if the noun phrase ‘the president’ was rendered, or read, as whoever has been residing in the oval office over a certain stretch of time. On this reading it would merely serve to sum up the outcomes of the presidential elections over some sixteen years. The past eight years a democrat was president and the next eight years a republican would be. Alternatively, example (24) could have been rendered as being about the actual president, in 1969, Johnson. On this reading it would state that Johnson had been democrat the past eight years, and, surprisingly, would turn out republican the coming eight years.

Notice, that, of course, it may both have been true that Johnson was a democrat the

past eight years, and that a republican would be the president the coming eight years, as was actually the case. However, this does not appear to be a situation that would render example (24) true. If the pronoun ‘he’ in the second sentence of example (24) would pick up the president from the first sentence, it would do so under the interpretation that ‘the president’ had there—i.e., its live meaning. Thus, if ‘the president’ would have been read as Johnson, then so would ‘he’, and if ‘the president’ would have been read as whoever, in any of these sixteen years, had won and would win the elections, then so would ‘he’ be read. The pronoun would *not* pick up some underspecified specification of the president under which it could be used, at will, referentially on its first occurrence, and attributively on the second. The live interpretation of the pronoun has to conform to the live interpretation of its antecedent.

Case 5 (Dahl 1973, p. 83/4)

“Consider the following sentence:

(25) John realizes that he is a fool, but Bill does not, even though his wife does.

One of the readings of (25) is the following:

(26) John realizes that he is a fool, but Bill does not realize that he – Bill – is a fool, even though his wife realizes that he – Bill – is a fool.”

Dahl’s example provides a very vivid illustration of the LPoC. First of all, notice that, if the pronoun ‘he’ in the sentential clause ‘John realizes that he is a fool’ is simply understood as John, upon what is called a strict reading, then it seems example (25) cannot but claim that John realizes that John is fool, and that Bill does not, but his wife does, realize this, i.e., that John is a fool. A more likely interpretation, the so-called ‘sloppy’ reading, evolves if ‘he’ is understood as a subject bound variable, to the effect that an utterance of the first sentence of (25) is taken to state that John is aware of being smart. Upon this rendering of the pronoun, the most likely interpretation of the continuation in (25) is that Bill does not realize that he, Bill, is smart, while his wife does, i.e., realize that she is smart. This interpretation thus fully, and directly, complies with the LPoC.

The reading that Dahl himself mentions in case (5) may be a bit harder to get, and it is even one that some claim the sentence not to have. The reading is naturally obtained, though, if what Bill does not realize, upon the sloppy reading of ‘he is a fool’ in the interpretation of the first sentence, is itself bound to Bill, so that, also on this sloppy interpretation of the first sentential clause, the second may deliver a bound interpretation. Upon this understanding, Bill is said to be not aware of being smart, even though his wife does realize he is. What Bill’s wife does is realize, on a bound interpretation, what Bill does, viz., realizing what John does on a sloppy interpretation. Indeed, in the way sketched, this interpretation seems to require more ‘work’, or processing, but it yields a natural understanding of the whole sequence (25), notwithstanding the misgivings people may have about it.

It is interesting to see that a reverse ‘reanalysis’ of example (25) does not seem to be forthcoming. Once ‘he’ is understood as John, and what Bill fails to realize is that he, John, is smart, the continuation with ‘his wife does’ does not naturally render any interpretation according to which she realizes Bill, or she herself, is smart. It seems everyone agrees with this observation, and it naturally falls out of the LPoC analysis of the case at hand. What is present is the live interpretation of the previous discourse in which John being smart is at issue, and no constituent contributes a new issue that Bills wife is said to realize.

Case 6 (Nunberg 1979, p. 149)

“For example, a restaurant waiter going off duty might remind his replacement:

(27) The ham sandwich is sitting at table 20.”

It appears to be clear to most of us that the protagonist in case (6), by uttering (27), refers to a person, not a ham sandwich, so that the live meaning of ‘the ham sandwich’ is understood to be someone who, e.g., ordered, or has been served, a ham sandwich—not the ham sandwich. Thus, a subsequent observation, later, made by (28) seems to be fine, while claiming (29) sounds odd.

(28) The ham sandwich wants to pay. He is in a hurry.

(29) ?The ham sandwich wants to pay for it.

Notice that if the replacement of the protagonist is new to the location, and not familiar with the colloquial way of referring to customers, an utterance of (28) could be backed up by uttering an instance of (30).

(30) The ham sandwich is the person who ordered (has been served) the/a ham sandwich.

which would hopefully be revealing to the replacement. However, even though the ham sandwich is taken to be the person who ordered the ham sandwich, and even though it trivially holds that the person who ordered the/a ham sandwich is the person who ordered it, one could not quite felicitously state (31) in stead of (30).

(31) ?The ham sandwich is the person who ordered it.

?The ham sandwich is the person to whom it has been served.

