Towards a dynamic functional proposition for dynamic discourse meaning

Chi-Hé Elder and Kasia M. Jaszczolt
University of East Anglia, U.K. University of Cambridge, U.K.
c.elder@uea.ac.uk kmj21@cam.ac.uk
ORCID ID: 0000-0002-3702-5397 ORCID ID: 0000-0001-7911-2985

Abstract:

Theories of utterance meaning in the post-Gricean tradition have typically focussed on the main proposition expressed by the speaker that is recovered by the addressee. In this tradition, successful communication rests on the assumption that speakers and addressees come to a shared understanding of these propositions as they are produced in conversation. We now have a wealth of empirical evidence that speakers and hearers need not always converge on the main proposition expressed in order for communication to proceed unhindered: they may share partial understandings of individual utterances, allowing the overarching discourse meaning to unravel as the interaction progresses. In this paper, we propose a novel unit of meaning that accounts for such a dynamic concept that can emerge and develop over several turns at talk. We call it a 'dynamic functional proposition'. This unit includes not only the linguistic meaning that has been communicated, but also meaning conveyed through non-linguistic sources, as well as aspects of situation captured through what we call 'filters', such as interlocutors' levels of attention, emotions, and other non-representational aspects. These various aspects will have greater or lesser salience for different speakers, hence offering an explanatory tool for how utterance meanings are negotiated, as well as when and why misunderstandings occur. We finish by proposing ways in which such a unit can be formally represented. We do this by motivating different cognitive, social and linguistic parameters that influence it.

Keywords:

post-Gricean pragmatics; miscommunication; co-construction of meaning; dynamic functional proposition; Default Semantics

1. Introduction: Desiderata for propositions

The focus and scope of theory of meaning are still widely discussed topics. As is well known, Grice's original concept of 'non-natural' meaning spans 'what is said' and 'what is implicated'. Since then, Grice's non-natural meaning has long been considered to delimit what a theory of meaning ought to represent, or, in other words, to delineate "an outer boundary on the communicational effects that a theory of communication is responsible for" (Levinson 2000: 12-13, as quoted and discussed in Wilson and Carston 2019). But while Levinson suggested that Grice's non-natural meaning did an adequate job of carving out, and carving up, what is communicated, the concept of what is said – that pertains to truth-conditional, propositional content – has been subject to a lot of scrutiny in terms of the units that most appropriately reflect how people communicate in natural language. Various post-

Gricean accounts have redrawn the said/implicated boundary, including more and more content in what is said/explicit, thereby promoting the development of the contextualist stance on truth-conditional content (see e.g. Recanati 2012). In addition, Wilson and Carston (e.g. 2019) have challenged the current perception of the entire scope of pragmatic theory by focusing on creative metaphors and the nuanced contributions to meaning they exert: contributions that, albeit standardly deemed non-propositional, in fact display an array of forms from what can be captured in terms of propositional content after all to more elusive imagery.

The purpose of this paper is to further engage in this metapragmatic inquiry into the scope of a theory of communication and how it ought to be divided. In what follows, we will be focusing on the question as to how to best delimit propositional content to make it capture the meaning that is of most interest to communicators, asking about (i) its scope in relation to the standard Gricean said/implicated divide, as well as (ii) its relation to the speaker's intended and addressee's recovered meaning, including the meaning that can emerge somewhere in-between, so to speak, as jointly constructed. We propose, and justify, a concept of a *dynamic functional proposition* that allows us to fulfil these desiderata, namely to represent the content of the main message conveyed by an utterance, reflecting what really matters to both the speaker and the addressee, allowing for the input of each side to meaning construction, and respecting the multimodal nature of communication—something that past post-Gricean accounts that were constrained by intention recovery on the one hand, and the fixation on the logical form of the sentence (even if moulded to fit with communicative intentions) on the other, failed to do.[1]

In post-Gricean contextualism, in the tradition of Atlas-Kempson (Atlas 1977, 1979, 1989; Kempson 1975, 1979, 1986), Relevance Theory (Sperber and Wilson 1986), Recanati (2010), and others, we have seen various configurations of the semantics/pragmatics boundary, where the focus of attention has been on the delimitation of truth-conditional content, and as such, propositional content. The key idea is that context is needed to provide information such that the logical form of the uttered sentence may be further elaborated on – 'saturated', 'modulated', 'enriched', or 'developed' (to use some of the popular, albeit not synonymous, labels) – in order to produce a unit that reflects how natural language users themselves understand utterance meanings. We begin by taking a radical stance on the role of the said/implicated boundary in delimiting propositional content, following Jaszczolt's (2005, 2010) theory of Default Semantics that pushes the concept of 'what is said' beyond more 'traditional' post-Gricean proposals insofar as what is said ('said' in the sense of meaning it – that is, the main meaning emerging from an utterance in a particular conversational exchange) allows for some rather radical modifications of the meaning of the sentence. Not only does it allow for the developments of the logical form of the uttered sentence as the context requires, as Relevance Theory and Truth-Conditional Pragmatics have it, but also sometimes (quite often in fact) *overriding* it altogether. The latter takes place when the main intended meaning of the speaker (and the main meaning recovered by the addressee, assuming all goes well in the communication process) is conveyed indirectly. This seemingly counterintuitive move makes perfect sense when we realise that enrichment, as, for example in (1a), already constitutes a considerable step beyond the meaning of the sentence, while often failing to do the job, namely to represent the main message, pertaining to the main purpose of uttering the sentence. On the other hand, (1b) does precisely that. When a

[1] For a discussion of what counts as 'being post-Gricean' see Jaszczolt 2019 and 2023a, b.

contextualist already embraces the label *what is said* for various 'top-down' (i.e., non-indexical) modifications of (1a), there is no good reason not to go all the way to (1b) instead to capture the main informative intention.[2]

(1)
A: They are showing *Oppenheimer* at Cineworld tonight – shall we go to see it?
B: I have an essay to write.

(1a) B has an essay to write with an imminent deadline.
(1b) B can't go to the cinema with A that evening.

Moving to naturally occurring speech, in (2), B principally communicates a strong implicature (2a), which is arguably the main message produced in response to A's question.

(2)
A: Why do you think it's OK to eat animals?
B: I went vegan in 1987. You're preaching to the converted here.[3]

(2a) B does not think it is OK to eat animals.

