

## Whose Metaphor?: Metaphor in belief reports \*

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XIAOXUAN CHEN  
THE UNIVERSITY OF CAMBRIDGE

### 1 INTRODUCTION

In this paper, I address the topic of propositional attitude reports with embedded metaphors which is currently significantly underresearched. While there has been a great deal of work on propositional attitude reports on the one hand, and figurative language on the other, as two separate areas, relatively little attention has been devoted to the intersection of them. This paper will explore the possible readings of propositional attitude reports with embedded metaphors, and a detailed distinction of five identified readings is presented.<sup>1</sup> The five readings are then classified into three main categories: (i) the metaphor belongs to the reporter, (ii) the metaphor belongs to the subject of the report, and (iii) the metaphor belongs to both the reporter and the subject of the report. For each identified reading, I provide a semi-formal representation based on [Schiffer's \(1992\)](#) representation of the logical form of belief reports.

### 2 IDENTIFYING DIFFERENT READINGS

According to [Wilks, Barnden & Wang \(1996\)](#), there is a metaphor scoping issue in belief reports. Consider the following example:

(1) John believes that a cure for terrorism is needed.

Their example ([Wilks et al. 1996: 148](#)) reflects a conceptual metaphor TERRORISM IS A DISEASE. It can be contentious whether this expression is too conventional to be metaphorical, since some researchers argue that this type of expressions studied by cognitive linguists is viewed as literal by ordinary speakers. I will set this problem aside for the moment to discuss this example.

Wilks and his colleagues point out two available readings. They call the first one the 'inner scope' reading (meaning that the metaphor takes a narrow scope) in which John, the belief holder himself, has the metaphorical belief of terrorism as a disease. The report can be based on John's own utterance in (1 $\alpha$ ) which he used to express his belief.

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<sup>1</sup> The ambiguity is not confined to metaphor embedded in propositional attitude reports but applies to all figurative language. See [Popa-Wyatt \(2019\)](#) for a discussion of irony embedded in propositional attitude reports.

(1 $\alpha$ ) A cure for terrorism is needed.

Hence, on this reading, the reporter is straightforwardly reporting John's belief with John's metaphor used in his own utterance. On this reading, it is not clear whether the reporter has the same metaphorical mode of thinking or he/she is merely reporting John's belief.

The second reading they identify is the "outer scope" reading (meaning that the metaphor takes a wide scope) where the speaker metaphorically reports what John believes about terrorism. They state that, in this case, the belief holder John does not necessarily have a belief under the terrorism-as-disease metaphor. John's original utterance can be (1 $\beta$ ). In uttering (1 $\beta$ ), John seems to hold a more literally phrased belief without a metaphor.

(1 $\beta$ ) Something needs to be done to eliminate terrorism and repair the damage it has done to society.

Wilks and his colleagues rightly identify these two general types of readings: (i) the narrow-scope reading where the metaphor belongs to the holder of the belief, and (ii) the wide-scope reading where the metaphor belongs to the reporter. I will call the 'metaphor' here, which takes scope and can belong to the reporter or the belief holder, a Metaphorical Mode of Presentation (henceforth MMoP), drawing on the notion of mode of presentation (henceforth MoP) or the Fregean sense (Frege 1892/1994).

More detailed readings can be identified by attributing MMoP to the belief holder, the reporter, or both of them. In doing so, we can create different combinations which engender the following readings of (1):

- ① The terrorism-as-disease MMoP belongs to the holder of the belief (here: John).
  - A The reporter does not have the terrorism-as-disease MMoP and thinks of terrorism literally.
  - B The reporter also has the terrorism-as-disease MMoP.
  - C The reporter has another MMoP, for example a terrorism-as-beast MMoP, rather than the terrorism-as-disease MMoP.
- ② The terrorism-as-disease MMoP belongs to the reporter.
  - A The belief holder does not have the terrorism-as-disease MMoP and thinks of terrorism literally.
  - B The belief holder also has the terrorism-as-disease MMoP.
  - C The belief holder has another MMoP, for example a terrorism-as-beast MMoP, rather than the terrorism-as-disease MMoP.

Table 1 shows how the combinations can form these different scenarios. In Table 1, 'BMMoP' stands for the MMoP pertaining to the holder of the belief and 'RMMoP' for the MMoP pertaining to the reporter.

