Metaphor and common ground

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Abstract Integrating metaphors into pragmatic theory remains a challenge. Grice argued that the tenor of a metaphor is an implicated proposition while Contextualists have argued that it belongs in 'what is said' or the Explicature. I show that the contextualist arguments are inconclusive and they leave the role of the vehicle undefined. Moreover, neither the Gricean nor the Contextualist analyses can account for the most highlighted feature of metaphors: their indeterminacy; we cannot be sure as to what a speaker meant with a metaphor, but communication can proceed, nonetheless. I propose that we move away from binary models of communication (based on what is said/what is implicated) and instead approach the problem from the perspective provided by Common Ground, with special attention paid to the different updates in the discourse models of speakers and hearers that take place when an utterance is shared.

0. Introduction

Grice (1989) famously regarded metaphors as implicatures triggered by flouting the maxim of quality (see also Martinich 1984, Searle 1993). Later work in the Contextualist tradition (Bezuidenhout 2001, Carston 2002, Recanati 2004, Sperber and Wilson 1995, Wearing 2006, Wilson and Sperber 2012) argue that metaphors are constituents of a pragmatically enriched explicit content. Both approaches boast a number of insights but also present some empirical and theoretical challenges. This state of affairs suggests that a different approach is needed.

The above-mentioned theories share the assumption that the addition of new information to an audience's discourse model follows a binary division: propositions in a communicative exchange either belong to what is explicitly communicated - 'what is said' or the Explicature - or they belong in 'what is implicated'. Let me introduce some terminology. As is traditional in rhetorical work (see Richards 1932) the linguistic expression actually uttered – a syntactic structure mapping to a semantic representation and an externalization system - is referred to as the vehicle, while the intended

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metaphorical meaning is the tenor.[1] In these terms, the Gricean approach takes the vehicle to be 'what is said' and the tenor 'what is implicated' while contextualists take the tenor to be 'what is said', leaving the vehicle undefined. I show that the binary division 'what is said/implicated' does not provide a coherent analysis of the properties of tenor and vehicle; instead, I invite the reader to consider an approach in which conversational dynamics are framed within an articulated model of how the information in the discourse model is updated. I account for some properties of metaphors that have been highlighted in the scholarship in this area within this articulated model of discourse updates, therefore providing evidence in support of this model. Other questions in the philosophy of metaphor, such as the nature of the difference between literal and metaphorical meaning or the integration of the metaphor in its frame will receive relatively less attention (see Hills 2022 for an updated discussion of these topics, see also Ritchie 2011.)

The articulated model that I use here is based on López (2023), which presents an approach to conversation dynamics in which every new utterance may trigger multiple updates in the discourse models (henceforth DM) of hearer and speaker. When the content of a proposition has been successfully communicated, the DM of the hearer minimally undergoes the following updates (i) an utterance has been pronounced; (ii) the utterance reflects a belief of the speaker; (iii) the utterance has a truth value. The DM of the speaker has the following updates (i) the hearer acknowledges the content of the utterance; (ii) the hearer has accepted – hopefully believed - the utterance. A new common ground (henceforth CG) arises that lies at the intersection of speaker's and hearer's updates. Although the fact that updating a DM and a CG involves multiple updates is recognized since Stalnaker (1978), the model proposed in these pages puts this multiplicity explicitly front and center and exploits its explanatory potential. I would like to suggest that using this articulated CG in the account of metaphors may serve as a proof of concept of its essential correctness to study conversational dynamics.

This approach allows us to cut the Gordian knot that the earlier binary approaches have tied around the analyses. Additionally, it is especially suitable to deal with one of the outstanding puzzles that metaphors present. As has been noted in early work (see Searle (1993: 87), when a speaker pronounces a novel or particularly creative metaphor, the hearer cannot be certain that they fully grasped the speaker's meaning. Interestingly, this uncertainty does not necessarily interrupt the conversation. Thus, when Romeo says: "Juliet is the sun", Mercutio cannot know what Romeo means: Is Juliet warm? Radiant? Unique? Or dangerously overheated? This fact has led scholars to claim that there is something ineffable about metaphors that simply must be left out of the analysis; some scholars have even argued that there is no meaning in a metaphor beyond the literal meaning (Davidson 1978, Lepore and Stone 2010). But Mercutio does not need to know what Romeo exactly meant in order for the conversation to proceed – it suffices that the proposition that Romeo meant and the one that Mercutio generated intersect, even if the intersection is something banal like "Juliet is an extraordinary woman". The present model provides room for this intersection, while the approaches tried so far do not have the tools for it.

This article is organized as follows. Section 2 discusses the Gricean model of metaphor as implicature as well as the Contextualist approaches. Section 3 is a description of some of the properties of metaphors that a philosophical theory of human communication

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[1] Searle (1993: 93-4) critiques this terminology, which seems to presuppose that every metaphor is built on top of a literal expression. This presupposition is false, in view of the existence of mixed metaphors: 'the bad news is a block of ice'. I adopt the traditional terminology only for convenience.

should account for. Sections 4-6 develop the proposal. The paper finishes with the conclusions.

1. Metaphor as implicature or explicature

Grice's work is justly famous for presenting a coherent philosophical theory of human linguistic communication in which the codification~de-codification of the linguistic signal interacts with plausible inferences. He proposed that linguistic interpretation goes in two stages. In the first stage, an interlocutor processes the conventional meaning of an utterance, consisting of words and syntax. Then lexical and syntactic ambiguities are resolved and the reference of pronouns and deictics is fixed: we obtain what is said. There is a second stage driven by mechanisms of inference that generate additional propositions and yield the speaker's meaning.[2]

Grice's theory of language use encompassed metaphors. In Grice's framework, the vehicle of a metaphor is an obvious falsehood, hence a flouting of his Maxim of Quality. Flouting triggers an implicature – the tenor of the metaphor. He also realized that an obvious falsehood could not be regarded as 'what is said'. Thus, he proposed that the speaker 'makes as if to say' the vehicle when actually intending to mean something else (see Martinich 1984: 36 for an extended discussion, also Searle 1993). 'Making as if to say' is a difficult concept to define but seems to embrace all instances of flouting the quality maxim.