The reason is that while the live meaning of ‘the ham sandwich’ is the person who ordered (has been served) a ham sandwich, and thus is present, the ham sandwich that is ordered (has been served) is absent in the envisaged utterance of ‘the ham sandwich’ in (30) or (31). (Notice that the examples (29) and (31) are totally fine, of course, if the pronoun ‘it’ is used to refer to a demonstratively present sandwich.)

In my characterization of the examples (28–31) I have focused on the live meaning of the full noun phrase ‘the ham sandwich’, but, as Nunberg points out, the transfer should originally be attributed to, as I call it, the live meaning of the predicate ‘ham sandwich’. “(...) there are a number of reasons for concluding that the transfer here takes place on the common noun meaning—that is, that this is a case of meaning transfer, rather than reference transfer. (...) the transfer actually takes place at the level of the common noun, which contributes only a property of persons (...).” (Nunberg 1995, p. 115–6) Thus, understanding ‘ham sandwich’ as a predicate applying to persons, in stead of to food, the construction in (32) appears to be fine.

(32) The ham sandwich that stumbled in the toilet wants to file a complaint.

A construction like we find in (33), however, is problematic.

(33) ?The ham sandwich that fell on the floor in the kitchen wants to file a complaint.

Of course it is not unusual that, if a person has been served a ham sandwich that has fallen on the floor in the kitchen, he (i.e., the person) next wants to file a complaint. However, this reading of (33) seems to force us to read ‘ham sandwich’ in both ways: as a piece of food that fell on the floor, and as a person to whom it has been served, at the same time. With only one live meaning of ‘ham sandwich’ at our disposal, we feel inclined to either conclude that the customer fell on the floor in the kitchen, or that pieces of food are about to complain about that. Neither reading is very plausible. Needless to say that there is nothing wrong with the

sentence (33), neither are we incapable of assigning it some *interpretation*; however, the two most likely ones are very odd indeed.

Case 7 (Nunberg 1979, p. 148)

(34) The newspaper weighs five pounds.

(35) The newspaper fired John.

Obviously, the pack of paper that weighs five pounds is not an entity that is capable of firing people; or, the organization that fired John is not something that has a weight that one expresses in pounds. Obviously, ‘the newspaper’ should have as its live meaning the pack of paper in an ordinary use of (34), while it would normally be the publisher in one of (35), and this is what explains (36) and (37) to be odd.

(36) The newspaper weighs five pounds. ?It fired John.

(37) ?The newspaper weighs five pounds and fired John.

Sure enough, as also imagined by Nunberg, one can focus on the newspaper that is lying on the table, and say ‘They fired John,’ and ‘And it weighs five pounds today.’ In that case one and the same object may both serve to establish a live referent for ‘they’, i.e., the publisher of the newspaper, as well as directly figure as a live referent for the pronoun ‘it,’ the hard copy on the table as an instance of today’s edition. But in that case the newspaper as an organization is present both as a live meaning and directly, demonstrably, present in the form of the hard copy.

Observe that, moreover, with some imagination, we *can*, if need be, make sense of the following statement.

(38) ?There are five newspapers lying on the table, and John is fired by two of them.

Surely this really requires some forceful conceptual coercion, and, no doubt, *some* will deem this coercion unacceptable, while *others* will not complain. For notice that making sense of (38) anyway requires (making sense of) live meanings of ‘newspaper’, ‘lying on’ and ‘firing’ that allow the latter two to apply to the first kind of thing. This, one might say, is where some people give up, and others don’t.

Case 8 http://en.wikipedia.org/wiki/The_Brothers_Karamazov

“Although Dostoyevsky began his first notes for *The Brothers Karamazov* in April 1878, he had written several unfinished works years earlier.” “Dostoyevsky spent nearly two years writing *The Brothers Karamazov*, which was published as a serial in *The Russian Messenger* and completed in November 1880.”

We may conclude:

(39) Dostojevsky began *The Brothers Karamazov* in 1878. He finished it in 1880.

As a matter of fact, I got a copy of *The Brothers Karamazov* from my grandmother early winter 1977, and I read it over the Christmas break. It is true to say that:

(40) I began the book by the end of 1977, and finished it ten days later.

Books are a philosopher’s nightmare. Not only should they be read and written, but they come in editions, versions, hard copies, in thoughts and in bookshops. Not only are their identity conditions hard to settle, conceptually, practically and legally, they also easily turn into events, as the above cases are meant to show. Books can be written, published and completed (and stolen from the library). Thus, as can be seen from the examples (39) and

(40), the noun ‘*The Brother Karamazov*’ can be taken to denote the event of writing the book, which Dostojevsky started in 1878, and an event of reading it, which I for instance completed in 1978. However, it cannot be used to denote both events at the same time. It appears to be particularly odd to conclude, from (39) and (40):

(41) ?Dostojevsky began *The Brothers Karamazov* in 1878. I finished it in 1978.

