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Steen, Gerard

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The Ambiguity of Metaphor: How Polysemy Affords Multivalent Metaphor Use and Explains the Paradox of Metaphor

Gerard Steen

Emeritus Professor University of Amsterdam

ABSTRACT

This paper explores the suggestion (Steen, 2023a, 2023b) that most metaphor may be structurally ambiguous between deliberate and non-deliberate meanings, which in turn affords multivalent metaphor use. The paper begins by examining a sample of 56 Metaphor-Related Words in 25 examples of language use from corpus research about metaphor in discourse about cancer and the end of life (Semino et al., 2018). These data are analyzed by means of a new method proposed by Deliberate Metaphor Theory (Steen, 2023a; cf.; Reijnierse et al. 2019). Results show that all metaphors in the sample that are both polysemous and conventional can be given two interpretations, one non-deliberate and one deliberate. This ambiguity is largely corroborated by additional analysis of these same data by Wmatrix. Subsequent inclusion of all other cases from the same chapter in Semino et al. (2018) offers additional support. This finding offers a critical perspective on the idea that metaphor is a strong psychological device for figurative framing in discourse, for the structural ambiguity of most metaphor allows for multivalent metaphor use, where, in fact, most metaphor may typically be comprehended non-metaphorically (Steen, 2008, 2023a, 2023b). The ambiguity of metaphor hence also explains the paradox of metaphor.

Introduction

This article suggests that many if not most metaphors are ambiguous between deliberate and non-deliberate use (cf. Steen, 2023a, 2023b). In other words, their structures allow for two kinds of meaning: either a meaning that is intended as metaphorical between language users, or a meaning that is not intended to work metaphorically between language users (Steen, 2008). This affords multivalent metaphor use in discourse. It also explains the paradox of metaphor that most metaphor may not be comprehended metaphorically (Steen, 2008).

This widespread ambiguity of metaphor is based in a highly frequent, specific combination of properties that have to do with metaphor's variable structures and functions (Steen, 2023a, 2023b). Corpus research has shown that most metaphor is polysemous (language), conventional (thought), indirect (reference to some world), and non-deliberate (communication) (Reijnierse et al., 2019). The contrast between deliberate and non-deliberate use involves the presence or absence of online analogical comparison between source-domain and target-domain aspects of an utterance. As shown in Steen (2023a), metaphor that is based in polysemy allows for both uses.

Consider "She died yesterday after a long fight against cancer." In this utterance, *fight* has two possible meanings. One meaning is the target-domain sense of "the process of trying to achieve

CONTACT Gerard Steen g.j.steen@uva.nl Department of Dutch, Emeritus Professor University of Amsterdam, Postbus 15540, 1001 Amsterdam, NA, The Netherlands

something or prevent something" (see *Longman Dictionary of Contemporary English* online, LDOCE from now on). In modeling utterance comprehension, this sense can be recruited by means of the process of lexical disambiguation when moving from the Construction stage to the Integration stage of comprehension (Steen, 2023a; cf. Kintsch, 1998). When the target-domain sense and concept are selected as appropriate, comprehension projects a target-domain referent into the situation model: "the process of trying to achieve something or prevent something." Deliberate Metaphor Theory (from now on "DMT") takes this kind of processing by means of lexical disambiguation via the target domain as exemplary for non-deliberate metaphor use (cf. Reijnierse et al., 2018, 2019, 2020).

However, it is also true that there is the other, source-domain sense of *fight*: "a situation in which two people or groups hit, push etc. each other" (LDOCE). This is a sense that can also be utilized by the language user, and again simply by the process of lexical disambiguation. This may happen, for instance, because they truly think of handling cancer as if it is a fight, or because they are critical of this way of speaking and thinking and therefore focus on this kind of metaphorical language use as part of their language awareness. When this source-domain sense and concept are employed, they lead to a referent of fighting within the situation model. This is incongruous with the sentence frame, which is to do with cancer. It needs to be resolved by some online analogical comparison or cross-domain mapping between physical violence and cancer in order to prevent incoherent utterance representation in the discourse.

Since most metaphor is based on this kind of polysemy, this observation potentially concerns the bulk of all metaphors in usage. As a result, systematic ambiguity seems to arise between deliberate and non-deliberate metaphor meanings as a common situation in usage. So far DMT has implied that this ambiguity is commonly passed over by language users, and then this type of metaphor is typically used as indirect and non-deliberate. This leads to the paradox of metaphor (Steen, 2008).

This still is a plausible hypothesis. However, we can now see more clearly that this common pattern does not have to be followed all the time. People can also exploit the ambiguity in a different way and use the metaphor directly and deliberately, for instance, when interlocutors resist a particular form of metaphor use, as with violence metaphors for cancer (e.g., Wackers et al., 2021). When this happens, the intended meaning of the metaphor in question in a specific discourse event requires negotiation between sender and addressee.

This negotiation of meaning will address the question whether a particular utterance was indeed meant to make the listener think by metaphor, that is, with an initial orientation to the source domain, or not. Producers of metaphorical utterances may intend their addressees to set up a source-domain referent that functions as a figurative ("alien") perspective on some target-domain referent, and then they are using their metaphor deliberately ("yes, I did want you to think of cancer as a fight"). But they may also not have such an intention at all, and then the utterance may be comprehended as a non-deliberate metaphor ("no, I did not want you to think of cancer as a fight, but merely as a process of trying to achieve something or prevent something"). Both options are perfectly defensible.

Yet listeners also have intentions of their own. This enables them to revitalize metaphorical structures in some utterance as metaphorical themselves, irrespective of the intentions of the sender. Then, the listener thinks by metaphor ("yes, cancer is much like a real fight") whereas the sender did not. The other way around is also possible: a sender may deliberately use *fight* as a metaphor but the addressee may not pick this up and stick to the conventionalized target-domain meaning. This option for two diverging uses may in fact be widely available because of the distribution of metaphor properties across language use. Polysemy hence affords multivalence in metaphor use in discourse.

When and how which option, deliberate or non-deliberate use, is preferred is an empirical question. It depends on various conditions of use. This is not only important for psycholinguistic research into metaphor processing, which focuses on the roles of lexical disambiguation versus analogizing (e.g., Gibbs, 2017; Holyoak & Stamenković, 2018; Zlatev et al., 2021; e.g., Werkmann Horvat et al., 2023). It also has potentially important implications for the role of metaphor as a framing device in discourse processing (Burgers et al., 2016; Semino et al., 2016), for it may not only be less powerful (cf. Steen, 2023a, 2023b), but it would also allow for people to make a decision in many cases whether they accept to employ a metaphor as a device for thinking by metaphor about a particular topic, or not. Moreover, in social interaction we can occasionally trace verbatim whether a particular metaphor was used deliberately or not, and whether this happened in the same way by various discourse participants, often in explicit terms signaling language awareness (e.g., Finsen et al., 2021; Renardel de Lavalette et al., 2019; Wackers et al., 2021; cf. Van Poppel & Pilgram, 2023).