Contextualism rejects the idea that the tenor of a metaphor is an implicature, arguing instead that it forms part of explicit meaning. Bezuidenhout (2001) and Wearing (2006) claim that the tenor is part of 'what is said', it is directly asserted (or asked, or commanded). However, their notion of 'what is said' is more encompassing than Searle's (1993) or Grice's (1989), since it includes pragmatic enrichment – Wearing calls it 'what is said(c)'. Recanati (2001) and Nogales (2012) also argue that the tenor belongs in an enriched 'what is said'.

Similarly, the Contextualist framework called Relevance Theory (RT) postulates a level called Explicature that includes the logical form of the utterance as well as whatever pragmatic enrichment is necessary to derive a propositional content in the place of 'what is said'. RT, in particular Carston (2002, 2010), Carston and Wearing (2015), Sperber and Wilson (1995), Wilson and Sperber (2012) argue that metaphors are part of the explicit content of an utterance, their explicature. Since the 'what is said' of Contextualism is not very different from what RT calls explicature, I classify them together, unified by a denial that metaphors involve implicatures.

RT's approach to metaphor includes a novel insight. RT proposes to treat metaphors as instances of loose talk, which undergo a process called ad hoc concept construction (Carston 2002, 2010, Sperber and Wilson 1995, 2010, Wilson and Sperber 2012).[3] For instance, imagine Pat and Chris are discussing the possibility that Sam could become the new dean. Pat says:

(1)   Sam is a bulldozer.

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[2] The Gricean schema must be understood as an abstract representation of the logic underlying the system and not a representation of the order in which information is processed. As Levinson (2000: 186-198) shows, there is some empirical data that suggest that resolution of syntactic ambiguity and anaphor antecedent relations is dependent on an implicature, which implies a loop.

[3] The formulation of the ad hoc concept construction has varied slightly over the years. Here I stick more closely to Wilson and Sperber (2012). Carston (2010) presents a nuanced discussion in which not all metaphors are entirely reduced to ad hoc concept construction.

Obviously, Sam is a human being, not a piece of heavy machinery. In order to interpret this sentence adequately, the concept denoted by the noun 'bulldozer' needs to be modulated into BULLDOZER*, a broader term that can be used to denote humans with some additional properties associated with bulldozers (strength, resilience, etc.). Likewise, when someone says something about the "pearls in his mouth", a new concept PEARL* has been created that denotes teeth and highlights their whiteness. Metaphors in RT are just an extreme case of loose talk.[4] This is what Wilson and Sperber (2012) call a deflationary theory of metaphor because no special mechanism is required to account for it.

A direct consequence of RT's approach is that there is no independent linguistic representation of a vehicle. The phatic act is translated directly into an explicature where the metaphorical component has been turned into an ad hoc concept.

I think the loose talk theory of metaphor provides a valuable insight and the deflationary approach is attractive in its simplicity. However, the role of the vehicle in communication is left out of the analysis. This is a drawback because, as I show below, the vehicle does play a role in communication and therefore needs to be integrated into the analysis.

2. Features of metaphors

The claim that unifies the different Contextualist positions is that the tenor of a metaphor (or the ad hoc concept of RT), is a constituent of 'what is said'/Explicature .The arguments developed within this tradition focus on purported properties that differentiate the tenor of a metaphor and an implicature. If the tenor of a metaphor and an implicature are sufficiently distinct, and since the latter is by definition not a constituent of 'what is said', it follows that the tenor must belong to 'what is said' - within a binary view of the workings of communication.

I submit two objections to this approach. First, the vehicle is left with no independent semantic-pragmatic representation, although we can easily detect that the vehicle plays a role in interpretation. Second, once the empirical properties of the trope are explored in some detail, we see that the properties that supposedly separate the tenor from the implicature do not in fact do so. I argue that the properties of metaphors lead us to apparent paradoxes within the binary model of human communication, thus laying the groundwork to argue for a different approach.

2.1 *Intuitive directness*

The first argument that the tenor is a constituent of 'what is said' can be labeled as the "intuitive directness" of metaphors (Wearing 2006). Wearing (2006) argues that people are usually able and willing to respond to the tenor of the metaphor. Consider the following example:

(2)   Romeo: Juliet is the sun.
         Mercutio: Yes, she is.

Mercutio is not responding here to the vehicle but to the tenor; Mercutio is saying: 'yes, she is beautiful, radiant, warm, etc.' he is not saying that Juliet is, literally, the sun.

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[4] The general idea did not originate in RT, although they did develop it in earnest. Davidson (1978: 34): "in metaphor certain words take on new, or what are often called "extended" meanings. When we read, for example, that "the spirit of god moved upon the face of the waters," we are to regard the word 'face' as having an extended meaning."

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Therefore, the tenor is something accessed directly, not obtained after an inferential process – I will go back to this example in section 3.7.

Since the "direct access" authors argue that the tenor of a metaphor is 'what is said' and not implicated because it can be directly responded to by a listener, it follows that a prediction of the direct proposal is that a listener will not respond to implicated propositions. This prediction does not hold. I find that one can build examples in which an interlocutor responds to the main proposition being asserted or to the implicated proposition. In the following example, R1 is ambiguous, because the discourse anaphor 'that' could refer back to 'Pat has work' or to 'Pat is not coming to the party'. R2, on the other hand, is a response to the implicature triggered by Pat's answer to Sam's question:

(3)   Sam: Do you want to come to the party?
        Pat: I have work.
        Sam, R1: That's a shame
        Sam, R2: What? No, you are coming with me.

Thus, the "intuitive directness" argument does not tease apart asserted and implicated propositions. Therefore, whether the tenor of a metaphor can be responded to or not does not provide an argument that the tenor is part of 'what is said/Explicature'.

        Somewhat tangentially, conversation participants may respond to the vehicle in tandem with the tenor in an extended metaphor. The following example is inspired by a similar example in Bezuidenhout (2001), proposed as evidence that speakers respond to the tenor exclusively:

(4)   Sam: Bill is a bulldozer.
        Pat: I disagree. Bill is a pushover.