What I read is what Dostojevski wrote, *The Brothers Karamazov*. So what he began in 1878 is what I finished in 1978. Or not? What he began was writing *The Brother Karamazov*, and what I finished was reading it, so not the writing of it. So what Dostojevski began in 1878 is not what I finished in 1978, and upon the most common understanding of (39) and (40), it does not allow one to conclude to (41). We find that what feeds the compositional interpretation of utterances like (39) and (40) is, as the contextualist would have it, a highly context-dependent interpretation of a constituent expression, but once more we find that it does act as genuine, live, constituent of the interpretation of the whole.

The following case is imaginary, even in fiction.

Case 9 Clark Kent has revealed, maybe even shown, to Lois, a day before, that he can fly, to her great surprise, of course. One may report:

(42) Yesterday Lois Lane discovered that Clark Kent can fly.

If one is familiar with what is really going on in the (fictional) series of comics or movies, one may be quite unwilling to accept a continuation of (42) with (43).

(43) ?Of course, she already knew that.

The reaction with (43) is marked because one discovers things one did not know before, so Lois could not yet have known what she subsequently discovered. Notice that a continuation with (43) is not totally out, however, because one may use ‘know’ in the sense of ‘in a sense ‘know’’, and thus one may, with an utterance of (43), claim that, for instance, Lois already had this vague suspicion that Clark Kent was capable of much more fancy things than just writing dull reports for the Daily Planet, and maybe fly. (Like, e.g., Superman!) The utterance then can be used to state that such a hunch of Lois’ has suddenly become plain knowledge.

However, if the utterance of (43) relates to Lois’ ordinary, plain knowledge, it is really odd, or even outright in contradiction with a preceding utterance of (42). What Lois then is said to have discovered is something which, thus, she is said not to have known before, in contradiction with (43).

Even so, it is not contradictory to observe that Lois indeed already knew that Clark Kent can fly, upon a different interpretation of the clause ‘that Clark Kent can fly,’ viz., as one involving Clark Kent known as Superman.

(42) Yesterday Lois Lane discovered that Clark Kent can fly.

(44) Of course, she already knew that Clark Kent can fly (...)

With such a ‘reinterpretation’ of ‘Clark Kent’ in the sequence (42–44), the sequence seems perfectly fine. Sure enough, such an utterance of (44) may require some clarification, as with (45).

(45) (...) because, she knew that Superman can fly, and Superman is Clark Kent.

The utterance of (44) can be felicitously understood, not by another rendering of the type of knowledge involved, but by a different rendering of Clark Kent, as Superman. Notice that this is possible only because the same (sub-)sentence, “that Clark Kent can fly” is

restated, and because it may be interpreted differently on its second occurrence. In contrast, the demonstrative pronoun ‘that’ in (43) does not allow for an analogous reinterpretation of the original (sub-)sentence, because it can only be meant to pick up the live meaning of the (sub-)sentence in (42), and upon this interpretation Lois is claimed not to have (really) known the very same thing before.

I believe the observations about (43–44) are intuitively clear in the absence of, or even thanks to, any discussion of these examples in theoretical terms, like that of ‘de dicto’ and ‘de re’, or ‘modes of presentation’. Evidently, if one is, naturally, puzzled by the observations, some at least modestly theoretical analysis may evolve of what it then is that is discovered, and what is known, by Lois, hence there is nothing intrinsically wrong or counterintuitive about the urge to analyze. Even so, the primary conclusion, given what we know about Lois and Clark, is that (43) is odd in the context of (42), while (44) is not. So even without trying to pin down what the contributions of the embedded sentences exactly are, they apparently must be the live meanings on their occasion of use.

It may be both illuminating, as well as a further distraction, to see that one might supplement the utterance of (44) in response to that of (42) with:

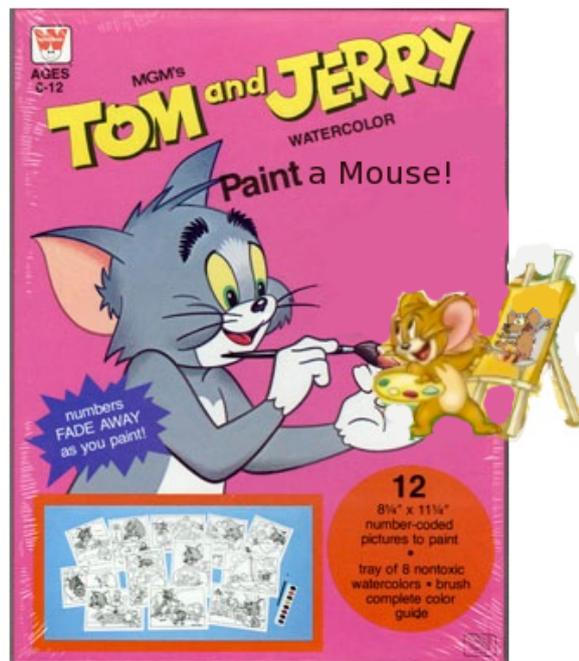
(46) But she did not know that Clark Kent is Superman.

or, even worse, with:

(47) For she did not realize that Clark Kent is Clark Kent.