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		BMMoP		
		0	1	2
RMMoP	0	n/a	①A	n/a
	1	②A	①B/ ②B	②C
	2	n/a	①C	n/a

Table 1

- 0 = No MMoP
- 1 = Terrorism-as-disease MMoP
- 2 = Terrorism-as-beast MMoP
- n/a = Not applicable

Next, we will need to figure out exactly what readings can we get from these different combinations. Cell (0,0) represents the scenario in which neither the belief holder nor the reporter has MMoP. They both think of terrorism literally. This cell is invalid for (1) since the reporter would not be able to utter the belief report in (1) in this scenario. Similarly, cell (0,2) also corresponds to an invalid scenario for (1) because the reporter would not be able to produce the report with terrorism-as-disease MMoP in (1) while she thinks of terrorism literally and the belief holder expressed his belief about terrorism with another MMoP (e.g., Terrorism as a beast which needs to be defeated).

Cell (0,1) corresponds to ①A in which the belief holder John has the metaphorical belief of terrorism as a disease, and the reporter who thinks of terrorism in a literal way employs John’s own metaphor to report his belief. This is the ‘inner scope’ reading identified by Wilks and his colleagues. For this sentence, this reading might not be very obvious since the metaphorical use of ‘cure’ is quite conventional. We can obtain this reading more easily if a more novel metaphor is used.

The scenario ②A in cell (1,0) represents that John holds a literal belief about terrorism and the reporter uses terrorism-as-disease MMoP to metaphorically report John’s literal belief. This is the ‘outer scope’ reading identified by Wilks and his colleagues.

We can see from cell (1,1) that ①B and ②B seem to be the same scenario and give rise to the same reading where both the belief holder John and the reporter have the terrorism-as-disease MMoP. After John has expressed his metaphorical belief with (1 $\alpha$ ), the reporter employs the terrorism-as-disease MMoP to report John’s belief directly because he/she also thinks of terrorism as a disease. Notably, the reporter here need not necessarily be committed to the informational content of John’s belief. The reporter, disagreeing with John’s belief, can hold the belief in (1 $\gamma$ ) where she also has the terrorism-as-disease MMoP.

(1 $\gamma$ ) A cure for terrorism is not needed.

The reading we get from ①B/②B appears to be the same as the reading in ①A where the reporter also reports John's metaphorical belief directly. However, they are slightly different in that the reporter in ①A is not committed to John's terrorism-as-disease MMoP. The reporter is merely reporting John's belief including John's MMoP. We will be able to see the difference in the representations of the two readings in the next section.

The last cell in the second row corresponds to ②C in which the belief holder John has another MMoP and thinks of terrorism as a beast rather than a disease, but the reporter uses the terrorism-as-disease MMoP to report John's belief. For example, John might have uttered (18).

(18) Terrorism needs to be defeated.

When the reporter reports this belief with (1), the original terrorism-as-beast MMoP is replaced by the reporter's terrorism-as-disease MMoP. Although it can be regarded as an appropriate report of John's belief, it is obvious that some meanings are added while some are lost due to the change of MMoP. For instance, the expression 'the cure for terrorism' seems to involve 'repairing the damage terrorism has done to society' while 'defeating terrorism' does not.

Similar to the first row, the third row also has two cells representing two invalid scenarios for the belief report in (1). In cell (2,0), the belief holder thinks of terrorism literally while the reporter thinks of terrorism as a beast. In cell (2,2), both the belief holder and the reporter have the terrorism-as-beast MMoP. Neither of them will be able to generate a valid reading for (1).

The reading for ①C in cell (2,1) is that the belief holder John holds a metaphorical belief with terrorism-as-disease MMoP and has uttered (1 $\alpha$ ). The reporter reports John's belief straightforwardly with the same MMoP although he/she thinks of terrorism in another related metaphorical way (terrorism-as-beast MMoP).

In sum, we have identified five different readings for the belief report in (1) which has a metaphorical expression embedded in its *that*-clause. In the next section, I will attempt to represent them in a more formal way.

### 3 REPRESENTING THE DIFFERENT READINGS

A reasonable approach to represent the readings we identified in the previous section is to adapt and extend Schiffer's (1992) analysis of belief reports.

Schiffer (1992: 503) proposes tentatively that (2') can be used to represent the logical form of an utterance of the sentence in (2).<sup>2</sup>

(2) Ralph believes that Fido is a dog.

<sup>2</sup> Schiffer's (1992) proposal is tentative in that he does not commit himself to compositional semantics of belief reports. His claims are conditional. He suggests (2') as a representation of the logical form of the belief report in (2) on the assumption that English has a compositional semantics.