Following the principles of Default Semantics, it would be the message in (2a) that would *take priority as what is represented as the main truth-conditional content*. In effect, the what is said/what is implicated boundary is dissolved on this account in that the main propositional content can draw on either what is explicitly uttered, or what is implicated, or a combination of both. Put differently, we purport that instead of the said/implicated distinction, it is more prudent and effective to focus on a distinction that is orthogonal to it, namely the one between the main, 'truly primary' meaning on the one hand, and the secondary meaning on the other, where both of them can on occasion be implicit.

A brief terminological note is in order at this juncture. The terms 'primary meaning' and 'secondary meaning' have been widely used in post-Gricean literature in congruence with the concept of the freely enriched logical form. But when we adopt the stance that the theory of meaning in communication ought to focus on the main message independently of its relation to the logical form of the sentence, the scope of the primary meaning will also change, following suit. To avoid confusion, we index it in what follows as 'primary meaning$_{DS}$' (for 'Default Semantics'), in agreement with the way the term is used in that theory.

All in all, we focus here on the speaker's goals of uttering something and on the success with which they come across in communication. This takes us to the question as to what theoretical construct of a *proposition* would best fulfil the role of capturing the primary meaning$_{DS}$ so understood. Needless to say, the adequate concept of a proposition will have to

[2] *What is said* is used in the discussed contextualist accounts as an intra-theoretic, technical term and as such already departs from the everyday sense of saying that means explicitly uttering. However, note that in (1), A may reply: 'What is it exactly that you are saying? That you definitely can't go or that you shouldn't go but can be persuaded?'. So, arguably, extending the technical term a little further and in the process making it capture the main meaning is a no-brainer. For extensive discussions see the literature on Default Semantics collated in Jaszczolt 2021b.

[3] https://answers.yahoo.com/question/index?qid=20200913065657AAehFpV (accessed 15 September 2020). Quoted in (Jaszczolt 2021a: 203).

capture something other than the meaning of the uttered sentence: it has to capture the kind of meaning that fulfils the utterance's primary function (hence the term 'functional' as part of its label, as elaborated on in Section 2).

Now, post-Gricean accounts have typically been concerned with the main proposition expressed by the speaker *and* recovered by the addressee, assuming that normally speakers and addressees come to shared understandings of propositions as they are expressed and recovered and this is the state of affairs that pragmatic theory ought to concern itself with. However, in more recent years (and in approaches other than Gricean for even longer), there has been growing attention to going beyond the idea that speakers' intended meanings are the ones that should take priority in a theory of communication. Interlocutors do not always come to shared understandings, but at the same time it is not necessarily a problem for a theory of communication: communication breakdown does not ensue that often. Instead, what ensues is a spectrum of partial understanding which suffices for communication to continue – or which is ameliorated or resolved through what conversation-analysts call 'other-initiated repair'. It is a well-known fact that speakers communicate a whole range of meanings through their utterances, and these can range from strongly to weakly intended – or even to those not intended at all. The latter might be compatible with what the speaker effectively *said* even if the speaker didn't intend them (see Ariel's 2016 taxonomy of pragmatic meanings and Hansen and Terkourafi 2023 on the importance of hearer meaning). Alternatively, they can fall completely outside of the range of plausibly intended meanings (see Elder 2019). But as long as the speaker and addressee agree on them by the end of the (relevant part of the) communicative exchange, there is no detriment to communication, so to label such instances as communication breakdown would be far too strong. And this is the main reason for including them in the scope of what pragmatic theory ought to represent. Indeed, Elder and Beaver (2022) discuss reasons why speakers might concede misunderstandings, for example if they are not functionally significant to an interaction (for the reason of politeness for example), thus providing some rationale for why such instances should be of interest to a theory of communication.

To exemplify the kind of phenomenon we have in mind, we use (3), an example adapted from Clark (1997: 589).

(3)

Waiter:	And what would you like to drink?
Customer:	Hot tea, please. Uh, English Breakfast.
Waiter:	That was Earl Grey?
Customer:	Right.

The key information to note is that English Breakfast tea is a specific type of tea, that is different to Earl Grey tea. But despite ordering English Breakfast tea, Clark agrees to Earl Grey tea in the end, as a result of the process of a joint construction (co-construction) of meaning. As Clark (1997: 589) puts it, "I initially intended to be taken as meaning one thing, but I changed my mind. Speakers may accept a misconstrual because they deem it too trivial, disrupting, or embarrassing to correct. Still, once it is grounded, it is taken to be what they mean." We use this example throughout our discussion to demonstrate why, and how, this final co-constructed, 'settled' meaning that "is taken to be what is meant" is to be represented in a dynamic model of speaker meaning.

All in all, in this paper, we want to push a novel concept of the proposition that can handle these different kinds of pragmatic meanings, including (i) strongly implicated (examples 1 and 2) as well as (ii) co-constructed (example 3) meanings. Concerning (i), we take inspiration from, and further develop, the concept of a *functional proposition* (Jaszczolt 2021a), using the framework of Default Semantics (Sections 2 and 4). In the process, we also take inspiration from some recent proposals in philosophy pertaining to naturalised and cognitively real propositions. Concerning (ii), we take inspiration from Elder and Haugh (2018), who demonstrate in their model how co-constructed settled meanings can constitute speaker meanings and propositional meanings (Section 3). The idea takes insights from Conversation Analysis (CA, Sacks, Schegloff and Jefferson 1974) that allows addressees' understandings and addressees' responses as evidence for how they have understood a speaker's previous utterance. Rather than assuming a one-stage process of 'speaker implicates, hearer infers', as has often been done in post-Gricean theory, Elder and Haugh merge the dynamism of CA with the assumptions of a contextualist truth-conditional theory of meaning and suggest that the propositions that are of interest to a theory of communication are often subject to a sequential process whereby *the participants settle on an agreed meaning of the initial utterance that emergers somewhere in the subsequent turns*. Speaker meaning on this account is "[t]he most salient propositional meaning that is ostensively made operative between interlocutors" (Elder & Haugh 2018: 595). We take all these insights on board and now consider what such a propositional unit would look like that can encompass such dynamic, not always explicit, and often co-constructed, meanings.