An utterance of the latter sentence can be understood under a conception of the referent of the first occurrence of Clark Kent in (47) as that of Clark Kent as he is conceived of in the utterance of (42), and a conception of the referent of the second occurrence with that of Clark Kent as he is conceived of according to the utterance of (44); i.e., as the reporter of the Daily Planet and Superman, respectively. I believe an utterance of (47) is intuitively very fine, even though people may think it extremely puzzling. (In the presence of an analysis.)

Case 10



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Case (10) has been shopped by a student of mine so as to display a reading, deemed impossible, of sentence (50) below. First notice that in this cartoon, (48) and (49) are both true on a most obvious reading.

(48) Tom paints a mouse.

(49) Jerry paints a mouse.

For, there is a mouse, Jerry, and Tom is (body-)painting him, and, Jerry is creating a mouse on linnen, out of his imagination. However, people are hesitant to conclude to (50), as pictured in case (10):

(50) Tom and Jerry paint a mouse.

As a matter of fact, I myself have come up with the displayed reading, as an example of one that the sentence does *not* have. However, it has become clear that at least some people have no problem with it, and that most at least get the joke. Now, of course, one may quarrel whether the joke is a joke because there is really something *wrong* with example (50) in view of case (10), or that the joke is that it is just *unexpected*. To me, it seems, it is not the task of a formal semanticist or a philosopher of language to decide on *that* issue. Rather, we may conclude that at best it is up to us, as teachers, say, to *decide* (sic) whether such a mixed reading of ‘paint’ is allowed to be a live one or not. In line with the previous section, we may conclude that the intended reading, rejected or not, is negotiable.

What I hope the discussion of these ten cases makes clear is that, first, there are obvious interpretations of constituent expressions of full sentences which are heavily context dependent, and, second, that these are present, live, while other possible interpretations are not. The cases thus supply support for a live interpretation of the principle of compositionality, as stated in the LPoC. This observation also complies with the fact that what actually *are* the live interpretations of constituent expressions can be a matter of discussion—or that they are negotiable, as we may as well say. This, latter, fact, can be taken for granted not just in literary, legal, or philosophical practice, but just as well in our very daily practices.

3 Live Methodology

3.1 Abundant Elusive Meanings

With the live principle of compositionality I have formulated an understanding of the principle of compositionality that formally suits the principle as it is generally accepted, or debated, and that nevertheless allows for an intuitive accommodation of contextualist findings. It does not come for free, though. For, it at least challenges us to rethink the ideal of a minimalist semantics, according to which a sentence (not: utterance) can be assigned propositional or truth-conditional content independent of its context of use, and one which plays a substantial role in the determination of the content conveyed by all or most utterances of it. The live principle purports to characterize live meanings of utterances, in terms of the live meanings of their constituents, and does by itself *not* abstract away from contexts of use. Rather, it purports to characterize meanings or sentential contents as a property of sentences or expressions *used* in a context, and as the cases above may serve to suggest or show, these are not in the first place characterized by context independent meanings.

It is worthwhile to notice that, besides the acknowledged pervasive role of contexts of utterances, there is no real departure from traditional concepts of meaning and use. Even though it has not been said above, nothing stands in the way of characterizing contents of

descriptive sentences or utterances in terms of truth-conditions, and for my part this would be the methodologically most sound way of approaching things. And once the (live) truth-conditions of an utterance have been determined, other pragmatic factors may kick in to establish or describe what a person may do, or convey, or achieve, with the utterance with that (live) meaning. This part of the story suits the classical picture quite well. The difference with more traditional conceptions of the semantics/pragmatic interface resides in the fact that although the LPoC does allow for a notion of ‘literal’ meanings of expressions independent of context, it does not attempt to phrase their live meanings as a function from these ‘literal’ meanings, but from the live meanings of their constituent expressions. True enough, the live meanings of the basic constituent expressions may functionally derive from the ‘literal’ meanings that these can be taken to have, so that after all, formally, the live meanings of compound expressions can be ultimately derived from the ‘literal’ meanings of their basic constituent expressions, but this would rob the LPoC of its true intuitive intent.