Presumably, Sam meant to say that Bill is a tough individual. Pat disagrees, but she does not disagree with the literal meaning of "Bill is a bulldozer". Her disagreement is with the intended tenor of the metaphor. But again, it is possible to construct an example in which Pat responds to the vehicle:

(5)   Sam: Bill is a bulldozer.
        Pat R1: I agree. I hope he will be able to remove all that dirt in the dean's office.
        Pat R2: I disagree. He is more like a toy truck in the dean's hands.

Pat's alternative responses to Sam's assertion in (5) develops the "bulldozer" metaphor, utilizing the original vehicle to articulate a new one. In (5R1), Pat suggests that Bill will clean up the dean's office in the same way that a bulldozer removes dirt. In (5R2), Pat opposes the bulldozer metaphor with a "toy truck" metaphor. Both responses are directed to the vehicle, which shows that "intuitive directness" is not a property that separates tenor from vehicle.

        The following example reiterates the same conclusion. Mercutio chooses to elaborate on the vehicle of the metaphor supplied by Romeo.

(6)   Romeo: Juliet is the sun.
        Mercutio R1: And we are moons reflecting her light.
        Mercutio R2: I disagree. I think she is only a moon that reflects the light that shines from Portia.

I think it is plausible to assume that we can elaborate on and respond to an asserted proposition, an implicated one, the tenor of a metaphor or the vehicle metaphor. If "intuitive directness" is a property of constituents of 'what is said', as claimed by Bezuidenhout (2001) and Wearing (2006), then both vehicle and tenor are constituents of 'what is said'. The binary model of linguistic communication has nothing to say about this.

I suggest that the response test tells us whether a proposition is stored as a constituent of the interlocutors' CG such that it can then participate in future developments of the CG; it does not provide evidence that the proposition is "intuitively direct". And the result of the test is that the vehicle and the tenor of a metaphor, as well as an implicated proposition, are stored in the DMs of a speaker/listener.

Having said this, I think that Wearing's point regarding (2), namely, that Mercutio responds to the tenor and not to the vehicle is true. But the reason for this is because (2) involves verb phrase ellipsis, which is a form of anaphoric reference. I discuss this in section 3.7

2.2 *Reporting*

The second argument that the tenor is 'what is said' uses reporting as a test. The idea is the following: in a conversation exchange involving a metaphor, an interlocutor may report on the content of the exchange by using the tenor of the metaphor. As we have seen, Romeo told Mercutio that, in his view, Juliet is the sun. This is shown in (7a). Suppose that Portia subsequently asks Mercutio what Romeo said. In this situation, Mercutio may well answer that Romeo said that Juliet is beautiful, as in (7bR1), using the tenor of the metaphor (or what Mercutio takes the tenor to be) rather than the vehicle. Bezuidenhout (2001) and Nogales (2012) use this datum to argue that the tenor is the actual content of the metaphorical utterance, the 'what is said' (while Camp (2006) and Genovesi (2020) show some skepticism). A weakness of the argument is that one can report just as easily on the vehicle of a metaphor. In example (7bR2), Portia will understand that Mercutio is reporting that Romeo used the sun metaphor to talk about Juliet's beauty (or warmth, or shine or whatever

(7)　　a.　　Romeo to Mercutio: Juliet is the sun.
　　　　b.　　Portia: What did Romeo say?
　　　　　　　Mercutio R1: He said that Juliet is beautiful.
　　　　　　　Mercutio R2: He said that Juliet is the sun.

If both R1 and R2 are acceptable answers to Portia's question, then the logic of the argument should lead us to the conclusion that both vehicle and tenor are constituents of 'what is said' within a binary model.

Notice that at least some implicatures can also be reported on (as pointed out by Camp 2006). The example (8a) shows a conversation between Sam and Pat. Pat says that he has work, from which Sam concludes that Pat cannot come to the office party. In (8b), Sam reports this conversation to Chris. Interestingly, she chooses to report on her own implicature rather than Pat's literal words.

(8)　　a.　　Sam: Can you come to the office party?
　　　　　　　Pat: I have work.

　　　　b.　　Chris: Can Pat come?
　　　　　　　Sam: No, he can't.

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Therefore, we are again in a pickle: both the vehicle and the tenor of a metaphor can be used to report on an earlier conversation and therefore both are constituents of 'what is said' – and apparently, so should implicatures be. It looks like binary models of conversation cannot provide a coherent picture.[5]

2.3   *Transparency of interpretation*
The "directness" of metaphors can be understood in a different manner. The idea here is that a listener does not consider the literal meaning first and then extracts the metaphorical meaning from the literal meaning by means of an inferential process, as is explicitly presented in Grice's system. Instead, listeners go for the metaphorical meaning directly (Bezuidenhout 2001, Recanati 2004, Wearing 2006). A classic example is Recanati's "the ATM swallowed my card" (Recanati 2004:76). Knowing the meaning of 'swallow' and what ATMs sometimes do to unattended cards, one can get the meaning of the expression by minimally adjusting the meaning of 'swallow'. This form of directness is grounded on individual speakers' intuitions that the interpretation of a metaphor is transparent and not the result of an inference mechanism. However, as Camp (2006) points out, some metaphors are not so routinized. Some psycholinguistic research cited in Camp (2006) shows that listeners/readers take longer to process a novel metaphor than a sentence that only has a literal meaning. Should routinized metaphors be part of 'what is said' while novel metaphors involve an implicature? It is likely that there is a continuum rather than a categorical split.

2.4   *Mixed metaphors*
We have seen in 2.1, 2.2 and 2.3 some evidence that when we interpret an utterance that includes a metaphor, the vehicle of the metaphor does not vanish – or, to put it in a binary model, it appears to be part of 'what is said'. Here is another piece of evidence. As Carston (2010) points out, mixing metaphors gives an awkward result:

(9)   If you find a student with a spark of imagination, water it.