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(2')  $(\exists m) (\Phi^* m \ \& \ B \text{ (Ralph, } \langle \text{Fido, doghood} \rangle, m))$

In this representation,  $m$  stands for a mode of presentation and  $\Phi^*$  for a type of mode of presentation determined by context. The  $\Phi^*$ , he indicates, is how Ralph thinks about Fido and about doghood. For example, in the story that Schiffer provides as the context of (2), Ralph thinks of Fido as the dog that begs at his door every morning and that he feeds.

Thus, on this proposal, 'believe' expresses a three-place relation  $B(x, p, m)$  in a belief report sentence in the form of ' $x$  believes that  $p$ ' (Schiffer 1992: 500). This predicate takes three arguments: a belief holder  $x$  (here: Ralph), a proposition  $p$  (here:  $\langle \text{Fido, doghood} \rangle$ ), and a mode of presentation  $m$ . A third argument  $m$  is added to preserve the compositionality of meaning.

It seems that this way of representing belief reports can be applied to representing the different possible readings we identified for (1) (repeated below). In addition to the belief holder, we will also need to take the reporter/speaker in to account. Let us suppose that the reporter is Sarah.

(1) Sarah: John believes that a cure for terrorism is needed.

### 3.1 Reading ①A

On this reading, the belief holder John has the metaphorical belief of terrorism as a disease, and the reporter Sarah who thinks of terrorism in a literal way, is faithfully reporting John's belief by employing his terrorism-as-disease MMoP. Following Schiffer (1992), we might represent this reading semi-formally as (1.1a) in which  $\Phi_{\text{met}}^*(m)$  represents a metaphorical mode of presentation.<sup>3</sup> We simplify the proposition in the 'believe' relation as  $p$  rather than breaking it down in that it serves the purpose of my discussion

(1.1a)  $\exists m (\Phi_{\text{met}}^*(m) \ \& \ \text{Bel} \text{ (John, } p, m))$

### 3.2 Reading ②A

On this reading, John thinks of terrorism literally and the reporter uses the terrorism-as-disease MMoP to metaphorically report John's literal belief. The representation might be (1.2a') where  $\Phi_{\text{lit}}^*(m)$  stands for literal MoP if we want to specify that John believes  $p$  under a literal MoP. Variable  $n$  stands for the reporter's (here: Sarah's) mode of presentation.

(1.2a')  $\exists m \exists n (\Phi_{\text{lit}}^*(m) \ \& \ (\Phi_{\text{met}}^*(n) \ \& \ \text{Rep} \text{ (Sarah, Bel} \text{ (John, } p, m), n)) \ \& \ m \neq n)$

In order to represent the way in which Sarah reports the belief here, we add another relation  $\text{—Rep}(y, q, n)$  meaning that the reporter  $y$  reports the proposition

<sup>3</sup> I will use  $\text{Bel}(x, p, m)$  instead of  $B(x, p, m)$  to make it clearer

$q$  under a mode of presentation  $n$ . In my example,  $y$  stands for Sarah and  $q$  for John's belief:  $q = \text{Bel}(\text{John}, p, m)$ . This seems to indicate that the logical form has to be a higher-level representation.

Also, this relation does not specify whether the reporter  $y$  thinks of terrorism under  $n$  when she reports the proposition  $q$  under  $n$ . That is, whether Sarah conceptualizes terrorism under the terrorism-as-disease MMoP is not indicated in the representation in (1.2a'). But, since our study is based on the assumption that metaphor is a way of thinking rather than merely a way of expression, we can say Sarah's way of reporting corresponds to her metaphorical thought of terrorism on this reading.

An attempt to revise our representation of the first reading ①A will naturally follow this analysis. Can we add one more layer to represent the way of reporting as well?

$$(1.1a') \quad \exists m \exists n (\Phi_{\text{met}}^*(m) \ \& \ (\Phi_{\text{lit}}^*(n) \ \& \ \text{Rep}(\text{Sarah}, \text{Bel}(\text{John}, p, m), n)) \ \& \ m \neq n)$$

If we derive (1.1a') on the basis of (1.2a'), there seems to be a problem. What we intend to represent is that John believes  $p$  under the terrorism-as-disease MMoP and Sarah reports his belief faithfully although she thinks of terrorism in a literal way. However, it seems that (1.1a') turns out to mean that Sarah literally reports John's metaphorical belief, which is not even one of the five readings we identified.