The LPoC can be motivated by the insight that, on the one hand, natural language is good as it is, that it normally functions well, and that we have sufficient knowledge of the meanings of expressions used, while, on the other hand, we think this should not lead us to think or postulate that there exists an independent realm of meanings. Willard van Orman Quine famously observed:

“Uncritical semantics is the myth of a museum in which the exhibits are meanings and the words are labels. (...) The primary objection persists even if we take the labeled exhibits not as mental ideas but as Platonic ideas or even as the denoted concrete objects.” “Seen according to the museum myth, the words and sentences of a language have their determinate meanings. To discover the meanings of the native’s words we may have to observe his behavior, but still the meanings of the words are supposed to be determinate in the native’s *mind*, his mental museum, even in cases where behavioral criteria are powerless to discover them for us. When on the other hand we recognize with Dewey that “meaning (...) is primarily a property of behavior,” we recognize there are no meanings, nor likenesses nor distinctions of meaning, beyond what are implicit in people’s dispositions to overt behavior.” (Quine 1968, p. 186/187)

However, this does not amount to saying that we cannot make sense of the notions of ‘meanings’, ‘contents’, (...) that we, after all, talk about without problem, and that also serve as useful methodological tools in formal, empirical and philosophical analyses of natural language. On the contrary. But by the end of the day, the tools or the roles they play, have to be explained—not as insuperable inalienable, and unquestionable entities in our minds, or in a third realm of meanings—but in terms of their actual use, or of the functional role that they play in the live of (verbal) agents in their actual (phenomenological, social and ontological) and linguistic (formal, mental and lexical) appearance.

So, even if I do not, or do not aim to, supply independent identity conditions on meanings, the fact remains that my discussion of all of the above cases draws from some notion of (differences of) meanings that I hope we can make sense of. These meanings are meant to serve as auxiliary tools in the works of both empirical and theoretical semanticists, for we do believe, and indeed see, that there are structural, semantic, properties of utterances that they help to pin down. My descriptions of what might go on in each of the cases discussed above employ notions like coreference, coercion, ellipsis, notions which figure in a web of obviously semantic terms. (A few more can be found a bit later in this section.) Of course, a description of semantic phenomena, no matter how pragmatically infected they are, cannot do without a

proper semantic vocabulary.

3.2 Two Tenets of Formal Semantics

The main import of the LPoC is obviously given by the term ‘live’, which, like I said above, I have deliberately left rather unspecified. The term figures in the principle as a term of art, in the sense of the later Wittgenstein, that is, in its usual sense, with its own ‘live’ meaning. Like I also said, this may leave one to wonder whether this does not imply that the principle may let anyone go with anything. I hope it may be clear I think this is not the case. On the contrary. The ‘live’ interpretation of the LPoC itself saddles those interested in the meaningful use of language with quite a substantial task: that of bringing to light how people manage to interpret utterances that are intended to be meaningful. Surely the LPoC, like the very original formulation of the principle of compositionality, itself already lays bare a general format of meaningful linguistic construction work.

All linguistic structure that has been brought to light by linguists and more in particular semanticists still lies there, most of it at least, as a body of almost undeniable evidence. We need not think of the revealed structures as actual realities, lying there for us to grasp and make mathematical sense of, but as structural patterns in our linguistic behavior, patterns that we adapt to—not necessarily, but contingently and practically. For denying that there exists (linguistic) rules of such and so kind, over and above the tendencies in our behavior, does not imply the unreality or irrelevance of any of the linguistic observations and generalizations made about that behavior or about our inclinations. What I have said at best serves to qualify them. Qualify them in the sense that they (are intended to) describe how we practice language, and how we refer, and predicate, and make generalizations, abstractions and idealizations ourselves. And then indeed, it is very often methodologically convenient to state these observations and generalizations in terms of models, and the more mathematical models figure as the more transparent models, for the working linguist. However, notice that such models then constitute the semanticists reality, not (necessarily) that of the modeled agents.

Besides compositionality there are at least two basic tenets which one may adhere to as a heuristic guideline, and which serve as point of view from which significant regularities in our verbal behavior can be detected. They serve to bring to light well-chosen, and motivated, patterns according to which we apparently do structure our verbal behavior. The tenets generally take the form of slogans, which therefore should not be taken to be dogma’s, but rather as the statements of a perspective from which general characteristics of meaning come visible. (Of course, other perspectives and tenets are equally viable, significant, and productive.)

The first, I believe very productive, tenet is that of truth-conditionality.

Tenet 1 (Truth-Conditional Semantics) The meaning of a sentence is given by the conditions under which it would be true; the meaning of subsentential expressions resides in their contribution to the meanings of the sentences in which they occur.