The issue is related to deliberate metaphor identification (Reijnierse et al., 2018, 2019, 2020), which has signaled that it addresses *potentially* deliberate metaphor use. Yet deliberate metaphor identification broaches a fundamentally different question. The question in this article is not whether a metaphor is deliberate or not in metaphor identification by analysts, but whether a metaphor can be used as deliberate at one moment but as non-deliberate at another. The problem here is about the systematic and reliable existence of ambiguity between the two possible uses for a large class of metaphors in usage, based upon observable structural properties of metaphor, not about the plausibility of (non-)deliberate metaphor identification.

This is a structural-functional approach to metaphor, polysemy, and their use in the real world (cf. Carston, 2020). It needs to link up with research on the psychological processes of language production and comprehension, and with social processes of interaction. This presupposes a precise model for describing structures and functions of metaphor that can be used to model and predict patterns in comprehension (Steen, 2023a, 2023b). That processes of comprehension and social interaction involve more than the use of these structural-functional properties of metaphor in this narrowly defined domain of comprehension has been emphasized by for instance Colston and Gibbs (2012; cf. Gibbs, 2017) and Turner and Littlemore (2023). That is not denied here. Their suggestions are instead regarded as compatible with the present attempt to improve testable models of what can be seen as the core of metaphor comprehension. Variation and elaboration upon this core always remain possible.

This paper hence addresses the relation between metaphor-motivated polysemy and conventionality, on the one hand, and ambiguity in metaphor meaning, on the other. More concretely, it examines how the configuration of polysemy and conventionality in metaphor is related to metaphor directness and deliberateness. The aim is to sketch a richer empirical picture of the situation than was recently offered by the close analysis of just a few examples (Steen, 2023a). This picture then points the way to more questions for future research about the multivalence of metaphor in usage.

Theoretical framework

It is not accidental that it is the properties of polysemy, conventionality, directness, and deliberateness that are involved in the possibility of this probably widespread ambiguity of metaphor. These are essential metaphor properties that are reflections of aspects of metaphor in language (polysemy or monosemy), thought (conventionality or novelty), reference to some world (direct or indirect), and communication (deliberate or non-deliberate use of metaphor). They are central categories of four distinct dimensions of all utterance comprehension in discourse, which have been modeled in DMT on the basis of the Construction-Integration model (Kintsch, 1998; Kintsch & van Dijk, 1978; Van Dijk, 2008; Van Dijk & Kintsch, 1983). This has now enabled a new conceptualization of metaphor comprehension (Steen, 2023a, 2023b). Briefly, DMT says that all metaphor research is about which conditions promote the use of the mechanism of lexical disambiguation only, versus its use in combination with the one of analogy (or cross-domain comparison) during metaphor comprehension and its role in discourse processing (e.g., Steen, 2008, 2011a, 2011b; Steen, 2015, 2017a, 2017b, 2023a, 2023b; cf.; Reijnierse et al., 2018, 2019, 2020).

The general idea of DMT's employment of the Construction Integration (or "CI") model is that utterance comprehension involves the construction and integration of several dimensions of meaning (Steen, 2023a). A simple way of explaining this is to say that during comprehension people turn words into concepts into referents into topics as well as perspectives on topics. This is because all utterances display some use of language (words), thought (concepts), the world (referents), and communication (topics and perspectives). People hence build four-multidimensional utterance representations, which themselves are the building blocks for discourse comprehension. The latter, in turn, is about the comprehension of stories, arguments, expositions and so on, as well as their functions of informing, persuading, and so on, which occurs in discourse domains such as news, education, and politics.

In the Construction-Integration approach, distinctions are made between four corresponding mental models for utterance comprehension in discourse. These evolve from each other and enable the maintenance of a growing and constantly updated multi-dimensional representation of utterances in discourse that is meant to be coherent. Here are the four mental models and their use in DMT:

Surface text: this handles metaphor structures and functions on the dimension of language, including metaphor-motivated polysemy and metaphor signaling versus non-signaling

Text base: this handles metaphor structures and functions on the dimension of thought, including the use of conventional and novel conceptual mappings

Situation model: this handles metaphor structures and functions on the dimension of reference to some world, and includes the integration of direct versus indirect referents from source and target domains

Context model: this handles metaphor structures and functions on the dimension of communication, and includes the intention of deliberate versus non-deliberate use of metaphor as metaphor

The linguistic and conceptual dimensions of metaphor in language use (here related to building a surface text and text base) have been central in metaphor research since the launch of the cognitive-linguistic approach by Lakoff and Johnson (1980). They involve the Construction stage and are based on a mechanism of blind spreading activation. This explosion of potential meanings is then constrained during the Integration stage which involves building a situation model and context model. The communicative dimension (here related to the context model) defined in the above-mentioned way was introduced as an additional aspect to this framework by Steen (2008, 2011a, 2011b), profiting from lots of more independent research on metaphor in communication and discourse by others (for a recent overview, see, Semino & Demjén, 2017). The referential dimension (here related to the situation model) has recently been separated out more precisely from the communicative dimension as dealing with reference to some world (cf. Steen, 2011a), especially as a result of the development and application of DMIP by Reijnierse et al (2018, 2019, 2020).

The most important facts resulting from this research for our present purposes include the ubiquity and predominance of polysemous, conventional, indirect, and non-deliberate metaphor (Reijnierse et al., 2019). More elaborate analytical research of these findings, however, has now shown that this is not the complete story (Steen, 2023a, 2023b). This article hence adds to this research by focusing on the following question: Can we indeed suggest that most if not all polysemous and conventional metaphor can be analyzed as potentially ambiguous between deliberate and non-deliberate meaning (and its concomitant property of direct and indirect reference)? Is this ambiguity indeed based on structural-functional properties of metaphor-motivated polysemy and its use in conventional metaphor? What does this mean for the analysis of metaphor in language use and discourse? Does this indeed imply that most metaphor is multivalent in that it can be and often is used in two different ways: deliberately and non-deliberately, both within and between people?

Method

Materials

A selection of cases was collected and analyzed from the examples of metaphors for cancer in *Metaphor, cancer and the end of life: A corpus-based study* (Semino et al., 2018). This is a study of a 1.5-million-word corpus targeting how people living with cancer and their caregivers are talking and thinking about cancer by means of metaphor. No original data were shared between the authors and myself, for reasons of ethics. The examples here are therefore taken as they were able to be published originally, and are assumed to be representative enough for reanalysis.

Writing and talking about cancer and the end of life is obviously an extremely urgent topic in health care and health communication, which has displayed widespread public discussion about language awareness and appropriate language use (e.g., Wackers et al., 2021). How metaphors are used in this context by who, and whether this is deliberate or not, is a fundamental part of this domain of discourse and has great potential for application. The topic can therefore also stand for many other topics in health care and elsewhere, such as government and politics, or education and science, where metaphor may be ambiguous between deliberate and non-deliberate use.

Another reason why these data were chosen is because of the method of this study. This is corpus-based research that has used the highest available standards for doing metaphor research. It has made use of the procedures and insights of two methods for metaphor identification, MIP and MIPVU (Pragglejaz Group, 2007; Steen et al., 2010), and it is based on independent descriptions of word use by the Macmillan online dictionary for users (Macmillan Dictionary Online). It has also used an independent and automated tool for the analysis of the semantic fields of specific word senses, called Wmatrix (Rayson, 2008), which may also be used to begin identifying related conceptual domains. Overall, this study and its findings are valid, reliable, partly automated, quantifiable, and based on sources and tools that were not designed specifically for the study of metaphor.