<div align="right">Carston 2010: 305</div>

A 'spark', in this context, probably denotes a small amount of something that can grow to become very rich; 'watering something' means to feed, to nurture it. So, (9) should mean: if you find an intellectually promising student, nurture that intellect'; instead, it seems to mean something like the opposite. The fact that the sentence sounds awkward, suggests that the vehicle of the metaphor contributes to the interpretation of the whole utterance – this is what Carston felicitously calls "the lingering of the literal". In fact, Rubio Fernández (2007) experimental work confirms that the non-metaphorical features of the vehicle remain activated even after the metaphor-consistent features become prominent. The conclusion that I would like to bring home is that we need to develop a model of metaphor interpretation that reflects the fact that both vehicle and tenor are present in the CG of the interlocutors. In a Contextualist model, the tenor is in what is said/Explicature but the vehicle is undefined.

2.5   *Psycholinguistics*
One could also try and find evidence for directness in empirical psycholinguistic work as well as neuroscientific work. The results are decidedly mixed, as summarized by

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[5] Camp (2006) also argues that reporting is not a good method to identify 'what is said' because more often than not metaphors are subject to multiple interpretations and plausible ways of reporting. See Nogales (2012) counterargument and Genovesi's (2020) response.

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Genovesi (2020). Early work seemed to find that experiment participants can process metaphorical speech as fast and as accurately as literal speech, as measured in experiments involving reading and reaction times. Consequently, so the argument goes, metaphors must be part of 'what is said' (Nogales 2012). Be that as it may, the findings reported by Nogales have been qualified, since it has been found that novel metaphors take more processing cost than literal expressions or familiar metaphors (Genovesi 2020).

Along the same lines, Wearing (2006) argues that EEG investigations suggest that there is no categorical schism between literal and metaphorical language. However, Genovesi (2020: 30-1) discusses a number of studies that suggest that there is such a schism. Most interesting to our purposes, Genovesi discusses EEG studies that show an amplified N400 for the processing of metaphors as compared to literal expressions. Since the N400 is associated with lexical anomalies, this result suggests that metaphors involve higher lexical difficulty. The model of metaphor interpretation that we develop should reflect the fact that a metaphor is, at its core, a lexical anomaly.

2.6   *The tenor may yield an implicature*

Bezuidenhout (2001) presents the following syllogism. As Grice showed, 'what is said' is the platform for implicatures. Metaphors are also platforms for implicatures. Therefore, metaphors are also constituents of 'what is said' (see also Nogales 2012). Consider the following example (built on an example discussed by Bezuidenhout 2001and Camp 2006):

(10)   Pat: Will you go out with Chris?
        Sam: She is the Taj Mahal.

Pat first needs to process that Sam's utterance is a metaphor, with the tenor meaning something like "Chris is ugly." The implicature "Sam will not go out with Chris" is built on the tenor of the metaphor, not the vehicle.

For the logic of Bezuidenhout's argument to go through, we need to show that only constituents that are irrefutably constituents of 'what is said' can give rise to implicatures. However, as Camp (2006) points out, an implicature can also serve as a platform for another implicature. The following example is based on one by Camp's:

(11)   [Context: Sam and Chris usually go to the movies every Thursday. It is one of
        the rituals that have shaped their relationship since the beginning]
        Sam: Which movie should we watch tonight?
        Chris: I think I will have a beer with my friends tonight.

The immediate implicature is that Chris will not go to the movies with Sam. But this implicature gives rise to another one: Chris is breaking an old routine, signaling a detachment from the relationship itself. Camp's example shows that a proposition does not need to be part of 'what is said' to trigger an implicature, thus denting Bezuidenhout's argument.

2.7   *Commitment to truth*

In sections 2.2-6 we have seen that the different tests that have been used to tease vehicle and tenor apart in order to argue that the latter is a constituent of what is said do not seem to stand up to scrutiny. It seems that what we may conclude so far is that both vehicle and tenor are represented in the CG of speaker and hearer. However, there are two other properties that do in fact separate the tenor: only the tenor bears a

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commitment to the truth of the proposition and only a tenor can be the antecedent of an anaphoric relation. I discuss these two properties in sections 2.7 and 2.8.

Nogales (2012) argues that the speaker's commitment to the truth of the proposition teases metaphors and implicatures apart. Since Grice's work, we have known that implicatures can be cancelled and even denied, as exemplified in (12a). This can lead us to conclude that speakers are only weakly committed to the truth of the implicated propositions, as opposed to the uttered proposition. Interestingly, the tenor of a metaphor cannot be cancelled, as shown in (12b):

(12) a.   I am busy – but I think I will go to the party afterwards.
      b.   #You have pearls in your mouth – but your teeth are brown.

Since the tenor of a metaphor cannot be cancelled, Nogales (2012) claims that the tenor does have the truth commitment of an asserted proposition.

Interestingly, the tenor of a metaphor also passes the most stringent test to detect assertions, the knowledge challenge (Montminy 2020: 373). Thus, if someone says "Pam is a bulldozer", one can challenge this claim the way we challenge a literal assertion "how do you know that?", "what is your evidence to say that" (the answer could be: I know she is a bulldozer because I saw her performance in the Promotion Committee)?

In a metaphorical context, the commitment to truth is always based on the tenor, not the vehicle. If someone is to deny (12b) and say that the addressee doesn't have pearls in their mouth, surely this means that their teeth are not white. This means that although the vehicle and the tenor are both represented in the CG of the participants, their status within this CG must be somewhat different.

Nogales' point regarding the truth commitment of the tenor is well made. However, it is not the case that implicatures do not carry any truth commitment. The truth commitment of implicatures has been empirically studied in the literature of lies, and the conclusion is that a true statement that yields a false implicature is judged by many subjects to be an almost-lie (see in particular Wiegmann et al. 2021). This naturally leads to the conclusion that there is a substantial level of commitment to truth in implicatures, even though this level fluctuates with context, perceived intent, and other variables. In any case, commitment to truth is not a factor that categorically teases the tenor of a metaphor and an implicature.