How do we revise it then if we want to add the reporting layer to the representation of this reading? It appears that the 'report' here does not necessarily express a three-place relation  $\text{Rep}(y, q, n)$ . Sarah reports John's belief by employing the sentence that John used to express his very belief. She is not reporting it under a distinct MoP. Thus, the  $n$  could be omitted, which turns (1.1a') into:

$$(1.1a'') \quad \exists m (\Phi_{\text{met}}^*(m) \ \& \ \text{Rep}(\text{Sarah}, \text{Bel}(\text{John}, p, m)))$$

Following this approach, we might also simplify (1.2a') into (1.2a) where we omit  $m$  which is the third argument of 'believe'.

$$(1.2a) \quad \exists n (\Phi_{\text{met}}^*(n) \ \& \ \text{Rep}(\text{Sarah}, \text{Bel}(\text{John}, p), n))$$

At this point, the question arises is the following: Can the constituents  $m$  and  $n$  be omitted when a metaphorical mode of presentation is not present? Do the three-place relations for 'believe' and 'report' need to be maintained throughout?

Jaszczolt's (2007) variadic function proposal offers a possible solution for this. This proposal employs the device of a variadic function which was first put forward by Recanati (2002, 2007) within the framework of truth-conditional pragmatics (e.g. Recanati 2002, 2004, 2010). On Recanati's account, the variadic function, as defined below, is applied to predicates such as 'eat' that can function both as transitive and intransitive verbs.

A variadic function is a function from relations to relations, where the output relation differs from the input relation only by its decreased or

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increased adicity. Adding a predicate modifier (adverb or prepositional phrase) to a predicate expressing a  $n$ -ary relation  $R_n$  thus results in a complex predicate expressing an  $n+1$ -ary relation, in which the  $n^{\text{th}}+1$  argument is a circumstance: a time, a location, a manner, or what not. (Recanati 2002: 319)

The predicate 'eat' normally requires two argument, a subject and an object, but the object is not always present. For example, the 'eat' in (3) seems to take only one argument.

(3) Look, Tim is eating!

The scenario is that Tim is fasting before a blood test and his brother utters (3) when he notices that Tim is eating some snacks. Here, the object of the action of eating does not seem to be relevant and hence is absent. On Recanati's view, this means that the adicity of this predicate is underdetermined. It varies between taking one or two arguments, depending on the context of the utterance.

Jaszczolt (2007) follows this account and applies it to the analysis of belief reports and on the level of conceptual representation, incorporating Schiffer's (1992) hidden-indexical theory of belief reports which is also adopted in the present study to represent the identified readings.<sup>4</sup>

According to this proposal, the third argument slot of the predicate 'believe' is filled in by the mode of presentation  $m$  when appropriate, and left out when it is not needed. Thus, the belief operator  $Bel$  varies in the number of arguments. That is, whether it expresses a three-place relation or two place-relation is depended on the context of the utterance. This will allow us to omit the believer's mode of presentation  $m$  in our representations when it is redundant.

Moreover, Jaszczolt (2007) suggests to include the constituent  $m$  in a higher-level conceptual representation rather than shoehorning it into the logical form which is supposed to be the output of syntax as proposed tentatively by Schiffer (1992). By 'moving the representation itself away from syntax' (Jaszczolt 2007: 942), we do not need to reject  $m$  as a constituent of the logical form as Schiffer (2003) ultimately did on the basis that it is not part of the sentence structure and its slot in the logical form is not legitimate. This is very important for our discussion since, as mentioned above, the addition of the predicate 'report' in our representations makes them an even worse candidate of the logical form than those which only includes the  $Bel(x, p, m)$  relation. Therefore, we shall follow the variadic function account and omit  $m$  or  $n$  when it is unnecessary. I will now move on to derive representations for the remaining three readings.

### 3.3 Reading ①B/②B

This is the reading where both the belief holder John and the reporter Sarah have the terrorism-as-disease MMoP. We might represent it as (1.b):

<sup>4</sup> See also Crimmins & Perry (1989) and Crimmins (1992) for another version of hidden-indexical theory.

(1.b)  $\exists m (\Phi_{\text{met}}^*(m) \& \text{Rep}(\text{Sarah}, \text{Bel}(\text{John}, p, m), m))$ <sup>5</sup>

On this reading Sarah and John have the same type of MMoP in mind. It is possible here to omit the  $m$  for Rep and derive (1.b') which equals to (1.1a'') since it stands for the MoP under which Sarah produces the report. Therefore, we can say that Sarah does not use any mode of presentation because she also thinks of terrorism as a disease and thus directly employs this MMoP. However, I would preserve the  $m$  here in order to distinguish this reading from reading ②A where Sarah employs John's MMoP without believing it.