Method of analysis

The analysis will be based on the method presented in Steen (2023a, see Part Four). This is a method that aims to make maximally explicit the numerous assumptions that are made in many metaphor analyses, in order to make them open for discussion, criticism, and improvement. Table 1 presents the analysis of our example sentence from the introduction (see Steen, 2023a, p. 280).

Table 1. Mental models for non-deliberate versus deliberate metaphorical reading of *She died yesterday after a long fight against cancer*. Glosses for the semantic field labels, per word: L1- Dead; T2- Time: ending; S8- Hindering; X8+ Trying hard; E3- Violent, angry; K5.1 Sports; N3.7+ Long, tall and wide; T1.3+; Time period: long; N3.3+; Distance: far; N3.2+; Size: big; B2 Disease.

Mental representation	*Content for non-deliberate metaphorical reading*	*Content for deliberate metaphorical reading*
Surface text	She<*Z8f*> died<*L1-, T2-*> yesterday<*T1.1.1*> after<*Z5*> a<*Z5*> long<*N3.7+, T1.3+, N3.3+, N3.2+*> fight<*S8-, X8+, E3-, K5.1*> against<*Z5*> cancer<*B2-*>	Idem
Text base	P1 (DIE<*L1-, T2-*> WOMAN) P2 (TIME P1 YESTERDAY<*T1.1.1*>) P3 (AFTER P1 FIGHT<*S8-, X8+, E3-, K5.1*>) P4 (MOD FIGHT<*S8-, X8+, E3-, K5.1*> LONG<*N3.7+, T1.3+, N3.3 +, N3.2+*>) P5 (AGAINST FIGHT<*S8-, X8+, E3-, K5.1*> CANCER<*B2-*>)	Idem
Situation model	P1 (DIE<*L1-*> WOMAN) P2 (TIME P1 YESTERDAY<*T1.1.1*>) P3 (AFTER P1 FIGHT<*S8-*>) P4 (MOD FIGHT<*S8-*> LONG<*T1.3+*>) P5 (AGAINST FIGHT<*S8-*> CANCER<*B2-*>)	P1 (DIE<*L1-*> WOMAN) P2 (TIME P1 YESTERDAY<*T1.1.1*>) P3 (AFTER P1 FIGHT<*E3-*>) P4 (MOD FIGHT< *E3-*> LONG<*T1.3+*) P5 (AGAINST FIGHT<*E3-*> CANCER<*B2-*>)
Context model	P1 (DIE<*L1-*> WOMAN) P2 (TIME P1 YESTERDAY<*T1.1.1*>) P3 (AFTER P1 FIGHT<*S8-*>) P4 (MOD FIGHT<*S8-*> LONG<*T1.3+*>) P5 (AGAINST FIGHT<*S8-*> CANCER<*B2-*>) P6 (INTEND SPEAKER P7) P7 (UNDERSTAND ADDRESSEE P1) P8 (RECOGNIZE ADDRESSEE P6)	P1 (DIE<*L1-*> WOMAN) P2 (TIME P1 YESTERDAY<*T1.1.1*>) P3 (AFTER P1 FIGHT<*E3-*>) P4 (MOD FIGHT< *E3-*> LONG<*T1.3+*) P5 (AGAINST FIGHT<*E3-*> CANCER<*B2-*>) P6 (INTEND SPEAKER P7) P7 (UNDERSTAND ADDRESSEE P1) P8 (RECOGNIZE ADDRESSEE P6)

In this article we start out from a structural-functional linguistic analysis of utterances for representing their contribution to the surface text. This includes identification of utterances (Steen, 2005), identification of Metaphor-Related Words by means of MIPVU (Steen et al., 2010), determination of their monosemous or polysemous structure on the basis of the dictionary, and determination of their related semantic fields on the basis of Wmatrix. In Table 1, it is just the Wmatrix results that are included in the presentation of the analysis, for improved readability. By way of aside, we will here use the online *Longman Dictionary of Contemporary English* (LDOCE) because the Macmillan dictionary used by Semino et al. (2018) has been taken offline. Like the Macmillan, LDOCE can also be used "as a point of reference for basic meanings, as it is recent and corpus-based, and therefore a reliable source of information on current usage" (Semino et al., 2018, p. 58).

When the linguistic analysis of the surface text is complete, the linguistic structures and functions of each utterance are propositionalized into parts of a textbase (words turning into concepts), which is elaborated into a situation model (concepts turning into referents), and finally into a context model (referents turning into topics and perspectives). This part of the analysis provides the basis for showing that both deliberate and non-deliberate interpretations are possible in the conceptual, referential, and communicative structures of the metaphor. This is summarized in paraphrases for the context model for each Metaphor-Related Word, as will be illustrated in section 4.3.

For reasons of space the formal details that lead to these paraphrases cannot be explicitly discussed. Full-blown annotated analyses of a selection of ten utterances from the first 25 examples are available online (OSF | Metaphor, polysemy, and ambiguity). Instead, relevant patterns and outcomes that can be observed for all analyses will here be presented in informal, generally understandable terms.

Results

Excluding obviously direct metaphor

Semino et al. (2018) Chapter Five discusses 49 examples of violence metaphors that are used by people living with cancer and their caregivers. They mostly come from online discussion fora. The first 25 of these 49 examples are all for talking and thinking about patients' relationships with the disease. Table 2 contains all of these 25 examples as presented by the authors. Metaphor-Related Words (from now on MRWs) that were focused on in the analysis were underlined by the authors themselves.

Many of these cases involve polysemy, conventionality, and indirectness, and DMIP would regard most of these cases as non-deliberate. Yet the question for this article is whether the polysemous cases in fact conceal an ambiguity between two possible meanings, indirect and non-deliberate versus direct and deliberate. This may be revealed by close analysis of the conceptual (conventional versus novel), linguistic (polysemous versus monosemous), and referential (direct versus indirect) structures and functions of these metaphors. Practically, the question is which of these cases could be contested by an interlocutor asking whether the speaker or writer meant to use their utterance as non-metaphorical or metaphorical, as happens in attested resistance to metaphor in cancer discourse mentioned above.

Let us first assume that all cases are expressions of a conventional conceptual mapping that is available in the English linguistic and conceptual systems for talking about cancer by means of violence. There is enough evidence for this assumption in Semino et al. (2018) by itself. Let us then remove self-evident cases of direct metaphor because these are not ambiguous between non-deliberate and deliberate use. They are always deliberate because they clearly and directly project a referent that belongs to the source domain into the situation model. For instance, consider example 5.4., " … as I felt psychologically I would like to see the enemy's face, as it were." In this case, "as it were" signals that the enemy's face, a source-domain concept, is projected as a referent into the situation model, while in fact it is not really there but instead is a metaphorical image of something else in the target domain.

Table 2. Violence metaphors for relationships with the disease (numbered and underlined by Semino et al., 2018.).