Frege introduced truth values as the referents of sentences and propagated meanings as determinants of referents, and he has obviously worked in the spirit of this tenet. (Frege 1892) A statement very close to it can be found in the early Wittgenstein: “Einen Satz verstehen, heißt, wissen was der Fall ist, wenn er wahr ist.” (“To understand a sentence means knowing what is the case in case it is true.”) (Wittgenstein 1922, 4.024) The tenet has been further motivated, and cashed out, in the second half of the 20-th century, in the work of Donald Davidson and Richard Montague and many of their followers. (Davidson 1967; Montague

1974)

I probably don't need to say much about the viability and productivity of the tenet of truth-conditionality, but it may serve our purposes to emphasize two points. First, the tenet is intuitively plausible in the sense that one can focus on a prime use of language as that of being informative about the world. The main question (and for some: the only) then is, if a sentence is supposed to tell me what the world or situation is like, I need to know what the world or situation should be like if the sentence were true. The linguistic work hinted at above reveals that natural languages have sophisticated means to serve this descriptive function. Second, together with the principle of compositionality, the tenet may serve in an explanation of how language can be learnable. An agent learning a common language may ground his knowledge of it in the correlations he detects between utterances of sentential expressions and the situations he and his interlocutors finds themselves in. This is not even half of only thumbnail of such an explanation, but it does seem to provide for a still promising picture.

The tenet of truth-conditionality, as generally stated and employed, and also as it has been stated here, abstracts from the use of sentences. As long as one can live and work with a use-independent notion of sentences this is fine of course, and once the use of sentences does come a part to play, the meanings of sentences can, at will, be construed as abstractions over utterance meanings. The second tenet relates to this observation as well as to a felt limitation imposed by the first tenet. It appears to be a truism that the interpretation of natural language expressions is not only seriously context dependent, but also that their meanings also reside in the changes they may induce in the context of their interpretation. The idea has become popular, and relatively widespread, that the meanings of sentences are 'context change potentials'. (E.g., Kamp 1981; Heim 1982; Groenendijk & Stokhof 1988, and many of their followers.) A first, not ideal, formulation of such a new, dynamic conception of meaning consists in the slogan that "You know the meaning of a sentence if you know the change it brings about in the information state of anyone who accepts the news conveyed by it." (Veltman 1996, p. 221) Put thus, the idea comes close to Jaakko Hintikka, who already noted that "it seems to me in any case completely hopeless to try to divorce the idea of the meaning of a sentence from the idea of the *information* that the sentence can convey to a hearer or reader, should someone truthfully address it to him." (Hintikka 1969, p. 22) Hintikka subsequently wondered "Now what is this information?" and argued that it is derived from the sentence's truth conditions. Now, we may notice that if that were also the news that the above slogan is about, the endorsed new and dynamic concept of meaning could be traced back to the old, truth-conditional one. (As is actually done in, e.g., Stalnaker 1978; Stalnaker 1998; Dekker 2012).

Obviously, the changes in information states people tend to talk about are often supposed to be more than information update only, but then the idea of a sentence's meaning as an information state change potential becomes to lose its original appeal. How, for instance, would people be able to learn them? By carefully looking at information states, and watch how utterances change them? This answer seems preposterous, as properly is the idea that inspired to the question in the first place. Even so, a strong conviction remains that there is something crucial about the idea that meaning is not only essentially indexical (context dependent), but also inherently dynamic (context changing). So let me try and bring the idea back into a more mundane form: "You know the meaning of an utterance if you know the change it brings about in the situation you are in." More formally, and specifically:

Tenet 2 (Dynamic Semantics) The meaning of an utterance is the change it brings about in the situation in which it is uttered. The meaning of a sentence is its systematic contribution to the meanings of utterances of it in a variety of situations.

This tenet can be taken to state, and it is at least intended to resemble, a genuine folk notion of meaning. It is intuitively general, it covers the impact of all kinds of political, methodological, or philosophical statements, and it naturally accommodates other types of uses of expressions, like questions, commands, and permission statements. This certainly lifts quite a bit of the bias initiated by the first tenet. The tenet also points at aspects of meaning which are very well learnable. An agent learning a common language may ground his knowledge of it in the correlations he detects between utterances of expressions and changes in the situation he and his interlocutors find themselves in. (Observe that this need not be explicit knowledge, but may as well take the form of a kind of knowledge_{how}.)

The first half of the above tenet is of course way too general for linguistic or semantic purposes, for it may include any (that is, all) effects of any single utterance, which are too many to be of theoretical interest. The second half therefore zooms out to find the contributions utterances of certain expressions generally make, in order to isolate their systematic linguistic roles. Here we find a proper breeding ground for abstraction and idealization—and critical discussion, of course—as well as a relatively fresh start for new observations. Much relatively recent work on the so-called semantics-pragmatics interface, and at least most of the work that escapes the scope of truth-conditional models, can be conceived of from the perspective of this tenet. Notice, though, that the perspective on language, as given by this tenet, crucially appeals to live meanings. Notice, too, that it supplies us with a natural and productive perspective which is neutral, linguistically, cognitively, phenomenologically, and sociologically speaking. Notice, though, that the perspective on language, as given by this tenet, natural and productive, is neutral, linguistically, cognitively, phenomenologically, and sociologically speaking. Notice, too, that it, indirectly, but crucially, appeals to live meanings.