(1.b')  $\exists m (\Phi_{\text{met}}^*(m) \& \text{Rep}(\text{Sarah}, \text{Bel}(\text{John}, p, m)))$

Similar to the reading ①B/②B, both Sarah and John have MMoP in the following two readings ②C and ①C. The difference is that they have two different MMoPs.

### 3.4 Reading ②C

On this reading, John has another MMoP and thinks of terrorism as a beast, but the reporter Sarah uses the terrorism-as-disease MMoP to report John's belief because she thinks of terrorism in this way. (1.2c) is a possible representation where  $n$  stands for the terrorism-as-disease MMoP and  $m$  for the terrorism-as-beast MMoP.

(1.2c)  $\exists m \exists n (\Phi_{\text{met}}^*(m) \& (\Phi_{\text{met}}^*(n) \& \text{Rep}(\text{Sarah}, \text{Bel}(\text{John}, p, m), n)) \& m \neq n)$

We can see from this representation that, under the terrorism-as-disease MMoP, Sarah reports John's belief under terrorism-as-beast MMoP. In this representation,  $m$  and  $n$  seems to stand for different metaphorical schemas (TERRORISM IS A DISEASE and TERRORISM IS A BEAST) which are structures provided by conceptual metaphors for organizing information about a topic (see e.g. Lakoff & Johnson 1980, Gibbs 1992, Allbritton, McKoon & Gerrig 1995). Different metaphorical expressions can be subsumed under the same metaphorical schema. For example, 'cure for terrorism', 'remedy for terrorism' and 'diagnosis of the source of terrorism' are all corresponding to the TERRORISM IS A DISEASE schema.

Thus, there can be situations in which the metaphorical expression used by the reporter is different from that used by the belief holder in the original utterance, but both expressions correspond to the same metaphorical schema. Suppose that John's original utterance is (1ε). Sarah is using a similar metaphorical expression that is from the same schema by reporting it with (1).

(1ε) A remedy for terrorism is needed.

In this case, there are two methods to represent this reading. The first one is to represent it as (1.2c'). As it does in (1.2c),  $m$  here still stands for the MMoP that corresponds to the metaphorical schema and can be realised as a range of similar expressions.

<sup>5</sup> In this representation, the third argument of 'Rep' is  $m$  in that it is not necessary to distinguish between  $m$  and  $n$  here.

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$$(1.2c') \quad \exists m (\Phi_{\text{met}}^*(m) \& \text{Rep}(\text{Sarah}, \text{Bel}(\text{John}, p, m), m))$$

The second method is to represent it as (1.2c'') where  $m$  and  $n$  each stands for a specific metaphorical expression (in this case 'cure' and 'remedy') rather than a metaphorical schema. Comm here stands for 'commensurable' in the sense of belonging to the same metaphorical schema (in this case TERRORISM IS A DISEASE).

$$(1.2c'') \quad \exists m \exists n (\Phi_{\text{met}}^*(m) \& (\Phi_{\text{met}}^*(n) \& \text{Rep}(\text{Sarah}, \text{Bel}(\text{John}, p, m), n)) \& m \neq n \& \text{Comm}(m, n))$$

These two methods seem to capture two different types of mode of presentation. Recanati (1993) distinguishes between linguistic mode of presentation which is determined by linguistic rules and psychological mode of presentation which is in the thought. We might employ his distinction and say that the first method captures the psychological MoP and the second the linguistic MoP.

For the purpose of our discussion, we need to capture the psychological mode of presentation in that we are considering MMoP. As stated above, our analysis is based on the assumption that metaphor is a way of thinking, thus psychological. Representing the MMoP as a linguistic MoP seems to entail that metaphor is a way of expression and is decorative, which contradicts our assumption.

Therefore, we will take (1.2c') as the representation of this reading. We can see that (1.2c') is the same as (1β), thus we can subsume this reading (where the reporter and belief holder use different metaphorical expressions from the same metaphorical schema) under reading ①B/②B. In other words, since we want to represent psychological MoP, we will consider this reading as the one where the reporter and belief holder using the same MMoP.