In pursuing the above aims, we are engaging not only in a *metapragmatic* inquiry, but in essentially a broadly understood *metasemantic* one. We are thinking about the content of the proposition that constitutes the primary meaning$_{DS}$ and place it at the core of theory of communication. In agreement with the contextualist tradition, we consider it to be the only unit of meaning worth attention since the theory of communication, and thereby its object of study, have to fulfil the requirement of cognitive reality. To clarify, unlike Relevance Theory or Truth-Conditional Pragmatics, we believe that such conversationally 'primary' meanings, further vindicated by the availability of formalization (attended to in Section 4), are the domain of a *contextualist-semantic rather than pragmatic* theory. This stance reveals more than a terminological preference; it delimits the theory of meaning and organizes it internal structure of objects of study (into primary meanings$_{DS}$ and secondary meanings$_{DS}$ – to reiterate, orthogonal to the explicit/implicit distinction). As Jaszczolt (2021a: 204) puts it, metasemantics refers to "the meta-theory of meaning *tout court*, and as such a meta-level that also subsumes aspects of meaning traditionally ascribed to pragmatics" (for an introduction to metasemantics and metapragmatics, see also Jaszczolt 2022). This is reflected in the aim of our paper: to propose a concept of a proposition that brings together various aspects of meaning, focusing *not* on the syntax/semantics/pragmatics divides, but rather on what really matters to the interactants in conversational practice[4] – without, at the same time, throwing the useful tool of truth conditions and the possibility of formalization out with the bath water. After all, to recall (i) and (ii), speakers (i) make use of different (direct as well as indirect) means to arrive at their main message, and they also (ii) jointly construct meanings on the fly. The concept of a proposition we need will have to reflect such conversational practices.

In what follows, we propose the concept of a dynamic functional proposition in order to adequately capture speaker meaning, not only as it is intended and understood by speakers

[4] We return to the focus on the *person* in the concluding section.

themselves at the very point of the given utterance, but also how it is negotiated and settled over the course of an interaction as an agreed meaning between multiple discourse participants. So, first, we move to a brief critical assessment of the available candidates to put it in the extant theoretical context.

2. Proposition for communicated content: In search of a concept

On our search for an appropriate unit of analysis that fits our desiderata, we now discuss the concept of a proposition. As is known from formal semantics and philosophy of language, 'proposition' can mean different things: principally, it can be the bearer of truth values; it can be the meaning of natural language sentences; or it can be the object of beliefs and other mental attitudes, to list the most common definitions.[5] But as McGrath and Frank (2023) aptly note, there is no sole concept of a proposition *per se* that can serve all functions that are expected of it; it will never be a rigid theoretical construct that can be discussed in abstraction in addressing the question 'What *is* a proposition?' It is not useful to ask about the structure of a proposition in abstraction as to do so would merely amount to asking about the structures of different objects, depending on one's assumptions and desiderata. Likewise, asking about the relation of a proposition to language users cannot be performed in abstraction insofar as different constructs, thought up to serve different theoretical purposes, can be entertained in this relation. As they say, 'proposition' is a "quasi-technical word" (McGrath and Frank 2023:1). So, in this vein, while philosophers do indeed tend to address the question 'What is a proposition?', we will regard here a proposition as a theoretical construct that can indeed (a) be a bearer of truth conditions, albeit truth conditions not of sentences but rather truth conditions that will give us primary meanings$_{DS}$ (we will need this for our formal analysis of meaning) and (b) be the content of beliefs (we need this for the cognitive reality of the meanings we purport to study). In particular, we will ask what a proposition should be for it to be useful in a theory of meaning that is contextualist enough to accommodate desideratum (i) and dynamic enough to accommodate desideratum (ii), exemplified in (1)-(2) and (3) respectively.

In doing so, we emphasise that what counts as a proposition can differ from one project and theory to another: it will differ depending on the kind of meaning one wants to capture in one's theory. When one's objective is to probe into the language system and meanings it can compositionally produce on the level of types, a traditional sense of proposition as used in Montagovian semantics will do the job. But when we want the proposition to capture co-constructed meanings in context, we have to search for something more adequate (*notabene*, retaining as the overall explanans that the unit it pertains to [utterance or thought] is handled by a function from possible worlds to truth values, analogous to that for meaning of natural-language *sentences*). Hence, we have to fix our assumptions and desiderata first. With these provisos in mind, we maintain that 'proposition' remains the best label for such a unit, and endeavour to find the concept that best fits our purposes.

First, we discuss some notable precursors. For Frege (1956 [1918-19]), propositions are shareable thoughts expressed by sentences. These propositions are structured[6]: they are composed of senses, which are abstract equivalents of shared concepts. This entails that their

[5] For an introduction see e.g. McGrath and Frank 2023.
[6] For unstructured propositions see e.g. the proposal of pleonastic propositions in Schiffer 2003.

structure is not isomorphic to that of sentences: senses, or modes of presentation, go over and above the basic meaning of words and contain information beyond that offered by the sentence alone. This makes Fregean propositions close to what pragmaticists want to capture (as compared with, say, Russellian propositions) but not close enough. To begin with, senses are not private representations but shareable generalisations over them. They were thought out to make intensional contexts, such as belief reports, conform to the requirements of a truth-conditional theory of meaning on some objective, theoretical level. Second, and relatedly, Fregean propositions themselves are abstract objects rather than something that belongs in the realm of natural, human conversational behaviour. So, our theoretical construct will have to be somewhat different. But Fregean propositions prepare the ground.

At this point we can tap into a recent discussion in philosophy as to what (and who) propositions pertain to. If they are not Platonic objects (as per Frege), we are free to construe them as 'abstracted' from agents' cognitive states and, as such, as cognitively real, belonging to speakers themselves, so to speak, and reflecting their thoughts. Such propositions are speaker's propositions, and in this sense they are, as philosophers say, *naturalised.* We subscribe here to this more recent tradition in philosophy of naturalising propositions.

Within this camp, for King (2007, 2014, 2019), properties of a proposition, such as truth-conditionality or representing situations in the world, come from their *relation to the mind of the human agent who entertains them*. So, it is language users themselves who endow propositions with truth conditions. We are now closer to where we want to be, but King's naturalised propositions are not yet exactly what we need; since their content is closely dictated by the structure of the sentence, they won't capture our radically contextualist primary meanings$_{DS}$ that, to reiterate, defy the explicit/implicit divide (exemplified in [1b] above). In other words, assuming, as we do, that representations of discourse meaning need to be able to go beyond the sentence to the primary meaning$_{DS}$ that either requires top-down modification (free enrichment, modulation) or may even be expressed indirectly, we need to go beyond King's propositions—and, so to speak, naturalise them a bit more.