2.8   *Anaphor*

Only the tenor can be referred to anaphorically. Consider the following exchanges:

(13)   Romeo: Juliet is the Taj Mahal.
        Mercutio: Oh, that's a shame.

(14)   a.   Romeo: Juliet is the sun.
              Mercutio: That's great!
        b.   Romeo: Juliet is not the sun.
              Mercutio: That's a shame!

The anaphoric determiner 'that' in the (13) and (14) examples can only refer to the tenor, not the vehicle. This is even clearer in (14b), where Romeo utters a sentence that is clearly true because humans are not celestial bodies, so Mercutio's reply really must be about the tenor. In this respect, the vehicle is different from an implicature, since

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implicatures can be antecedents for anaphors. This can be seen in (15), focusing on Sam's response 'that's a shame':

(15)   Sam: Can you come?
        Pat: I have work.
        Sam: That's a shame!

In this example, 'that' can take either the asserted proposition or the implicated one as the antecedent (it is a shame that Pat has work, or it is a shame that Pat can't come.)
This is a good point to go back to Wearing's (2006) example (2) above, here repeated as (16):

(16)   Romeo: Juliet is the sun.
        Mercutio: Yes, she is.

Wearing (2006) uses this example to argue that in discourse interlocutors will respond to the tenor of the metaphor and therefore the tenor belongs in 'what is said'. However, I argued in section 2.1 that both vehicle and tenor can be responded to and therefore that both are intuitively direct.
Notice that (16) is an example of Verb Phrase Ellipsis (VPE), which linguists analyze as a type of anaphor (see e.g. Sag 1980). (16) is therefore parallel to (13)-(15) and it provides further evidence that anaphors cannot take the vehicle of a metaphor as an antecedent.
One of the conclusions reached in sections 2.1-2.4 is that the vehicle is a constituent of the CG of the participants – it can be reported on, elaborated on, etc. However, the anaphor data suggest that the status of the vehicle in the CG of the participants in a conversation is different from the tenor or even an implicature.

2.9   *Summary: some desirable features of a theory of metaphor within a theory of linguistic communication.*

Let's take stock of what we have so far. We have concluded that the vehicle has a representation in the DMs of the interlocutors and consequently participates in the interpretation of the utterance. This argues against Grice's notion that the vehicle is only something that one "makes as if to say". Conceptualists argue that the tenor is 'what is said', but we have also seen that the arguments presented in this regard fail to clearly tease apart tenor and vehicle – and even implicatures – except with regards to commitment to truth and anaphoric dependencies. Finally, the data presented here is also incompatible with the RT approach: in RT, the vehicle does not have an independent representation anywhere, only the ad hoc concept has one. What these models have in common is their binarity: x either belongs in P or in Q. The properties of tenor, vehicle as well as implicatures cannot be properly accounted for in a binary model.
Let us review the properties that a theory of metaphor in conversation should have, reframing our discussion by using the notion of CG, intuitively understood at this point.

Property 1. The listener may not capture exactly what the tenor of the metaphor is supposed to be (in fact, the speaker themself may not be able to define it exactly) but this is not an obstacle for a dialog to continue. In other words, the representation of the tenor of the metaphor in a CG needs to overlap the DMs of speaker and addressee, and be just "good enough" for communication to succeed (Gibbs 2023, Ferreira and Patson

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2007). This property is not discussed by Grice or the Contextualists in the context of their analysis of metaphor.[6]

Property 2. The vehicle is stored in the CG of the participants in the conversation, can be elaborated and reported on.

Property 3. The tenor is also stored in the CG and can also be elaborated and reported on.

Property 4. The truth values of the utterance are calculated on the tenor. Possibly relatedly, only the tenor can stand as an antecedent of an anaphor.

2, 3 and 4 together lead to the conclusion that both the vehicle and the tenor are represented as linguistic constituents in the DMs of both participants. However, they are represented differently because only the tenor becomes a true independent constituent of a DM. I take it that any theory of conversation that takes metaphors into consideration must account for properties 1-4.

Sections 3, 4 and 5 are devoted to the presentation of my proposal and an accounting of the properties of metaphors described above. In section 3, I present a description of what a metaphor is within a fairly uncontroversial theory of language. In section 4 I present the current model, the articulated CG. Section 5 shows how the properties of metaphors shown in section 2 are accounted for in an articulated CG.

3. Proposal, part 1: metaphors are rooted in syntax

Grice thought the key feature of a metaphor is that it is a flouting of quality. However, twice-true metaphors do not violate quality: utterances like 'Juliet is not the sun', 'Sam is not a bulldozer' are truthful enough. Moreover, the psycholinguistic research on metaphors cited above in section 2.5 shows that metaphors are processed as lexical anomalies. Let's then proceed from here.

I take syntax to consist of a Logical Form, as understood in generative grammar: a disambiguated syntactic structure tagged with features relevant for semantic/pragmatic interpretation (features related to information structure notions such as topic and focus are well-studied examples, see Rizzi and Cinque 2016). A metaphor at its core is a lexico-syntactic anomalous predication:

(17)   Juliet is a bulldozer.
(18)   Mercutio is the sun.
(19)   Chris is a block of ice.
(20)   As a Harvard graduate, he also owned the aura of fungoid self-congratulation that Nordstrom identified with Ivy League types. (Jim Harrison, The man who gave up his name.)
(21)   People finally don't have much affection for questions, especially one so leprous as the apparent lack of a fair system of rewards and punishments on earth. (Jim Harrison, The man who gave up his name.)

The examples (17)-(21) all include a violation of selectional restrictions because an inappropriate argument has been used to saturate a predicate or a semantically

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[6] Contextualism and, in particular, RT do discuss in some detail that speaker and addressee may have slightly different interpretations of the same utterance. My point, however, is that their analysis of metaphors does not explicitly address the indeterminacy property.

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anomalous adverb has been used to modify a noun. Humans are not machinery, stars, or frozen water; no type of self-congratulation is a fungus, and a question cannot suffer from leprosy. I take it that this violation is registered by the hearer as an anomaly. This matches what has been found in EEG research, as reported by Genovesi (2020).