5.1	Thus far in my fight against terminal cancer I have been very fortunate, fortunate that I am the person that I am [. . .]. I was also fortunate that my Consultants recognised that I was a born fighter and saw my determination
5.2	I don't intend to give up; I don't intend to give in. No I want to fight it. I don't want it to beat me, I want to beat it.
5.3	I have not hunkered down in my trench to just merely defend myself against the demon but have picked up my sword and taken the fight to the demon
5.4	I BEGGED the prof who gave me my diagnosis to show me the scans, as I felt psychologically I would like to see the enemy's face, as it were
5.5	I respect cancer and never underestimate the power it has, but if you can face up to it and hit it back head on then I think you stand a good chance of beating it for just a bit longer
5.6	Your words though have given me a bit more of my fighting spirit back. I am ready to kick some cancer butt!
5.7	Don't let the Demon get you down, spit it in it's [*sic*] eye and give it a swift kick up the wahoola.
5.8	So I woke up this morning and gave a very large kick to myself!
5.9	What I needed was a very large kick up the backside.
5.10	It must be dispiriting when you are battling as hard as you can, not to be given the armor to fight in
5.11	We become ill to the point where we cannot fight any more, then we die.
5.12	I feel such a failure that I am not winning this battle
5.13	Do I wither or retreat from this weary battle?
5.14	I sometimes worry about being to positive or feel I am cocky when I say I will fight this as I think oh my god what if I don't win people will think ah see I knew she couldn't do it!
5.15	HOPE YOUR DAD IS STILL FIGHTING THE FIGHT WITH ALL GUNS BLAZING
5.16	He's vowed to fight, I've vowed to back him no matter what.
5.17	For me and especially for my wife it was about knowledge. If we could discover what we faced, we felt better able to tackle it. OK, we didn't win but we made a jolly good fight of it.
5.18	It is his battle and I have to respect his wishes how he want to fight it.
5.19	My husband lost his battle after 10 ½ months.
5.20	My son and I had battled on for nearly two weeks at home watching him struggle to try and do things
5.21	He has had another fight but couldn't win this time and it had spread to his liver and chest
5.22	Sorry to hear about your husband its hard to believe there still not here with us. Mine had stomach cancer diagnosed 2007 sadly he too lost the battle at just 47 in January this year
5.23	You are now the general and you see your troops killed in battle
5.24	Sometimes one is fighting for patient survival against the odds
5.25	It's difficult to have advanced care planning discussions with somebody mainly or thoughts about how you'd like to end your life to be if they're still focussed on do, don't like using the word but, fighting, fighting the fight, fighting the illness fighting you know. So sometimes we get quite often I think we get in the middle of that one party still has that with the fighting the battle scenario and maybe somebody's else in a completely different place.

There are several non-signaled direct cases, too. Their contextually relevant sense for the MRW clearly is the source domain-sense, and this only puts a source-domain referent into the situation model. Consider 5.3, "I have not hunkered down in my trench to just merely defend myself against the demon but have picked up my sword and taken the fight to the demon." According to the LDOCE, *trench* and *sword* have source-domain senses only (they do have other senses than source-domain violence ones or target-domain related ones, but these are irrelevant in this context). It is quite likely that the use of *defend* is aligned with this orientation toward the source domain. The same direct use of some source domain holds for *armour* in the second utterance of 5.10, *guns blazing* in 5.15, and *general* and *troops* in 5.23. Semino et al. (2018, p. 60) refer to MIPVU in order to argue that cases like these may still all be classified as conventional violence metaphors. But these are conventional metaphors that are realized in unfamiliar, creative ways by means of words that are not polysemous in a cancer-related or illness-related way. This is the reason why DMT holds that they qualify as obviously direct and therefore also deliberate.

We therefore exclude these cases from the 25 examples from our sample. We are consequently left with 44 MRWs in 24 examples that are conceptually conventional and referentially not obviously direct. Their MRWs all seem to be polysemous between at least a source-domain sense and a target-domain sense, and this should be part of the linguistic representation in the surface text during the Construction stage: as language items these words can mean either one or the other thing. They hence

Table 3. Relevant polysemy in Metaphor-Related Words in violence metaphors.

	LDOCE-source	LDOCE-target
Back (v)	3 put sth on back of sth, in order to protect or make stronger	1 support (abstract)
Battle (n)	1 fight	2 competition, argument 3 change bad situation
Battle (v)	3 (lit) take part in war	1 Try v hard to achieve sth difficult or dangerous
Beat (v)	2 hit	1 competition/election 4 do better 5 be better 7 control/deal with problem
Fight (n)	1 people hitting each other 5 battle	2 achieving/preventing sth
Fight (v)	1 fight in war 2 hit people	3 try hard to do sth 4 prevent sth
Fighter	1 plane 2 someone who fights (esp sports)	3 someone who tries to achieve sth
Hit (v)	1 touch sb/sth hard	7 affect badly
Kick (n)	1 movement w foot	4 "Kick up the ass/backside/pants:" criticism or strong encouragement
Kick (v)	1 hit w your foot	3 "Kick yourself:" used to say that you're annoyed with yourself 7 "Kick sb's ass/butt:" punish or defeat sb
Lose	1 stop having quality etc 2 not win (game, argument, election, war, illness) 3 cannot find 4 stop having concr/abs	2 not win (game, argument, election, war, illness)
Retreat (v)	1 move away (army) 2 move back	3 change your mind, not do sth
Struggle (v)	2 fight sb/each other	1 try extremely hard to achieve sth difficult
Tackle (v)	2 Movement of interception in sports	1 try to deal w difficult problem 3 talk to someone in order to do 1
Win (v)	1 race/game/election/war 2 prize	3 get/achieve (gain)

merit the question whether they are in principle conducive to ambiguity between deliberate and non-deliberate use. These 44 cases are tokens, representing 15 types.

Checking relevant polysemy

Table 3 shows the sense descriptions of the words remaining in the data. If the columns labeled "LDOCE-source" and "LDOCE-target" are both filled, then the dictionary shows that the lexical item in question is indeed polysemous, and that our analysis argues that this polysemy is motivated by metaphor and applicable to utterances about cancer (hence "relevant polysemy"). Only such items will be examined further regarding their potential ambiguity.

The numbers of the senses in Table 3 indicate the order in which they are listed in the dictionary, which roughly reflects their frequency in use. Thus, for *back, struggle*, and *tackle*, the first sense in the dictionary is the target-domain one, while for all other cases of metaphor-motivated polysemy, the source-domain sense is the most frequent one. This has to do with the role of salience (Giora, 2003, 2008), or the speed and strength with which a particular sense is available for use during comprehension. In other words, in the case of *back, struggle*, and *tackle*, all other things being equal, it is the sense related to the target domain that is activated fastest and most strongly because it is most frequent. In the other cases, it is the source-domain that is activated fastest and most strongly because it is most frequent. This is a crucial difference.

Salience is an important variable in metaphor comprehension for it suggests that, for *back, struggle*, and *tackle*, the conventionalized figurative senses related to the target domain can be realized without first going through their corresponding source-domain senses and projecting a mapping. This is a vital building block for DMT. However, and at the same time, this kind of salience does not necessarily bar these cases from qualifying as ambiguous between deliberate and non-deliberate use, as we shall see.