Next, Soames (2014, 2019) offers propositions that are a little closer to what we need. His propositions are again naturalised, as they are abstracted from agents' cognitive states. Their main benefit for our purposes is that they are *cognitive event types*, realised as instances of *agents' representing things*. In this respect, their relation to language users lies in the core of their definition, and they capture information that matters to people in discourse. But where we differ is the stance in the minimalism/contextualism debate: truth conditions of Soames' propositions are minimalist, they are not sensitive to this agent-related conceptual content. This is because, in agreement with the traditional minimalist stance in semantics, compositionality is sought on the level of natural-language structures, rather than, like in some recent post-Gricean contextualist accounts, on the level of human thoughts as they are expressed by utterances. (To reiterate, Relevance theory, Truth-Conditional Pragmatics and Default Semantics are pertinent examples of the latter, with Default Semantics taking contextualism a step further into the domain of truth-conditional representations of indirectly expressed content.) In this respect, in Soames' proposal, we have a dissociation between a cognitive proposition that is naturalised, and a unit pertaining to truth-conditional meaning that is not.

So, we need to go a step further. We need a proposition that is cognitive, and as such it dictates that the truth-conditional analysis pertains to the main message that is settled on between the interlocutors – a proposition that belongs to speakers and addressees and reflects

their conversational interaction in 'meaning-making'. We emphasise here the importance of the requirement that it pertain to truth-conditional content as it is understood in contextualist truth-conditional theories of meaning, and here specifically in Default Semantics. So, we now move to the concept of a *functional proposition* developed using such assumptions, before we elaborate on the dimension *dynamic* and settle for the label 'dynamic functional proposition'.

A functional proposition is a structured proposition that reflects the composition of main communicated meaning. As introduced in Jaszczolt (2021a), it captures the primary intended, recovered, and partly co-constructed meaning as it is understood by interlocutors. As such, to reiterate, it captures the primary communicative *function* of the utterance. This is the primary meaning$_{DS}$ introduced in Section 1: as we explained there, it can be directly or indirectly communicated, and may or may not correspond to the speaker's initial intended meaning in that it can be subject of negotiation in the subsequent turns. Needless to say, since it does not have to inherit the structure from the uttered sentence, the structure of the proposition can rely on the varied, multimodal informational input in communication: information about meaning that comes from different sources in communication, not only the utterance itself. We communicate by immersing our utterances in a situation that exploits socio-cultural defaults, background information (i.e. common ground), and other sources, as discussed in more detail in Section 4. So, such a functional proposition adds the perspective of co-construction of meaning, making use of different modalities through which meaning is externalised. All in all, it caters both for (i) and (ii) – and (1)-(3) – above.

However, the functional proposition as it is proposed there does not come with a fully worked out account of its dynamic construction. So this is our current task: to further develop a *dynamic* functional proposition that can reflect the flexibility of meaning as it changes and grows over the course of an interaction. The next step is to look into the dynamicity of such a concept. As such, we now need to combine our search for a unit of meaning with a suitable model of dynamic meaning in order to show how this unit may reflect it.

3. Capturing dynamic meanings

To reiterate, 'dynamic meanings' as we understand them here have their roots both in the truth-conditional tradition and in the very different tradition of CA, whereby dynamicity is woven into the structure of discourse and remains such; in agreement with ethnomethodology, CA refrains from any theoretical 'overlay' over what speakers themselves do in conversational turns and the structure thereof. In fact, the goal to represent dynamic meanings spans a wide range of very different theories and paradigms. In Game Theory (e.g. Lewis 1979; Parikh 2010), the emphasis is put on striving towards an equilibrium in conversation. Interactants start with different, sometimes incompatible objectives and goals, and strive towards what suits them all, so to speak. Reflecting on this construal is useful for thinking about co-constructed meanings, as in (3), in that interlocutors have different starting points and work together to settle on a joint agreed meaning.

To take another example, Discourse Representation Theory (DRT, e.g. Kamp and Reyle 1993) is a formal, truth-conditional approach that represents discourses as they unravel, accounting for cross-sentential anaphora, presuppositions, intensional contexts, and other recalcitrant phenomena. DRT introduces dynamicity into the representations, which go beyond the level of the unit of the sentence. An offshoot of Discourse Representation Theory,

Segmented DRT (SDRT, Asher and Lascarides 2003) adds to this representing rhetorical relations between propositions, such as Explanation, Background or Narration, linking sentences into coherent discourses. Again, this tradition gets us closer to what we want, because it involves representing discourses, including some of their 'pragmaticky' aspects that are not recoverable from sentence meaning in abstraction. But, as before, it doesn't get us far enough for the purposes of (i) and (ii). Another offshoot of DRT is Default Semantics (Jaszczolt 2005, 2010) – a 'pragmaticised' offshoot whose representations of primary meanings$_{DS}$ (called *merger representations*) again go beyond the sentence to formally represent what emerges as the main communicated content —be it directly or indirectly communicated. But, like in the other theories in this family, co-construction of meaning is not explicitly addressed: meaning in DRT is largely analysed on the level of types rather than tokens, with dynamicity understood as the update of information going from one sentence to the next, with some incorporation of pragmatically supplied content as in the case of, say, presupposition accommodation.

So, while there is a tradition of representing dynamic meanings in semantics on the one hand, and the tradition of discussing dynamic *qua* co-constructed meanings in 'theory-free' CA on the other, we can take these insights on board and go further. For one, the joint construction of meaning is not well accounted for in any of the extant accounts on either side. And this is what we focus on now, still bearing desiderata (i) and (ii) in mind.[7] Our task is now to put together, in a positively eclectic manner, what may not immediately strike one as compatible views: some ideas from the formal methods of analysis of dynamic meaning in existing approaches as briefly outlined above, and insights from the analysis of co-construction of meaning inspired by CA, and specifically from Elder and Haugh's (2018) model of speaker meaning as interactional achievements to which we now turn.

The aim of Elder and Haugh's model is to track utterance meanings as they emerge through an interaction. In agreement with Heritage (1984: 254-260) and others, meaning-construction is regarded as a three-part process, whereby, first of all, speaker A produces an utterance (u_1), next speaker B produces a response to u_1 via their own utterance u_2, and then in the third turn, speaker A responds again through u_3 that confirms the meaning that is being settled of the original u_1. This is summarised below:

- A produces u_1
- B responds to u_1 via u_2
- A responds to u_2 via u_3

Elder and Haugh take this insight as the foundation of their model of conversational inferencing, in which meanings are indexed to utterances (u), times (t), and speakers (A, B, etc), and it is specified whether they are publicly available (Pb) or privately held in the minds of speakers (Pv). Figure 1 provides a schematic representation of how utterance meanings can change over the course of multiple turns on their model.