I indicate the lexical anomaly with an * on the Logical Form of the utterance proffered. When a Logical Form with a metaphor is to be interpreted by semantics/pragmatics it already has been tagged indicating that a further operation beyond plain compositionality is necessary for full interpretation.

Other metaphors involve violations of selectional restrictions in the current world rather than every possible world and therefore give rise to grammatically correct sentences even if discordant with the listeners knowledge of the world. The following belongs in this category:

(22)   Sergio Ramos is a butcher.

Assuming that the interlocutors are talking about footballers, and both are familiar with Sergio Ramos, the listener will understand that the speaker meant to say that Sergio Ramos is a particularly violent player, not that he works in a market selling meat. I annotate this violation with a #, to indicate that selection has been violated only in the actual world with regards to the hearer's knowledge base.

Finally, there are so-called twice-true metaphors, exemplified in (23). As mentioned, these metaphors do not flout quality since they are trivially true. Instead, they seem to flout quantity. Flouting quantity makes the utterance pragmatically anomalous because they provide no new information to the interlocutor:

(23)   a.   No man is an island.
        b.   Juliet is not the sun.

4. Proposal, part 2: the articulated CG

I build on the notion of CG, as developed in the work of Stalnaker (1978 & ff) as well as Stokke (2018), among others. Two participants in a conversation each have a DM in their heads, which minimally contains referents and propositions. The intersection of the DMs of the participants in a discourse is what we call a CG. The CG shapes the subsequent conversation - let's call this the PreCG (the CG that precedes an utterance.) As a result of a conversation exchange, the CG of the participants is altered: let's call it PostCG (the CG that follows an utterance). A conversation is a function from a PreCG to a PostCG (and since a CG is a set of possible worlds, an utterance is a function from possible worlds to possible worlds, as in Stalnaker 1978).

Stalnaker (1978) notes that an utterance may make multiple alterations in the interlocutors' PreCG: the fact that someone said p, the beliefs that p reveals, the content of p itself. I would add that PostCG may also include some new implicatures. However, as far as I know, this complexity of CG alterations has not been exploited in the literature. Let's articulate in detail how the speaker and listener's DMs and their CG are impacted when the speaker utters a simple assertion, like 'the cat is on the mat' and the speech act is fully successful. This is shown in Figure 1, (adapted from López 2023). This and all the other subsequent examples feature declarative sentences with the illocutionary force of an assertion.

	S says that p	Chris says to Pat: "the cat is on the mat"
Addressee updates		
Step 1.1:	S has said that p	Chris has said that the cat is on the mat.
Step 1.2:	S believes that p	Chris believes that the cat is on the mat.
Step 1.3:	p	The cat is on the mat.
Speaker updates		
Step 2.1	H acknowledges that S has said that p	
Step 2.2	H believes that S believes that p	Pat believes that Chris believes that the cat is on the mat.
Step 2.3	H believes that p	Pat believes that the cat is on the mat.
PostCG:	S has said that p	
	p is believed by S and H	
	p	

S=speaker
H=addressee

Figure 1

When Chris says "the cat is on the mat", the discourse model of the addressee – Pat - is updated with the information that Chris has said that the cat is on the mat (Step 1.1). As argued in (López 2023), Step 1.1 suffices to generate truth commitments on the speaker, which can be tested with follow-up questions (what made you say that the cat is on the mat?) or can be challenged (why did you say something different earlier?).

Then, the addressee may conclude that the speaker believes that the cat is on the mat (Step 1.2), provided that the context warrants that the speaker will speak truthfully, and there are no warning signs for the listener. Stalnaker (2002) points out that a successful exchange does not require that the addressee believes what the speaker says, sometimes the weaker attitude of 'accepting' suffices. This attitude surfaces when there is an introductory hedge to what the speaker says ("for the sake of argument, assume…") or an immaterial inaccuracy. For our purposes, we can have the addressee believe p in the general case. Finally, the addressee may add to her DM that the cat is, in fact, on the mat (Step 1.3).

As for the speaker, here are the changes that take place in their DM: In Step 2.1, S notes that H acknowledges that S has said that the cat is on the mat. Then, in Step 2.2, S notes that H believes what S has said. Finally, Step 2.3 says that S lodges in their DM that H believes (or accepts) that the cat is on the mat. These three steps, together with the three updates to the H's DM, constitute a canonical, successful communication.

As mentioned, the CG is at the intersection between the speaker's and the listener's DMs. In an ordinary, canonical conversation we expect to have a shared belief in the proposition that the speaker uttered and an assumption that the proposition is correct. The proposition uttered, which used to be only in the S's DM, is now in their PostCG.

Let's now consider how implicatures are added to the CG. Implicatures are propositions that are adopted by the addressee on the basis of what the speaker has said because the listener thinks they represent the speaker's meaning. In a successful exchange, the implicatures are shared by speaker and addressee. Consider the following example:

(24)   Pat: Will Mary ask Sally out?

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Chris: Sally is a Yankees fan.

Chris's answer triggers an implicature: Mary will not ask Sally out because Sally is a Yankees fan. This implicature relies on a PreCG in which Pat and Chris share the information that Mary despises the Yankees and loves the Red Sox. Figure 2 articulates the exchange:

Addressee's (Pat's) updates

Step 1.1: Chris has said that p1= "Sally is a Yankees fan."
Step 1.2: Chris believes that p1=Sally is a Yankees fan.
           Chris believes that p2=Mary will not ask Sally out because Sally is a Yankees fan.
Step 1.3: p1=Sally is a Yankees fan.
           p2=Mary will not ask Sally out because Sally is a Yankees fan.

Speaker's (Chris's) updates

Step 2.1: Pat acknowledges that I have said that p1= "Sally is a Yankees fan."
Step 2.2: Pat believes that I believe that p1=Sally is a Yankees fan.
          Pat believes that I believe that p2=Mary will not ask Sally out because Sally is a Yankees fan.
Step 2.3 Pat believes that p1=Sally is a Yankees fan
          Pat believes that p2=Mary will not ask Sally out because Sally is a Yankees fan.