Special analytical treatment is needed for two cases. First, there is the verb form *battle*, which according to LDOCE has lost its use as a violence-related word and is now only used in the target-domain sense of "trying very hard to achieve something." It was probably retained as a bona fide metaphor by the authors because they follow MIP and do not constrain cases to their contextual and basic meanings within word class, in contrast to MIPVU (Semino et al., 2018, p. 59). In addition, the current target-domain sense may be conjectured to be a result of an original source-domain sense. A quick look at the *Oxford English Dictionary* confirms this supposition. This turns *battle* as a verb into a case of the career of metaphor (Bowdle & Gentner, 2005; Gentner & Bowdle, 2008), which is a central long-term process that is another major building block for DMT. For this moment, the verb form *battle* will hence also be retained for additional analysis below, because of its inclusion by the authors on the basis of its close relation to the corresponding noun *battle*, which itself is polysemous.

Second, there is *kick*, which by itself does not display metaphor-related polysemy. However, in combination with an object in set phrases it clearly can. It is therefore also for this moment retained.

In sum, all of the examples in Semino et al. (2018) that are not obviously direct and deliberate (see section 4.1) can be seen as based in a conventional mapping in thought, from violence to cancer. However, some involve creative, unfamiliar linguistic expressions of the mapping and hence do not exhibit polysemy (the *trench* and *general* group of cases); they are consequently direct and deliberate, and have been left aside. By contrast, all other cases are familiar expressions in language of the conventional mapping in thought and exhibit polysemy. This is the most frequent category of metaphor in usage, and would be predicted by DMT, *ceteris paribus*, to be typically taken as involving indirect reference in building a situation model by language users in concrete discourse events. They are the focus of this study in order to check whether they may also allow for an alternative, deliberately metaphorical reading.

Examining ambiguity

The main goal of this study is to determine whether it is possible that a specific metaphor-related use (polysemous and conventional) can afford two types of meaning. These are a source-domain oriented meaning, which makes the metaphor direct and deliberate, as well as a target-domain oriented meaning, which makes the metaphor indirect and non-deliberate. To make this question concrete, let us turn it into the practical issue that has motivated this study: would it be possible for language users to contest which meaning of an utterance they wanted or did not want to convey if they were taken up by other language users about their intentions (see Steen, 2023a)? This will answer the question whether a metaphor is ambiguous between deliberate and non-deliberate meaning, and can hence afford multivalent use. Table 4 shows how this can be handled in practice.

For each item there is the following question: is it possible to have an intended source-oriented and an intended target-oriented interpretation? The formal analyses of a selection of ten utterances presented in the materials on line (OSF | Metaphor, polysemy, and ambiguity) illustrate how the various word senses listed in LDOCE can lead to different (deliberately and non-deliberately metaphorical) readings of the metaphor from surface text through textbase and situation model to context model. These readings are displayed in the form of paraphrases at the end of each reading on the worksheet called "context model." For instance, here are the two paraphrases for the two possible meanings of *fight* in Example 5.1. (see Table 2):

> Paraphrase non-deliberate use: The speaker intends the addressee to understand that the speaker has been very fortunate thus far in their prevention of terminal cancer, and the speaker expects the addressee to recognize this intention

> Paraphrase deliberate use: The speaker wants the addressee to understand that the speaker has been very fortunate thus far in their fight against terminal cancer, implying a similarity between a fight against a person and the prevention of cancer, and the speaker expects the addressee to recognize this intention

The overall pattern in the data is clear. Almost all cases are ambiguous. They can be used non-deliberately as well as deliberately. This is because almost all examples display relevant polysemy for both domains involved, violence and cancer (or more general illness or a serious and difficult

Table 4. Ambiguity in use of metaphor-motivated polysemy in conventional metaphors for cancer.

5.1	Thus far in my fight against terminal cancer I have been very fortunate, fortunate that I am the person that I am [. . .]. I was also fortunate that my Consultants recognised that I was a born fighter and saw my determination *Fight*: source-oriented possible? Yes. Target-oriented possible? Yes. *Fighter*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.2	I don't intend to give up; I don't intend to give in. No I want to fight it. I don't want it to beat me, I want to beat it. *Fight*: source-oriented possible? Yes. Target-oriented possible? Yes. *Beat*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.4	I BEGGED the prof who gave me my diagnosis to show me the scans, as I felt psychologically I would like to see the enemy's face, as it were *Enemy*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.5	I respect cancer and never underestimate the power it has, but if you can face up to it and hit it back head on then I think you stand a good chance of beating it for just a bit longer *Hit*: source-oriented possible? Yes. Target-oriented possible? Yes. *Beating*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.6	Your words though have given me a bit more of my fighting spirit back. I am ready to kick some cancer butt! *Fighting*: source-oriented possible? Doubtful, because this is part of *fighting spirit*, which as a conventional compound would require special attention to its *fighting* part as polysemous and possibly ambiguous. Target-oriented possible? Yes. *Kick*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.11	We become ill to the point where we cannot fight any more, then we die. *Fight*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.12	I feel such a failure that I am not winning this battle *Winning*: source-oriented possible? Yes. Target-oriented possible? Yes. *Battle*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.13	Do I wither or retreat from this weary battle? *Retreat*: source-oriented possible? Yes. Target-oriented possible? Yes. *Battle*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.14	I sometimes worry about being to positive or feel I am cocky when I say I will fight this as I think oh my god what if I don't win people will think ah see I knew she couldn't do it! *Fight*: source-oriented possible? Yes. Target-oriented possible? Yes. *Win*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.16	He's vowed to fight, I've vowed to back him no matter what. *Fight*: source-oriented possible? Yes. Target-oriented possible? Yes. *Back: Win*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.17	For me and especially for my wife it was about knowledge. If we could discover what we faced, we felt better able to tackle it. OK, we didn't win but we made a jolly good fight of it. *Tackle*: source-oriented possible? Yes. Target-oriented possible? Yes *Win*: source-oriented possible? Yes. Target-oriented possible? Yes. *Fight*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.18	It is his battle and I have to respect his wishes how he want to fight it. *Battle*: source-oriented possible? Yes. Target-oriented possible? Yes *Fight*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.19	My husband lost his battle after 10 ½ months. *Lost*: source-oriented possible? Yes. Target-oriented possible? Yes. *Battle*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.20	My son and I had battled on for nearly two weeks at home watching him struggle to try and do things *Battled*: source-oriented possible? No. Target-oriented possible? Yes (see WMatrix *Struggle*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.21	He has had another fight but couldn't win this time and it had spread to his liver and chest *Fight*: source-oriented possible? Yes. Target-oriented possible? Yes. *Win*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.22	Sorry to hear about your husband its hard to believe there still not here with us. Mine had stomach cancer diagnosed 2007 sadly he too lost the battle at just 47 in January this year *Lost*: source-oriented possible? Yes. Target-oriented possible? Yes. *Battle*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.24	Sometimes one is fighting for patient survival against the odds *Fight*: source-oriented possible? Yes. Target-oriented possible? Yes.
5.25	It's difficult to have advanced care planning discussions with somebody mainly or thoughts about how you'd like to end your life to be if they're still focussed on do, don't like using the word but, fighting, fighting the fight, fighting the illness fighting you know. So sometimes we get quite often I think we get in the middle of that one party still has that with the fighting the battle scenario and maybe somebody's else in a completely different place. *Fight*: source-oriented possible? Yes. Target-oriented possible? Yes. *Battle*: source-oriented possible? Yes. Target-oriented possible? Yes.

situation). There is a clear relation between polysemous and conventional structures, on the one hand, and ambiguity in communicative deliberateness (and its corollary of referential directness) on the other.