[7] See the beginning of Section 1.

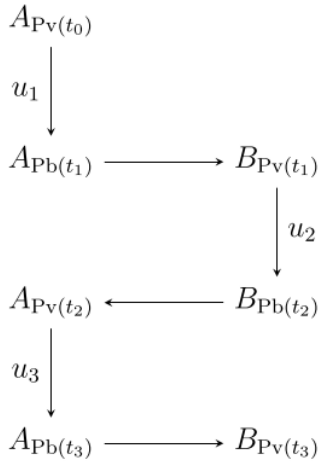

Fig. 1: The three-part process of conversational inferencing (reproduced from Elder and Haugh 2018: 607)

In Figure 1, we see the simple case for a two-speaker interaction, but note that the model can be extended to more speakers. We start at the top of the diagram with speaker A's utterance, u_1 at t_1. While A may have their own private expectation about how they intend to be understood ($A_{\mathrm{Pv}(t_1)}$), it is when this utterance is produced that A publicly makes available an inference about how they expect that utterance to be understood ($A_{\mathrm{Pb}(t_1)}$). In turn, B makes a private inference about how they understand the utterance. They produce a response in u_2 at t_2, publicly displaying how they have understood A's previous utterance, u_1. Speaker A then makes a private inference about how B understood A's utterance u_1, which may or may not align with their expectations about how they would be understood. A then responds with u_3 at t_3, confirming or repairing B's understanding as necessary. If a misunderstanding arises, speaker A may choose to accept B's alternative construal, or they may choose to actively clarify or correct speaker B and put the misunderstanding on record. Through such a model of speaker meaning, we are able to see where discrepancies in understandings arise between speakers, as well as see how speakers come to settle on an agreed meaning.

Note that, typically, most utterance meanings are resolved by t_3, but negotiations of utterance meaning can go on for longer, until the interlocutors reach a final settled meaning. Note also that it is the publicly available meanings that are on record and observable. While the model reflects the fact that speakers have private beliefs about what has been communicated, what they intend to communicate, and so on, it has to be remembered that private beliefs can differ from what is made publicly available.

Here we return to the example (3) adapted from Clark (1997: 589), repeated below, to demonstrate how the model works in practice.

(3)

Waiter:	And what would you like to drink?
Customer:	Hot tea, please. Uh, English Breakfast.
Waiter:	That was Earl Grey?
Customer:	Right.

The meaning that we focus on is that of the customer's first turn, "Hot tea, please. English Breakfast". This is what is called the potential trouble source in CA terms, and what we label u_1, as shown in Figure 2.

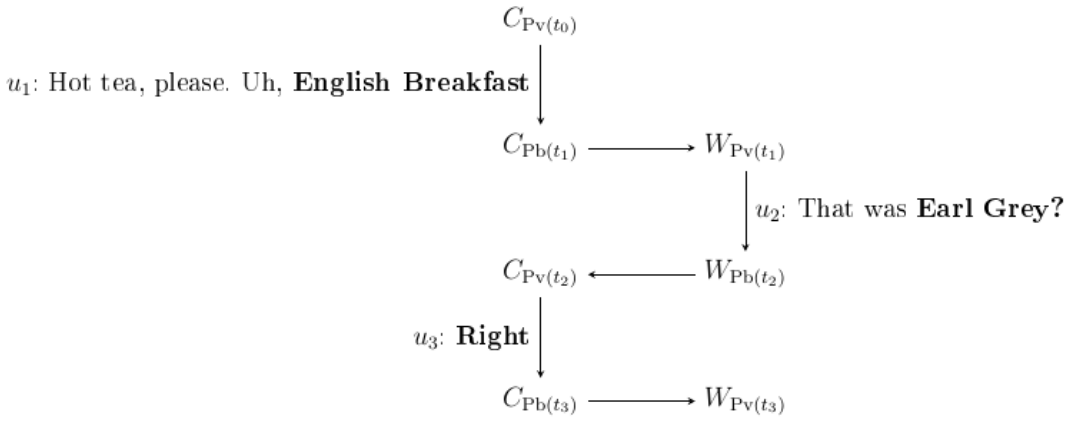

Fig. 2: Utterance meaning negotiation involved in (3)

Through u_1, the customer makes available their inference about how they expect to be understood, giving us $C_{\mathrm{Pb}(t_1)}$. Given the cultural knowledge that English Breakfast is a specific type of tea, it is inferable that the customer was specifying the type of hot tea that he desired. However, without this cultural knowledge, it is also possible that one might interpret his utterance as asking for any kind of English tea that is typically drunk at breakfast time (note the lack of indicators of a proper name status [upper case] in speech). The two plausible interpretations that the customer made publicly available through their utterance can be listed as in (4).

(4)
$C_{\mathrm{Pb}(t_1)a}$: C orders English Breakfast tea (a type of tea)
$C_{\mathrm{Pb}(t_1)b}$: C orders English tea drunk at breakfast time

From these publicly available options, the waiter is able to make a private inference about how they have understood the customer's request at $W_{\mathrm{Pv}(t_1)}$. We use the waiter's publicly available clarification question at t_2, "That was Earl Grey?", to make an assumption about the waiter's private inference about the customer's utterance, u_1. Here it seems that they inferred the second of the two options, namely that the customer wishes to order an English tea drunk at breakfast time as in (5).

(5) $W_{\mathrm{Pb}(t_2)b}$: C orders English tea drunk at breakfast time

It is possible that this inference was made in conjunction with a lapse in concentration or difficulties comprehending the customer (see discussion by Elder and Beaver 2022 on this point), leading the waiter to offer their own proposal for what the customer might have said through their clarification question, "That was Earl Grey?", thereby putting a further option (6) on the table for the utterance meanings in play.

(6) $W_{\mathrm{Pb}(t_2)c}$: C orders Earl Grey tea?

This proposal likely led the customer to make a private inference that the waiter misunderstood the initial order. We know this due to the metapragmatic insight we have from the customer himself (Clark), discussed in Clark (1997), as quoted in Section 1. But irrespective of the miscomprehension, the customer responds "Right" in u_3. This makes available the public inference that he accepts the Earl Grey tea, and hence leads us to a final settled outcome that the customer orders Earl Grey tea—despite this being a different kind of tea to the one that he originally ordered. The final settled meaning is thus (7).