3.3 Live Composition and Interference

Returning to the very formulation of the LPoC, one may notice that I have also added, but parenthesized, the qualification ‘live’ where I referred to the mode of composition. The qualification has been parenthesized because it gives a rather obscure and dubious qualification of the mode of composition which I prefer not to dwell upon too much. It has been added, nevertheless, because it naturally raises some interesting perspective on understanding, and that is why it is addressed here after all (superficially though). The notion of a live mode of composition allows us to set aside, for the moment at least, the notion of ‘the (syntactic) analysis of an expression’, and instead talk about the analysis of an utterance. This shift of attention may not be innocent, and it may also not be without methodological repercussions, but it squares well with our ordinary conception of analyses of expressions as rendering readings of expressions. Once we settle on one such analysis of an expression, and conceive of it as the live mode of composition on an occasion of use, we naturally get at its reading or interpretation on that occasion, or at least at a substantial part of it. Moreover, more importantly and therefore maybe more dubiously, the qualification also allows for more flexibility in our engagements with envisaged rules of grammar. To be sure, by no means I want to even suggest that there are no such rules. On the contrary, one of the main tasks of the linguists consist in spelling them out, syntactic as well as semantic rules. However, rules, of any kind, can be violated, overruled, or played with, in practical life—for practical reasons,

or cognitive, or social ones—without this automatically making the offender opt out of the language game. (As a matter of fact, some such deviations can be argued to be at stake in our last five cases.) Of course, much more can be said, and need be said, about this issue, but I hope these marginal remarks suffice to clarify to some extent why the qualification ‘live’ has been added to the notion of mode of composition, and also why it has been parenthesized.

It may have worried the reader that an obscure notion of meaning has been replaced by an even more obscure one, and that the latter can be invoked to establish the vacuous result that any expression can have any meaning based on any meaning assigned to its constituent parts. As a matter of fact, this was kind of the worry about the compositionalist rendering of contextualist findings in the modulated principle of compositionality as presented by Pagin and Pelletier. Let me here, first, point out, rather trivially, that this is not by itself a bad result. For any expression *can* have any meaning on the basis of any meaning assigned to its constituent parts. There is nothing about the name, or inscription, or sound, ‘Nixon’ that makes it refer to Nixon. It is only when expressions or utterances are understood as figuring as types or tokens of a language, or a language game, that we can make sense of assigning non-trivial meanings to them. (This observation may serve to demarcate a formal linguist approach to language from a purely behaviorist one.)

Moreover, despite formal appearances to the contrary, the assignments of meanings to constituent expressions, and to compound wholes, are not at all arbitrary, and the intention of the LPoC is to account for especially this fact by employing the cover term ‘live.’ The live meaning of a compound is determined, so it can be argued for, by means of the live meanings of its constituents, but such an argument rests on the assumption that one can make sense of such live meanings of such constituents. Naturally, not anything goes here. While it is not impossible to give an interpretation of (3) as (51):

- (3) Few philosophers are linguists.
- (51) Paris visited John.

it would involve a situation in which there are vast and very specific deviations in the use of the constituents of (3) from ordinary English as it is normally used, and it surely serves no obvious purpose to make up a situation in which such deviations occur. The interesting cases are those we naturally encounter in ordinary texts and conversations, where we do find uncertainty, unspecificity, and ambiguity of, and deviation from, of the shelf interpretations of constituent expressions, but ones that we can make sense of—and ‘making sense of’ is here understood in, normally, principled ways that are subject to intuitive, philosophical, but also empirical, social, investigation.

The idea that, in the interpretation of natural language anything *might* go, but *doesn’t* go in practice, can be put to work in an assessment of proposals for things that don’t go, but, for as far as the LPoC suggests, might have worked out well after all. This already happens with an example we have discussed above.

In my discussion of case (8), I gave a ‘?’ to example (41), but the attentive reader may have noticed that, in passing, I denied the claim that what Dostojevski began in 1878 is what I finished in 1978. By stating the denial the way I did, this didn’t render (41) *infelicitous*, as was indicated by my ‘?’, but *false*, upon the live interpretation suggested by the description of the case. This very fact also suggests a way of rendering it coherent, i.e., as possibly true. Actually, this already works on a fairly natural interpretation of (52), if we consider what Dostojevski started and what I might have finished as the beginning and end of one and the same event.

(52) ¹Dostojevsky began *The Brothers Karamazov* in 1878. I finished it in 2013.

The example can be understood to be acceptable, and true, in a suitably adjusted context. We can adopt an interpretation of ‘*The Brothers Karamazov*’ where it denotes, say, a literary accomplishment realized at a stretch of time beginning with Dostojevski’s writing it, and ending with my reading it. For instance, if a critic thinks he has written the ultimate, killing, review of the book in 1978, after which nobody is supposed to ever want to read it any more, then he may feel justified in stating (52). Upon such a reading ‘*The Brothers Karamazov*’ denotes one big literary event.