There are two apparent exceptions to the overall pattern: *fighting* in Example 5.6, and *battled* in Example 5.20. This is because, for *fighting* in *fighting spirit*, DMT does not take the use of *fighting* as a separate word that can work figuratively in the same way as all other words. This is because *fighting spirit* is listed as one compound lexical unit in the LDOCE, meaning "the desire to fight or win" (cf. Steen et al., 2010, pp. 30–31). This hence also conventionally designates one referent.

For *battled*, we return to the observation in section 4.2 about its lack of polysemy according to LDOCE, and here see how this might affect the answer to the question whether 5.20 is ambiguous between two readings. If a language user would defend their use by denying that the verb *battle* is about violence and would resort to the dictionary for support, they might be able to make their case on the basis of attested patterns in contemporary English usage. The use of a corpus-based dictionary in this way lies at the basis of much contemporary language research on metaphor.

In general, however, these data support the main claim of this article. When a metaphor exhibits polysemous and conventional structures, it may facilitate two different readings. One of these is oriented toward the source domain of the Metaphor-Related Word and is deliberate, but the other is oriented toward the target domain of the Metaphor-Related Word and is non-deliberate. This is now intelligible as dependent on the polysemy of the critical Metaphor-Related Word.

Checking contextual meanings

Wmatrix provides us with an independent and automated measure of what counts as the contextual meaning of a word when it is polysemous, including when this happens to be motivated by metaphor. Applying this tool allows us to delve deeper into the way in which the ambiguity of metaphor can be handled in language use (Semino et al., 2018, p. 65):

> . . . , the USAS tagger attempts to assign a contextually appropriate tag by taking into account the meaning of a word of phrase in the wider sentence or discourse context. To do this, it relies on a large dictionary of words and phrases, each with a list of potential tags, . . . The semantic tagger attempts to choose the correct tag in context from the dictionary list using a number of disambiguation methods . . . The key point here is that the tagger puts the most likely tag for each word or phrase at the start of the list of tags applied to that word or phrase, while the other, less likely tags are retained lower down in that list. If we look solely at this first-choice tag for all words and phrases in a text, then the tagger is accurate around 91% of the time . . .

Wmatrix can hence help us understand how polysemous words are used. Wmatrix does this by employing a computational disambiguation procedure, which can be seen as one computational model of what DMT argues is also in place for much human metaphor comprehension (Steen, 2023a).

For all of our cases, Table 5 shows which semantic field comprises the first sense for that word's meaning in context according to Wmatrix. This field is in italics. Since all of our MRWs also exhibited other semantic fields, these are also listed in Table 5, and they are distinguished from the contextually first sense by lack of italics. What is important for our purposes is that each of these other, non-first, lower-ranked semantic fields always exhibits at least one field that can be related to the complementary side of the metaphor. If the first semantic field was related to the target domain, then there always was a complementary source-domain field. And if the first semantic field was related to the source domain, then there always was a complementary target-domain field. This complementary, second relevant semantic field is underlined, in contrast with italicization for the first relevant semantic field.

Thus, the first row of Table 5 shows the data for the verb *to back*. It occurs in Example 5.16: "He's vowed to <u>fight</u>, I've vowed to <u>back</u> him no matter what." The semantic field that is in italics is the field for the first, contextually most relevant sense, and it is S8+, which is labeled "helping." This was interpreted as belonging to the target domain of relating to the disease. It is contrasted with the relevant complementary semantic field, which is in the remaining tags listed under "WM-source." Here it is probably M1, "Moving, coming and going." One reason for this interpretation is the analogy

Table 5. First (in italics), second (underlined) and other (unmarked) tags for semantic fields assigned to Metaphor-Related Words by WMatrix, divided by conceptual domain.

	WM-source	WM-target
Back (v) 3/3	K5.1/I1 "M1: Moving, coming, going" M6 K2	*"helping" S8+*
Battle (n) 3/3	G3: "Warfare etc" E3- O2	*"trying hard" X8+*
Battle (v) 1/3	G3: "Warfare etc" E3-	*"trying hard" X8+*
Beat (v) 3/3	S7.1+ E3-: "Violent/angry" A1.1.1 A5.1++ B1	*"success" X9.2+*
Fight (n) 3/3	E3-: "Violent/angry" K5.1	*"hindering" S8- "trying hard"* X8+
Fight (v) 3/3	E3-: "Violent/angry" G1.2	*"hindering" S8- "trying hard"* X8+
Fighter 2/3	*"violent/angry" E3-*	X8+: "Trying hard"/S2mf K5.1/S2mf M5/G3fn
Hit (v) 3/3	*"violent/angry" E3-*	A1.1.1: "General actions/making" A2.1+ A11.2+ A10+ M1 G3
Kick (n) 2/3	*"violent/angry" E3-*	E4.1+ A1.1.1: "General actions/making"
Kick (v) 3/3	*"violent/angry" E3-*	A1.1.1: "General actions/making" T2-
Lose 3/3	A9-: "Giving" M6/A5.3- L1-	*"failure" X9.2-*
Retreat (v) 1/3	*"Moving, coming, and going" M1*	G3 A1.9 A15+/M7 A10-: "Closed, hiding/hidden" E3+
Struggle (v) 2/3	E3-: Violent/angry	*"trying hard" X8+ "difficult"*A12-
Tackle (v) 2/3	K5.1: "Sports" Q2.2	*"General actions/making"* A1.1.1
Win (v) 3/3	X9.2+/S7.3: "Competition" X9.2+/G3: "War etc." A9+	*"success" X9.2+*

with the first sense for the verb *retreat* lower down. (Please note that this way of presentation in the table shows how a choice has been made from all runners-up to find the most relevant complementary semantic field to first choice by Wmatrix on the other side of the equation. This is a practical way of presenting, which is not meant to suggest that all runners-up belong together in that complementary domain.)

Overall, ten types of our violence metaphors are consistently analyzed by Wmatrix as featuring their target-domain semantic field as the contextually most relevant one (such as the use of both verbs and nouns *battle* and *fight*). Five types are consistently analyzed via the semantic field related to the source-domain (such as the use of *hit* as a verb and *kick* as verb and noun). The former would hence be indirect and non-deliberate metaphors, while the latter would be direct and hence deliberate. The former are in accordance with the expectations of DMT and constitute the majority, but the latter are not.

The five word types that are analyzed by Wmatrix as having a contextual meaning in a semantic field that is oriented to the source domain as the contextually most appropriate one are *fighter, hit, kick* (verb and noun), *retreat*, and *tackle*. How can we understand why Wmatrix assigned a source-domain oriented reading to these exceptions to the rule predicted by DMT? Can we argue that these five types (or perhaps just tokens, in this sample) are different because they indeed do (primarily) involve deliberate metaphor use? Or are there other reasons for this result? This is the central question for our following analysis.