(7) $C_{\mathrm{Pb}(t_3)c}$: C orders Earl Grey tea

To play devil's advocate, one might argue that this example demonstrates a case of miscommunication and as such is a domain of a very different inquiry from that of utterance meaning. But note that these meanings are *settled on*: they are not cases of blatantly corrected misunderstanding. Indeed, (3) appears to display other-initiated self-repair at u_3, but we contend that u_3 does more than that: it *updates* the meaning that was initially intended, and hence creates flexibility in how the original utterance is to be taken. It thus exemplifies a case of dynamic meaning where interlocutors strive for an equilibrium, and as such belongs, fairly and squarely, in the domain of a truth-conditional theory of meaning, as long as this theory can capture this flexibility. Our dynamic functional proposition allows for providing just that: there is a cut-off point in conversation at which the meaning is settled and it is the meaning that emergers at this point that we want to represent.[8]

4. Representing dynamic meanings

At this point, it is worth reiterating that it is the publicly available meanings that we aim to represent. These are the perspective-independent, objectively observable, on-record meanings that we, as analysts, have access to. So, to truly reflect the dynamic nature of utterance meaning in interaction, our dynamic functional proposition has to be sensitive to the publicly available meanings that are available as conversational interaction progresses, which necessitates going beyond only representing the final settled meaning. This involves representing the meanings as they are dynamically made available in interaction, from the initial utterance all the way to the final settled meaning, which allows us to represent the meaning at various 'cut-off' points in conversation; depending where we look, the content of the dynamic functional proposition will be different at different points.

Moreover, it is through such a unit of analysis that we can account for how the private, cognitive states of individual speakers contribute to the joint negotiation of the on-record public utterance meanings, taking into account the multimodality of the situation at different points in the interaction. To help represent this multimodal informational input, we combine the dynamic model of speaker meaning from Elder and Haugh with the theory of Default Semantics. Default Semantics is a comprehensive theory that identifies a range of different sources of information that contribute to utterance processing and utterance meanings. Specifically, there are four processes that correlate with different sources of information, as follows:

[8] We thank the anonymous referee for making us clarify this point.

- Process: Processing word meaning and sentence structure (WS)
    - Source: word meaning and sentence structure (WS)
- Process: Cognitive defaults (CD)
    - Source: Properties of the human inferential system (IS)
- Process: Social, cultural and world knowledge defaults (SCWD)
    - Source: World knowledge (WK)
    - Source: Stereotypes and presumptions about society and culture (SC)
- Process: Conscious pragmatic inference (CPI)
    - Source: Situation of discourse (SD)
    - Source: World knowledge (WK)
    - Source: Stereotypes and presumptions about society and culture (SC)

The merger of information coming from different sources, through the associated processes, then produces a contextualist-semantic, truth-conditional representation – the *merger representation* of Default Semantics referred to above (labelled with a sigma [Σ] for 'summation of information'). Just as the theory itself is an offshoot of DRT, taking it into the domain of pragmatic content, as was discussed before, so the representations are loosely modelled on discourse representation structures (DRSs) of DRT. They allow us to represent the composition of meaning that is arrived at by the interactants themselves. Figure 3 presents a merger representation for u_1 at t_3. As is customary in Default Semantics, we index relevant portions of meaning with the relevant *processes* that produce them.[9]

[9] The exact mechanism is explained in various introductions to Default Semantics, including Jaszczolt (2005, 2010, 2016, 2021b).

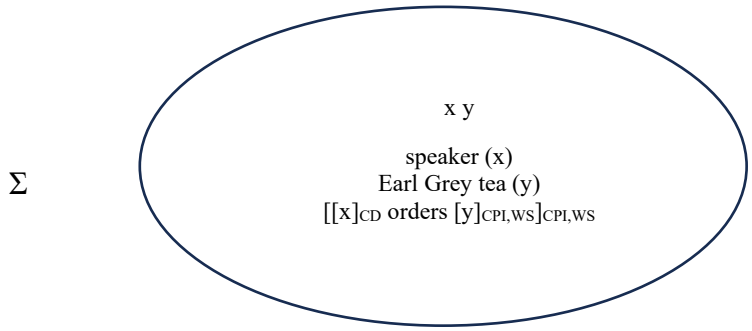

Fig. 3: Merger representation for u_1 at t_3 in (3).

The overall dynamic meaning, the dynamic functional proposition that is represented, is therefore that the speaker orders Earl Grey tea – a proposition that was not present at t_1 but was settled on at t_3 and was put together, so to speak, in a pragmatic process of composition, from information conveyed in the initial speech act of ordering tea, the subsequent attempt at a repair initiated by the waiter, and an act of consent. This is what merger representations allow us to do: we can produce representations for propositions arrived at at various cut-off points in the interaction.

Next, as we said before, we also want to represent the stages in the process that leads to the proposition represented by Σ. In the a merger representation in Figure 3, we indexed parts of the material for *processes* to show how their outputs combine in the overall pragmatic composition process. We now indicate which *sources* are relevant for generating the different available meanings at each stage of the interaction in the café situation. However, because we are dealing with a situation of misunderstanding (that Default Semantics did not originally aim to handle), we may also need to represent the rationale for why the interactants make certain (conscious or subconscious) interpretative moves. We thus introduce what we call *filters* that explain how an utterance may lead to different interpretations at different points by different interlocutors, but also how the interlocutors are able to jointly arrive at a final settled meaning. Assessing the cost of potential repair, the desired level of politeness, acknowledging differences in the level of attention are examples of such filters—through which, so to speak, the addressee can filter, consciously or not, the message that they are processing. Applying the sources and filters to the dynamic model of the café situation now results in Figure 4.