Also in case 1, Anne’s son might have felicitously replied with (7) upon a different interpretation, by him and possibly others, of what he was doing in both of the situations set up by Bezuidenhout. Perhaps, for him, this was all about detecting redness among sets of apples, and then, while slicing, he found red stuff just like he did the day before, picking through the barrel.

Some such re-reading is common place in the semantic literature. A telling and well-known example relates to the classification of verbal phrases as states, activities, accomplishments or achievements. (Vendler 1957) Such classifications are often presented by means of examples of phrases that do, or do not, allow to be put in the progressive, or can, or cannot, be qualified by *for-* and/or *in-*phrases. Thus, we find (un-)grammaticality or (in-)felicity judgments like the following in the literature:

(53) *Romeo recognized Julia for/in an hour.

(54) *Parmenides was an ancient philosopher in an hour.

However, such classifications tend to be overruled by suitable reinterpretations, or re-readings of the predicates involved. Once we stretch the notion of recognition employed in a use of example (53), or that of being a philosopher for example (54), to a suitable category of events or states, the two examples are felicitous after all. Would this then show that a categorization of verbal phrases into certain aspectual classes has therefore been refuted? Not at all, it seems. Rather, the required reinterpretation of the relevant verbs or predicates may bring to light the semantic properties that allow them to be qualified, for instance, by certain adverbial phrases.

Another case is presented by (Cohen 2001), quoting an example from (Burton-Roberts 1977).

(55) *A king is generous.

The sentence, with the noun phrase ‘a king’ read generically, is claimed to be odd because, according to Cohen, a generic use of such an indefinite singular subject, requires it to be paired with a law-like predicate. Example (55) “is bad because being generous is not part of the definition of **king**”. However, when such properties “are used in a definition, the sentences become acceptable.” (Cohen 2001, p. 201) A sentence like (55) “may, in the appropriate context, receive such a reading:

(56) Sire, please don’t send her to the axe. Remember, a king is generous.” (Cohen 2001, p. 197)

Generalizing over such cases and discussions we may observe the following caricature of a characteristic pattern. Certain linguistic proposals start with the presentation of a couple of constructions deemed dubious, which are marked with a *, then continue by opposing them to certain unproblematic examples, and next raise and answer the question what the difference resides in. (Often this marking of grammaticality is qualified by a footnote, or by

the mark itself, consisting in, e.g., one or two or even three question marks, and adjoined with the qualification “in an out_of_the_blue context”.) In the semantics literature these answers tend to consist in the identification of a certain semantic property that an element in the construction typically has or lacks. The LPoC can then be invoked by means of an interference principle so as to test the viability of the given explanation. For, a most obvious test of the proposed explanation would consist in setting up a case in which the element that has induced the infelicity mark in the original example, can be read as having, or lacking, the responsible semantic property. It may be useful to formulate and label this point explicitly as another principle.

Interference Principle If (the lack of) a semantic property π of an expression X is proposed as an explanation of the fact that X does not felicitously figure in configuration $^*\phi(X)$, then in a context in which the live meaning of X fails (has) π , it should, all else being equal, render X felicitous in $^*\phi(X)$ again.

As I indicated, this principle is already appealed to in live discussions between semanticists and it can be deliberately invoked whenever a certain suitable, well-formulated, proposal is made about the acceptability or felicity of certain linguistic constructions. However, notice that such a principle only makes sense when one allows for a notion of live meanings. For if expressions are assumed to have one literal or linguistic meaning only, then infelicity would be systematic, and ought to be without exceptions. It may be clear, from the position adopted in this paper, and from the contextualist findings, that such a rigid notion of interpretation better be given up. Notice, moreover, that the interference principle literally presupposes that we can generalize over expressions, contexts, configurations and semantic properties. Thus, the principle only makes proper sense within (i) an enterprise of formal semantics that (ii) eventually takes live meanings to heart.

Conclusion

The aim of this paper has been to maintain and substantiate a formal semantic approach to natural language in view of deemed obvious contextualist findings. In particular, I have argued for a notion of compositionality of meaning, with just that amount of intuitive or philosophical substance that allows for the accommodation of these findings while not rendering the principle vacuous or trivial. By means of a survey of a number of cases I hope to have demonstrated that the principle allows for a flexible concept of interpretation. I have also argued that it naturally fits the well-motivated paradigms of formal semantic analysis.

The tenets of truth-conditional and dynamic semantics unfold a perspective on the meaning of natural language expressions that help us reveal significant structures and principles, as is generally assumed. The (live) principle of compositionality can indeed be taken to be one of such principles. The corresponding insight that semantic principles apply to live meanings furthermore allows for a specification of the interference principle, as it is called here, which can be used as a methodological tool, and that actually is invoked and that can be systematically applied in a variety of linguistic discussions.

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