Why *fighter* would be source-oriented in contrast with *fight*, which is target-oriented, is hard to say. For *fight*, the predominance of a target-domain interpretation is as DMT would expect. When we inspect the immediate co-text of *fighter* (cf. Reijnierse et al., 2020), we find one expression that is related to the target domain of illness ("Consultants," which according to Wmatrix has B3, "medicines and medical treatment"): "I was also fortunate that my Consultants recognised that I was a born fighter and saw my determination." By contrast, *fight* has two words related to illness: *terminal* and *cancer*. This might have given *fight* a more target-domain oriented reading than *fighter*. Another issue may be the fact that, according to the dictionary, *fighter* is less frequent than the verb *fight*. This might affect the way *fighter* is analyzed across data, where it may acquire a stronger and different most frequent semantic field for physical fighting. Finally, this may also be influenced by the presence of "born," which is analyzed as having to do with "anatomy and physiology," B1, which may emphasize the physical sense of *fighter* too. But all of this is speculation. How this analysis by Wmatrix may be evaluated in relation to DMT needs a little more discussion of the details of how Wmatrix employs lexical disambiguation than can be offered here.

For *hit*, the most important issue in the co-text may be a possible first impression of personification (cf. Dorst, 2011): "I respect cancer and never underestimate the power it has, but if you can face up to it and hit it back head on … " The aspects of power, facing up to, and hitting back possibly turn the action of hitting into a physical aspect of a scenario between two persons. Yet, at the same time, this does not seem to be an inevitable, exclusive interpretation of the utterance, for the person-oriented interpretation is weakened by the repeated use of *it* as the verb's object for *face up to* as well as for *hit*. The example may consequently still, and also, be decomposed into a series of indirect and non-deliberately metaphorical parts. These can receive a reading without difficulty as referents in the target domain. This analysis, too, therefore remains open for discussion of details of how lexical disambiguation works, in general and in Wmatrix.

For *kick*, both as a noun and as a verb, we can return to the polysemy analysis (see Table 3). There a target-domain sense of the word *kick* by itself was lacking from the dictionary. At the same time, it was possible that a target-domain sense could be derived from the use of *kick* in set phrases. These set phrases in fact add another word to the expression, like *butt* and *ass*, which is potentially source domain. These additions hence increase the formal presence of the source domain while affording access to a conventionalized target-domain meaning for the phrase as a whole. How this may work is a general issue for future research. What is more, these phrases are here used in creative ways, as is also noted by Semino et al. (2018), which may clearly increase the prominence of the source domain. This creative use may enhance the impression of directness as well as deliberateness. This could be enough to explain that Wmatrix analyzes their contextual meaning as indeed going via the source domain, and perhaps even exclusively so. But this is again speculation.

Then there is *retreat*. The presence of *wither* as well as *weary battle* seem to push for a source-oriented meaning, more so than the co-texts in most other cases in these data (cf. Reijnierse et al., 2020). Wmatrix may hence have preferred the analysis amounting to direct use, related to an encompassing literal violence scenario. This would also work on the basis of the first senses of the words in the dictionary. However, indirect use is still possible, also for all other words in the environment (*wither, weary*, and *battle*). That is why this, too, remains a questionable case: it is a case that, structurally-functionally, is on the edge of indirect and direct use.

In sum, for both uses of *kick*, we may want to re-consider and re-analyze them as exclusively direct. This would also make them deliberate. Once this perspective has been adopted, it gets difficult to also push for a non-deliberate meaning, and the ambiguity disappears. We can for this moment defend this interpretation and ignore the tokens of this type as a less obvious but still likely case of direct use.

This does not hold for *fighter, hit, tackle*, and *retreat*. These remain at least potentially indirect and non-deliberate from the point of view of DMT. Their analysis via the source-domain as most prominent by Wmatrix is still open for discussion, but it could turn them into direct and deliberate metaphors. Their ambiguous status between direct and indirect meaning, shown in Table 4, remains a strong argument for re-considering more deeply what is happening in the Wmatrix analysis (and in these cases themselves). We consequently now have fourteen ambiguous types, of which ten follow the prediction of DMT while four do not, while two have been removed from our sample as counting as more plausibly univocally direct (*kick* as a noun and a verb).

This analysis was finally given a little more substance and hence foundation by broadening its scope. All other examples from Chapter Five (from 5.26 to 5.49) were added to the sample and subjected to the same analysis. There was one new type that was obviously direct in both examples it occurred in, *sledgehammer* (Examples 5.31, 5.34), and it was consequently left aside.

> 5.31 What did I think all my normal little cells were doing after being hit by a sledgehammer of both toxic chemicals and radiation

> 5.34 It does get easier. Not better, but definitely easier. But it still hits like a sledgehammer sometimes

Analysis of the rest of the MRWS in these examples yields the same pattern as in the first half of the chapter, as will now be briefly indicated.

All new tokens of *hit* are tagged first by the source-domain tag of E3-, "violent/angry," as before. New tokens of *fight* are also tagged first identically as in the first half of the chapter, but here we are dealing with a target domain: S8-, "hindering." The same holds for new tokens of *battle* (X8+, "trying hard," target). This reinforces our conclusions about the data in the first 25 examples. Three out of four new tokens of another type analyzed above, *struggle*, are also tagged as before, and oriented toward the target-domain X8+, "trying hard" (Examples 5.37, 5.38, 5.39).

New types occur as well: Example 5.36, *devastation* (A1.1.2); Example 5.39, *given up* (T2-, "time: ending"); Example 5.41, 5.42 (two cases), and 5.43, *confront* (A1.1.1); and Example 5.43, *conflict* (A6.1-). They are all tagged first by target-domain fields concerning general and abstract terms.

The overall observation about the data in the first half of the chapter is hence reinforced by the analysis of this second group of data. Combining all observations, most types in the entire chapter ($N = 14$) are ambiguous between non-deliberate and deliberate use and analyzed as primarily related to a semantic field in the target-domain by Wmatrix. This is in accordance with the expectations of DMT. A few types ($N = 4$) are ambiguous between non-deliberate and deliberate use and assigned a semantic field and contextual meaning that is primarily related to the source domain by Wmatrix. Not all of these cases can be easily explained by aspects of the metaphor in question, its co-text, or its context. This raises interesting questions about the relation between Wmatrix and DMT.

Discussion

This study examined whether a closer investigation of metaphors that are polysemous, conventional, and presumably indirect and therefore non-deliberate could offer further support for an idea formulated on the basis of one case study in Steen (2023a), which suggests that this class of metaphors is in fact systematically ambiguous between two kinds of meaning, one indirect and non-deliberate, and one direct and deliberate. The finding of this study is clear: all cases from a small sample of natural discourse data from Semino et al. (2018) that qualified as polysemous and conventional in general terms, and indirect and non-deliberate according to DMT, could indeed be shown to display this kind of ambiguity. In particular, this class of metaphors allows for both non-deliberate interpretation via the conventionalized target-domain sense of the Metaphor-Related Word, as well as a deliberate interpretation via the source-domain sense of the same Metaphor-Related word. Formal modeling of a selection of ten utterances from the analyses has shown how this ambiguity is predicted to work in detail during processing, in the online materials (OSF | Metaphor, polysemy, and ambiguity).