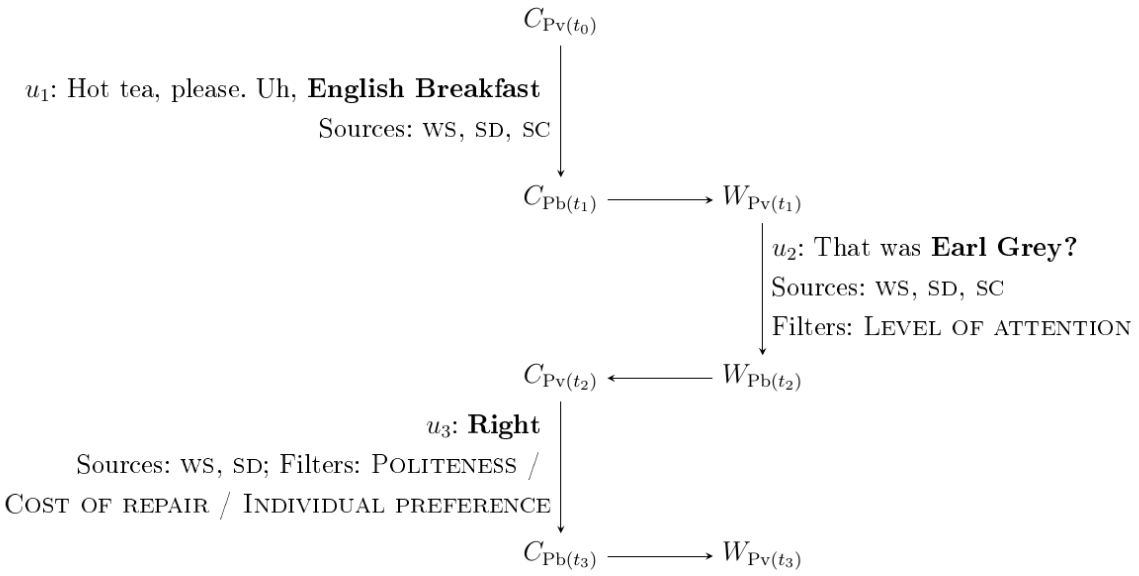

Fig. 4: Sources and filters pertaining to the process of utterance meaning negotiation in (3)

First, at u_1, we have word meaning and sentence structure (WS) that contributes lexical information to the utterance meaning. We also have the situation of discourse (SD), namely that the interlocutors are in a café, which offers access to the types of script that would be used when placing an order in a café, as well as the types of items that might be ordered. But also, we have stereotypes and presumptions about society and culture (SC) that may be used or not used by different interlocutors, depending on their familiarity with the brand of tea English Breakfast (or indeed other brands that might be relevant to this order).

Next, at u_2, we again have WS and SD that provide the lexical content of the waiter's publicly available inference about their understanding of u_1, as well as the fact they are in a café, as described above. Now SC becomes more pertinent, as it seems the waiter may not realise that English Breakfast is a specific type of tea, and yet has filled this in with their own proposal of Earl Grey (where SC is needed to know that Earl Grey is another type of English tea). In this respect, the waiter is making use of SC in a different way to the customer. In the case of u_2, we may also need a filter that pertains to the waiter's level of attention, as this may have affected their interpretation of u_1.

At u_3, again, we need WS and SD as above. But we also need filters that would enable us to postulate the contributing factors that led the customer to accept the Earl Grey tea. (See Elder and Beaver 2022 on the topic of why people might not repair, even when there is a known misunderstanding.) We may need a filter relating to politeness (the customer may not have wanted to cause face damage to either the waiter or to themselves for having encountered this miscommunication), a filter relating to cost of repair (it takes time and effort to repair a miscommunication), and/or a filter relating to individual preference (the customer may have decided that they preferred Earl Grey tea in the end). In any case, all of these potential filters will contribute to the process of conscious pragmatic inference (CPI) that allows the customer to make this final decision regarding their order, hence publicly displaying the settled meaning of the discourse.

As a reminder, private inferences on Elder and Haugh's model are perspective-dependent. They are individual to speakers, and as such, may not surface on the

conversational record as publicly available. The upshot is that when misunderstandings arise, if they are not publicly settled, they may never be resolved. In (8) we outline an example of a case where a misunderstanding remains unsettled at the end of the interaction (example adapted from Varonis & Gass 1985: 332-333).

(8)
[A customer aims to telephone a retail store to buy a new television, but mistakenly calls an operator at a repair centre]

Representative:	Seventeen inch?
Customer:	Okay.
(pause)	
Representative:	Well is it a portable?

In this example, we have a mismatch between the customer (C) and the representative (R) at the repair centre as to the primary operation of the institution. In Figure 5, we use the model from Elder and Haugh to outline the process of meaning negotiation as it occurs throughout this interaction.

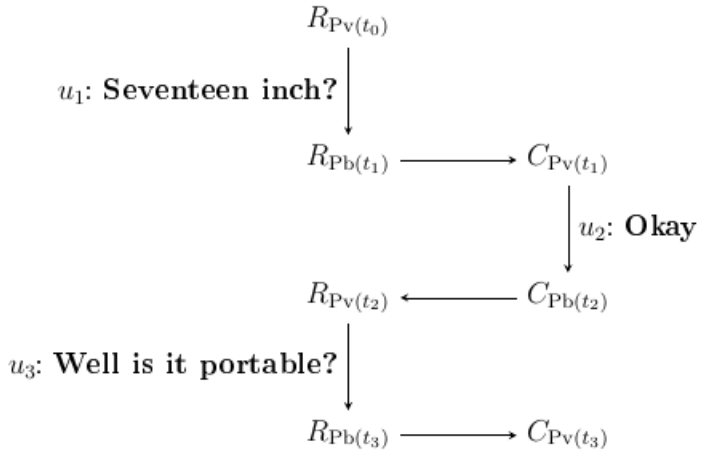

Fig. 5: Utterance meaning negotiation involved in (8)

First, the representative asks the clarification question, "Seventeen inch?". It is this utterance that we take as our u_1 that the interlocutors are trying to resolve. We know from the actual context of utterance that the representative is likely asking the customer whether they own a seventeen inch television that they need to have repaired, giving us the publicly available inference about how the representative expects to be understood through their subsentential utterance. However, we are also privy to the information that the customer wants to buy a television, so it is likely that their private inference at t_1 will not match with this public inference. Indeed, their response in u_2, "okay", is not a typical response to the publicly available question. This response thus opens the possibility that there has been a misunderstanding, adding to the conversational record another possible interpretation of the representative's u_1, namely, "Do you want to buy a seventeen inch television?". While this is not a viable possibility regarding the representative's *intended* meaning, their subsentential utterance lends itself to such an interpretation on the assumption of the different background assumption of the customer. Two of the options available for $R_{\mathrm{Pb}(t_1)}$ can thus be summarised as in (9).

(9)

$R_{\mathrm{Pb}(t_1)}$: Do you own a seventeen inch television?
$R_{\mathrm{Pb}(t_1)}$: Do you want to buy a seventeen inch television?

As we conjecture, it is the second of the two options that the customer infers, and it is the only inference that licenses their response, "okay". We thus have (10).