PostCG: Chris has said that p1= "Sally is a Yankees fan
                Chris and Pat believe that p1= Sally is a Yankees fan.
                Chris and Pat believe that p2=Mary will not ask Sally out because Sally is a Yankees fan.
                p1=Sally is a Yankees fan.
                   p2=Mary will not ask Sally out because Sally is a Yankees fan.
                                      Figure 2

Step 1.1 is identical as in Figure 1: the addressee simply records in their DM what the speaker has just said. Then Step 1.2 kicks in (if the addressee has no reason to doubt the speaker). Since this is the point when the addressee reaches conclusions regarding what the speaker believes, this is also the point when implicatures kick in. In Figure 2, I have written the implicatures with an extra tab, to indicate that their status in the DM is not exactly the same as that of an explicitly uttered assertion. The extra tab acts as a diacritic that expresses the subordinate status of the implicated proposition with respect to the uttered proposition. Although truth commitments do emerge from implicatures, the empirical work on lying and misleading suggests that the level of commitment is somewhat lower for implicatures, as discussed in section 2.7.
In Step 1.3, the content of Chris's statement as well as the implicatures drawn from it are lodged in the hearer's DM.
As for the updates in the speaker's DM, they respond to the hearer's reactions to what the speaker said and follow the updates in the hearer's DM. Finally, the PostCG includes the beliefs shared by speaker and addressee, including their shared implicature. With this I finish my brief presentation of the articulated CG.

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5. Proposal, part 3: metaphors within the articulated CG

5.1   *Mechanics*
In this section we articulate the updates in the CGs of speaker and hearer that take place when the speaker uses a metaphor. Consider the following exchange:

(25)   [Context: Mercutio and Romeo are discussing who should be the next dean. They have both agreed that the current dean is a lazy pushover, and they feel that is not good for the department.]
Mercutio: What do you think of Juliet?
Romeo: Juliet is a bulldozer.

I suggest the following updates to Mercutio's DM may take place as a result of Romeo's utterance:

Mercutio's updates:

Step 1.1: Romeo has said p1= "*Juliet is a bulldozer."
Step 1.2: Romeo believes that p2= Juliet is resilient.
            Romeo believes that p3= Juliet will make a good dean.
Step 1.3: p2=Juliet is resilient
            p3= Juliet will make a good dean.
                        Figure 3

Let's examine these steps in detail:

In Step 1.1, the fact that Romeo said "Juliet is a bulldozer" is lodged in Mercutio's DM. However, since there is a violation of a selectional restriction, it is lodged with an asterisk. This asterisk acts to suspend the commitment to the truth of the statement. It is not that the statement is "false", rather, the truth commitment is suspended. This I believe is how one should understand Grice's intuitive remark that when we flout quality we are "making as if to say". However, Romeo did not just produce a meaningless phatic act: there is a declarative Logical Form and some commitments do arise: Romeo has claimed that it is appropriate to predicate the property 'being a bulldozer" of "Juliet" in the context of a discussion as to who should be the next dean and Mercutio has incorporated this claim into his DM. Since Romeo has generated this commitment, Mercutio will have to figure out what makes this predication appropriate if the conversation must proceed. This segues onto Step 1.2.
In Step 1.2, Romeo's belief cannot be simply represented as p1 in Step 1.1, a new representation p2 must be found. This search for a p2 is triggered by * on p1. Mercutio reaches some conclusion as to how the metaphor reflects a belief of Romeo's, which I summarize in Step 1.2. Thus, Mercutio believes that Romeo intended to say that Juliet is resilient, and that Romeo intended the implicature that Juliet would make a good dean. Recall that Step 1.2 represents what Mercutio got out of Romeo's remark, which is not necessarily identical to what Romeo intended to mean.
The tenor of the metaphor generates an implicature. The implicature arises from the context: the previous dean was a lazy pushover, which Romeo and Mercutio agreed was a bad thing; so for Juliet to be a "bulldozer", whatever this means exactly, is a positive feature, standing in opposition to being a lazy pushover.

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Step 1.2 alludes to the issue that has preoccupied philosophers the most: How does an addressee extract the tenor from the vehicle of the metaphor? I don't have a contribution to this issue, but it seems to me that any solution can be integrated into the model, including the RT's ad hoc concept construction. If we adopt this approach, p2=Juliet is a BULLDOZER*, where BULLDOZER* is an ad hoc concept built on the fly, as discussed in section 2.

In Step 1.3, the listener eventually adopts the belief that p2 and p3 are true. At this point, we can see the similarity of implicature and metaphor, which underlay Grice's framework: both involve inferential processes built on what a speaker uttered. The result is different because the tenor becomes the main proposition while an implicature is always subordinate to another proposition. This addresses the cancellability datum in section 3.6: true implicatures can be cancelled, the tenor of a metaphor cannot be.

Let's now consider the DM of the speaker. It could look like this:

Romeo's updates:

Step 2.1: Mercutio acknowledges that I have said p1= "*Juliet is a bulldozer."
Step 2.2: Mercutio believes that I believe p4=Juliet is tenacious
        Mercutio believes that I believe that p3= Juliet will make a good dean.
Step 2.3: Mercutio believes that p4='Juliet is tenacious
        Mercutio believes that p3=Juliet will make a good dean."

Figure 4

As before, the steps in the speaker's DM reflect what the speaker believes is the impact of their utterance on the DM of the listener. The interesting point to note here is that what the listener added to the DM and what the speaker wanted to mean with the metaphor are slightly different propositions: Mercutio thought that the bulldozer metaphor referred to Juliet's resilience while Romeo meant it to refer to her tenacity. This is, in fact, a good result of the model because it captures Property 1: the indeterminacy feature of metaphors. Romeo and Mercutio do not have identical representations of Romeo's proposition in their heads. But crucially, this does not prevent linguistic communication as long as there is some overlap between their additions to their new DMs. In this case, what is crucial is that there is some overlap between resilience and tenacity – say: firmness of character - and, crucially, that they both agree that this intersective quality makes Juliet a good dean candidate.