It is the polysemy of the Metaphor-Related Word that structurally allows for access to both a target-domain concept and referent as well as a source-domain concept and referent (cf. Glucksberg, 2001, 2008). When comprehension goes via the source domain, a local analogy (or cross-domain mapping) is needed to connect the source-domain concept and referent with some corresponding target-domain referent in the situation model, and this can be done by analogical projection. This counts as a case of deliberate metaphor use, where a metaphor is intended to be used as a metaphor. When comprehension goes via the target domain, local analogy (or cross-domain mapping) is not needed, for then the target-domain referent is directly available from the sense via the concept as a referent. This counts as non-deliberate metaphor use, where a metaphor is not intended to be used as a metaphor. The analysis of these data supports the idea that metaphor and polysemy (which is linked to conventionality) leads to structural ambiguity between deliberate versus non-deliberate use (which is linked to direct versus indirect reference).

This yields a new perspective on a structural-functional taxonomy for metaphor that is based on the 4D model explained in Steen (2023a):

(1) Some metaphor is novel but most metaphor is conventional ("metaphor in thought").
(2) When metaphor is novel, it is unfamiliar and creative ("metaphor in language")," displays direct reference to source-domain elements in some situation ("metaphor and reference"), and is

deliberately meant to work as a metaphor between interlocutors ("metaphor in communication").
(3) When metaphor is conventional, it is sometimes expressed in unfamiliar, creative terms, but mostly in familiar, non-creative terms.
(4) When conventional metaphor is unfamiliar or creative, it is typically direct and deliberate.
(5) When conventional metaphor is familiar it is polysemous and, as has been shown in this study, ambiguous between indirect, non-deliberate use versus direct, deliberate use; this will typically be resolved in favor of indirect, non-deliberate use, but in specific circumstances can be resolved in favor of direct, deliberate use. It is this category of polysemous metaphor which is most frequent and which allows for multivalent use, both within and between people.

All of this is important because this variation in structure and function by means of the four basic dimensions distinguished in DMT is assumed to be related to variation in processing, especially with regard to the role of lexical disambiguation and analogy, or cross-domain comparison (Steen, 2023a, 2023b). This yields a rather complex picture of how metaphor can work, does work, and often works in comprehension and understanding. It has led to the postulation of a paradox of metaphor, which is now explained (Steen, 2008). This complex picture does not just apply to intense emotional experiences but is part and parcel of most metaphor use (cf. Turner & Littlemore, 2023).

The motivation of this study comes from the observation that occasionally there is resistance to metaphor. This presupposes that it is possible for people to argue over the intended meaning of utterances that contain Metaphor-Related Words. In real-life situations, language users can interact about what they intend to refer to, for instance, cancer or fighting or war (cf. Reijnierse & Burgers, 2023). These are meaningful differences that have to do with emotions, interpersonal relationships, and language awareness. These differences clearly can also affect how people produce and comprehend metaphors in this domain when they perform fast and automatically. It is crucial that theories of metaphor bring these aspects of metaphor use in discourse together in an encompassing and coherent framework in order to test these ideas in new experimental efforts.

The ambiguity between deliberate versus non-deliberate metaphor use is an essential part of how metaphor use can be described and explained. It concerns the bulk of all metaphor in usage and can lead to lack of clarity in communication between people. This can also affect how a metaphor is attributed a purpose in discourse. If the bulk of all cases in their particular use as a violence metaphor is in fact not assigned a source-domain semantic field that has to do with violence, but rather with more general referents that can occur in handling a disease like cancer, then the question arises how these violence terms can exert an effect of figurative framing? If these words do not make people think via the source domain of a metaphor in comprehension, as is suggested by the predominance of target-domain semantic fields in the analysis of the data, then what is really happening in their minds? These are questions that have been central to Deliberate Metaphor Theory and their urgency has now been demonstrated in another way.

What is more, this approach can even empower people to be more aware of the choices they have in metaphor use (see Steen, 2023a, 2023b). They can resist metaphors or aspects of metaphors by pointing to their metaphorical origins. They can then suggest alternative ways of speaking, either by means of other metaphors or by focusing on non-metaphorical ways of expression. They can also focus on the possibility of using a metaphor for its target-oriented meaning, precisely without having recourse to its analogical relation with conceptual structures in the source. These are options for application that invite further exploration in research, which can now start out from better evidence for the fact that most metaphor is ambiguous between deliberate and non-deliberate use.

The question then gains weight how this ambiguity is managed in actual usage between different language users, discourse events and domains, and genre conventions, suggesting that we may need a new pragmatics of metaphor. The original proposal by DMT (Reijnierse et al., 2019; Steen, 2008) held that metaphor management happens most often by a default convention that takes the bulk of metaphor as non-deliberate. This idea is not incompatible with the above findings and questions, but the presence of resistance to metaphor has thrown a new light on this issue (Steen, 2023a, 2023b). It brings in the role of language awareness (how to speak about a particular topic) and discourse awareness (how to behave as a discourse participant in specific discourse events with their concomitant domains and relationships and topics such as health and care, science and education, literature and the arts, and so on).

DMT's original proposal of a paradox of metaphor (Steen, 2008) went straight against the received view mostly promoted in cognitive linguistics that all of these metaphors in fact do require analogizing or cross-domain mapping. That there are two big options for metaphor comprehension, via local analogy or cross-domain mapping on the one hand versus simple lexical disambiguation on the other, can now be better understood from the perspective of the structural ambiguity that is caused by conventional polysemy. If affords multivalent metaphor use and explains the paradox of metaphor.

All of this needs more research about the conditions when which use is preferred and why, while part of this question should also be whether we are dealing with immediate comprehension or post-comprehension understanding processes including metaphor recognition, interpretation, and appreciation (Steen, 2023a). If this is accepted as a set of coherent questions that need further investigation, then we can also use them to return to the less common cases of *fighter, hit*, and *tackled* in our data set. The obvious approach would be to regard them as deliberate versions of their non-deliberate equivalents, which is now a possibility given the above. However, then the question is what conditions can be indicated that have promoted this deliberate interpretation versus the more frequent non-deliberate one. DMT may therefore be seen as generating new questions for Wmatrix, too, in that it asks how analysts determine what counts as a "contextually appropriate tag." The distinctions made above have different implications for different metaphors, and this approach may be employed for increasing Wmatrix's 91% score of accuracy in the future.

In sum, most metaphor is ambiguous between deliberate and non-deliberate use. DMT predicts a difference in process and effect between these two uses. Deliberate metaphor comprehension needs analogizing, while non-deliberate metaphor comprehension does not do so and can be handled by lexical disambiguation alone. This is because most metaphor is conventional and based in polysemy. This is also why this ambiguity is important because it can lead to two different kinds of mental representations among users for the bulk of metaphor, and therefore to multivalence in use. Our analysis suggests that if language users and discourse participants wish to manage this ambiguity and be maximally clear about their intentions, they may have to employ specific precautions so that applied metaphor research gets systematically related to language awareness and discourse awareness.

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