(10) $C_{\mathrm{Pb}(t_2)b}$: Do you want to buy a seventeen inch television?

As we see in (8), the representative pauses, signalling troubles in understanding. However, their next utterance u_3 indicates that they have not realised the source of the problem, as they

reattempt to ask about the customer's existing television by asking, "Well, is it portable?". This keeps the first option (11) regarding their utterance meaning on the table.

(11) $R_{\mathrm{Pb}(t_3)}$: Do you own a seventeen inch television?

In this respect, the interlocutors remain misaligned as to the meaning of the representative's u_1, and hence they do not arrive at a settled meaning. Needless to say, in this case, no dynamic functional proposition is available: miscommunication persists. Nevertheless, we can explain how those meanings came about at different points. What we have here is a misunderstanding stemming from a fundamental difference in the background beliefs of the interlocutors regarding the situation of discourse (SD). To put it another way, it is because the interlocutors are construing SD in different ways that they are unable to come to a mutual understanding. All in all, this example serves to show that even in the absence of a settled meaning, our dynamic pragmatic theory can also explain *why* there is an absence of a settled meaning (and so, the absence of a dynamic functional proposition that would represent it): it can not only handle co-constructed meanings, but also cases of misunderstandings proper. But this is a topic for a separate inquiry.

5. Concluding remarks

In this paper, we have proposed a novel construct of a dynamic functional proposition that captures a unit of analysis pertaining to the main, intended and recovered meanings as they are negotiated throughout an interaction. We have developed and justified this unit against the backgrounds of a contextualist theory of Default Semantics (that explains the term 'functional') and a model of joint construction of meaning by Elder and Haugh (that explains the term 'dynamic'). We also demonstrated how meanings can be formally modelled using both merger representations of Default Semantics that give us a compositional, truth-conditional account (in the sense of pragmatic compositionality of contextualist, truth-conditional theories of meaning), and the co-construction model that provides focus on the stages in co-construction. In this way, we can capture not only the linguistic meaning of what has been communicated at a punctuated moment in time (that is, a selected cut-off point), but also how meanings are proposed, understood, negotiated and settled on. To this end, our unit of analysis is flexible and dynamic. We have thus begun here to sketch the notion of a proposition that fits such a pragmatics-rich, contextualist, and cognitively real theory of meaning in interaction.

We finish this inquiry by asking: how far should we go in representing what 'lurks under the surface' of the uttered sentence? Since we are not representing the meaning pertaining to the sentence, nor necessarily even the main meaning as originally intended by the speaker, there is a question of how finely-grained meanings should be if they are to fit in a dynamic functional proposition. The answer to this question has to be sought using an empirical method: what the interlocutors themselves settle on as the main message, with all its pertinent aspects and components, is what we aim to represent. If it contains information conveyed via situational clues or shared cultural assumptions that can be relied on, these aspects have to be accounted for in the representation and reflected in the dynamic functional proposition on a par with what was explicitly uttered. As we argue here, semantic theory so

conceived is not only *not* about sentences—it is not about utterances, and not about thoughts either. It is about *people* who have these thoughts and utter these utterances. To naturalise propositions, we have to naturalise the theory of meaning itself.

To explain, let us quote Dover (2022: 193) on focusing on the person doing the uttering: "Suppose I am eager to understand you. The desire is as familiar as it is inchoate: I don't just want to understand this or that remark or action of yours; I want to understand you, more globally. How might I proceed?" Dover's research pertains to a very different tradition, which she calls 'interpersonal inquiry', considering self-construction and self-revelation in conversation (and associated epistemic, ethical, and aesthetic issues). But it is also relevant for our current project. As she says, interpersonal inquiry has a turn-taking structure: "while I reveal, you perceive, and then we switch" (p. 200). We suggest that naturalised semantics, and also striving for getting the content of a dynamic functional proposition right, cannot separate themselves from such an inquiry, as its focus is on *people and their meanings*, not their words.

Needless to say, this investigation is only the first step in reaching our goal. There are many loose ends and open questions. One of them is to specify the linguistic, cognitive and social filters that are involved in the process of meaning construction that we referred to only in passing. We need not only the sources and processes as identified in Default Semantics, but we have to go further in specifying various filters relating to the individual – such as politeness and attention – that will be important for understanding why certain meanings take precedence over others for different interlocutors at different points in an interaction.

Finally, we note some possible objections and questions for further inquiry concerning our multimodal, dynamic, flexible functional proposition. First, it opens the question of what compositionality amounts to. For us, compositionality is found at a higher level of theorisation – on the level of our naturalised propositions – but there is an inevitable debate to be had with defenders of strict semantic compositionality of sentence meaning (or, at least, an acknowledgement of disparate objectives). Next, there is the related question of our stance on the relation between conceptual and semantic representation. We briefly justified applying the term 'semantic' to such dynamic, pragmatics-dictated content (and 'metasemantics' to the foundational questions regarding the search for it), but a further discussion on the naturalisation of semantics might be of interest. After all, we risk the charge of smuggling in a fair dose of psychologism into theory of meaning. While some scholars may prefer a theory of meaning to be free from naturalising and clearly separated from the philosophical question of expressing the self, we believe that there is scope for all kinds of projects with different doses of psychologism, to suit different objectives and research agendas.

Editorial note and acknowledgements:

The paper originated as conference presentations: 'Cognitive, social and linguistic parameters for dynamic pragmatic meanings', presented at the American Pragmatics Association Conference *(AMPRA 5)*, Columbia, SC and 'Dynamic functional proposition for dynamic discourse meaning', presented at the Dynamic Pragmatics Association Workshop, Osaka University, Philosophy of Language seminar, University of Łódź, and Semantics, Pragmatics, Philosophy seminar, University of Cambridge. We are grateful to the audiences of these events for their feedback. The Osaka presentation resulted in a translation of the paper into Japanese (by Hiroaki Tanaka), forthcoming in: Tanaka, Hiroaki, Kaori Hata, Etsuko Yoshida and Masataka Yamaguchi (eds). 2024. *Towards a Dynamic Pragmatics*, volume 4. Tokyo: Kaitakusha. We express our gratitude to both publishers, Kaitakusha (Tokyo) and De Gruyter Mouton, for agreeing for the translation and the original to be published at the same time, as well as to the editors of the respective volumes, Hiroaki Tanaka and Alessandro Capone, for their

invitations. Finally, we thank the anonymous referee for making us add some necessary explanations and clarifications in the revised version, thereby making the paper accessible to a wider readership.

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