The resulting PostCG of Romeo's utterance is the following:

CG: Romeo has said that p1= "Juliet is a bulldozer."
      Romeo and Mercutio believe that p5= Juliet has a firm character
        Romeo and Mercutio believe that p3= Juliet will make a good dean.
     p5=Juliet has a firm character.
       p3=Juliet will make a good dean

Figure 5

Romeo and Mercutio agree that Romeo said p1 and that this is a good metaphor for Juliet's character. They also agree that Juliet will make a good dean. The thought that Juliet will make a good dean is stored in their CG.

Communication might fail. Maybe Romeo's bulldozer metaphor meant that Juliet is unfeeling or even psychopathic and wanted Mercutio to infer the implicature that Juliet would not make a good dean; meanwhile, Mercutio would interpret the metaphor as meaning that Juliet is resilient and therefore will make a good dean. As a result, there would not be a PostCG in which Romeo and Mercutio share a proposition describing

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Juliet. Communication has failed and further exchanges will be confusing unless the interlocutors readjust:

(26)   Romeo: Juliet is a bulldozer.
         Mercutio: True! I will certainly lobby for her candidacy.
         Romeo: What? No!

5.2   *Properties of metaphors*
Let us now see how this analysis accounts for properties 2-4 listed in section 2.9. We start with property 2: The vehicle can be elaborated and reported on, as shown by twice-true metaphors, the response test, the report test, and mixed metaphors. Since the proposition 'Romeo has said "Juliet is a bulldozer"' has been stored in the PostCG of Romeo and Mercutio, then the clause 'Juliet is a bulldozer' has also been stored in the PostCG – albeit only as the complement of a verb of reporting, not as an independent. Since the vehicle of the metaphor is stored in PostCG, it follows that one can elaborate and report on it.
Property 3 says that the tenor can also be elaborated and reported on. This is also accounted for because the tenor is a member of the postCG. As we have seen, Mercutio and Romeo can't agree on what the tenor of "Juliet is a bulldozer" is, but they agree that it suggests that Juliet has a firm character, and this is what ends up stored in the PostCG. Since 'Juliet is a person of firm character' has been stored in the CG, it can also have the same properties of being elaborated or reported on as the vehicle.
Property 4 is the most intriguing: The truth values of the utterance are calculated on the tenor. Possibly relatedly, only the tenor can stand as an antecedent of an anaphor. In this respect, the tenor and an implicature are alike and distinct from the vehicle. The account of this property relies on the difference in representation of vehicle and tenor in the postCG. The tenor is an independent constituent of the DMs of the interlocutors as well as their postCG. The vehicle is only represented as the complement of a verb of reporting and is not an independent constituent of the DM. As an independent proposition of the DM, the tenor has a denotation and can be the antecedent of an anaphor. Since the vehicle is not an independent proposition of the DM it does not have a truth value that can be computed in discourse and cannot be the antecedent of an anaphor. Thus, I believe that the articulated CG presented in these pages is a model that allows us to represent a basic intuition of metaphors: while vehicle and tenor are both DM constituents and both contribute to interpretation only the tenor is relevant to compute the truth of the resulting proposition. As for implicated propositions, notice that they are also independent discourse constituents and therefore it follows that they can be antecedents of anaphors.
Recall that the previous literature could not agree on the role of the metaphor in a conversation. Grice argued that it was an implicature derived from 'what is said' while the Contextualists argued that it was part of explicit meaning. The tests give us mixed results because both vehicle and tenor can be elaborated and reported on, which suggests that both are 'what is said'/Explicature if we adopt a binary framework. My solution makes explicit that both vehicle and tenor participate in the communicative exchange and have a place in the PostCG.
The participation of the vehicle in the communicative exchange is obscured by both mainstream approaches. In Grice's approach, a vehicle is merely 'made as if to say'. This turn of phrase may be thought to reflect the fact that the vehicle has no truth conditions but does not account for its presence in the CG. The vehicle must actually be said, or Property 2 is unaccounted for. In Contextualism, the tenor is a constituent of 'what is said' but the vehicle is left undiscussed. In the RT tradition neither the vehicle nor the

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tenor is represented individually - instead, an ad hoc concept is built around them and this ad hoc concept is a constituent of the explicature. But the ad hoc concept construction idea, without further ado, makes properties 2 and 3 even more puzzling: if a constituent is not represented linguistically in a PostCG, how can it be present in subsequent discourse? The approach I am presenting in these pages avoids the problem: Both vehicle and tenor are represented in the CG and are ready to be elaborated on or reported on.

Thus, previous approaches to the role of metaphor in linguistic communication were framed in a binary distinction between the content of what one says - 'what is said' or Explicature - and the implicatures that one draws from what one says. The current approach by-passes this constriction; instead, I propose to base the theory of linguistic communication around the articulated CG and investigate the place of the different components of meaning within the articulated CG.

6. Conclusions

This article seeks to integrate metaphor into the philosophical theory of linguistic communication. Grice (1989) proposed that the tenor of a metaphor is an implicature while the vehicle is only 'made as if to say'. Contextualists instead propose that a metaphor is part of an enriched 'what is said' (Recanati 2004, Bezuidenhout 2001, Wearing 2006) or, in the RT framework, it is part of the explicature (Carston 2002, Wilson and Sperber 2012). This latter framework argues that a metaphor is the outcome of loose talk resolved by means of ad hoc concept construction, which implicitly discards the vehicle~tenor distinction.

Under the guise of discussing the Contextualists arguments, we explored properties of metaphors that turned out to be quite puzzling and were not adequately analyzed within either a Gricean or a Contextualist framework. I then proposed to give up on the binary models of linguistic communication and attempt instead to account for the properties of metaphors by means of an articulated CG, which presents and idealized but detailed description of the interlocutors' CG as they add new utterances to the conversation. This approach does provide a satisfactory analysis of the properties of metaphor and therefore it is submitted as a proof of concept of the explanatory power of the articulated CG.

In the interests of space, I have refrained from discussing some consequences of my analysis for other tropes. The model presented here trivially provides an account of their work in conversation, but a detailed presentation is left for future work.

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