### 3.5 Reading ①C

On this reading, Sarah and John also have different MMoPs, but the terrorism-as-beast MMoP belongs to Sarah while the terrorism-as-disease MMoP to John. So, she reports John's belief under John's MMoP  $m$  with the intention of producing a more faithful report, even though she has another MMoP  $n$ . If we follow (1.2c), we will derive a representation as in (1.1c).

$$(1.1c) \quad \exists m \exists n (\Phi_{\text{met}}^*(m) \& (\Phi_{\text{met}}^*(n) \& \text{Rep}(\text{Sarah}, \text{Bel}(\text{John}, p, m), m)) \& \text{Bel}(\text{Sarah}, p, n) \& m \neq n)^{6,7}$$

After deriving the representation for all five readings we identified in the previous section, we can see that reading ②A and ②C can be combined into one reading where the MMoP belongs to the reporter. Similarly, ①A and ①C can be

<sup>6</sup> In this representation it is assumed that Sarah also believes  $p$ . In other words, she believes  $p$  under the terrorism-as-beast MMoP rather than simply thinks of terrorism as a beast. Without this assumption, 'Bel' would have to be replaced with a non-committal Att for 'attitude'.

<sup>7</sup> Here 'Rep' having  $m$  in its third argument slot represents a 'quotative reading' where Sarah quotes John's MMoP  $m$ .

combined in to one reading where the MMoP belongs to the holder of the belief. For the interpretation of the utterance, whether the MMoP belongs to the reporter, belief holder or both is more relevant. Whether the  $m$  (which can belong to either the reporter or the speaker) that is different from the MMoP surfaced in the report sentence is literal or metaphorical is less relevant. Thus, providing a simplified logical form to represent a general reading where the metaphor in the report sentence belongs to the reporter and one to represent another general meaning where the metaphor in the report sentence belongs to the belief holder is to represent what is in the sentence (i.e., what the reporter Sarah reports on). On the other hand, the representation of the detailed sub-reading ①C is representing both what Sarah reports and what she believes. The ‘Bel (Sarah,  $p$ ,  $n$ )’ part is in her mind, which is less relevant to the utterance.

However, it does not entail that distinguishing ②A from ②C and ①A from ①C is unnecessary. Some questions related to literal/non-literal distinction can be addressed by analysing these detailly distinguished readings (e.g., Is there any difference between replacing literally phrased expression with one that has MMoP and replacing one MMoP with another?). Rather, we can have a more detailed distinction among five readings on the one hand, and a simplified three-way distinction on the other. The three readings and their representations are the following, where ‘M’ stands for MMoP. Also, the distinction into  $m$  and  $n$  is no longer necessary here, so  $m$  stands for the mode of presentation attributed as in the particular formula.

(i) Reporter-M reading:

$$\exists m (\Phi_{\text{met}}^*(m) \& \text{Rep} (\text{Sarah}, \text{Bel} (\text{John}, p), m))$$

(ii) Believer-M reading:

$$\exists m (\Phi_{\text{met}}^*(m) \& \text{Rep} (\text{Sarah}, \text{Bel} (\text{John}, p, m)))$$

(iii) Mutual-M reading:

$$\exists m (\Phi_{\text{met}}^*(m) \& \text{Rep} (\text{Sarah}, \text{Bel} (\text{John}, p, m), m))$$

The representation for Reporter-M reading is adopted from (1.2a of reading ②A). It shows that the MMoP that surfaces in the report sentence (1) belongs to the reporter Sarah, and it takes a wide scope over the report on the belief. The representation (1.1a'') of reading ①A is used for the Believer-M reading which shows that the MMoP surfaces in the report sentence (1) belongs to the Belief holder John, and it takes a narrow scope over the reported belief. Finally, the representation for Mutual-M reading is adopted from (1β) of ①B/②B indicating that the metaphorical mode of presentation surfaces in the report sentence (1) belongs to both of them.

#### 4 CONCLUSION

This paper has presented the possible readings of propositional attitude reports with embedded metaphor. Also, I have attempted to formalize the presented read-

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ings based on Schiffer's (1992) proposal to add the mode of presentation of a proposition to the logical form. At this point, the questions that naturally arise are the following:

- (i) What exactly is the metaphorical mode of presentation?
- (ii) What information falls under MMoP?

As it is observed by Schiffer, there is a problem of identifying candidates for what modes of presentation are, since MoP is a functionally defined technical notion and it can in principle mean whatever plays the mode-of-presentation role in order to make the semantics of reports compositional. Furthermore, the characterization of MMoP will have to be purpose-made in order to account only for that part of information that makes a difference to truth conditions – to the extent that sometimes the argument for MoP may have to be omitted from the representation, following the variadic function account discussed earlier. These questions remain to be addressed in my follow-up research.

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Xiaoxuan Chen  
The University of Cambridge  
[xc320@cam.ac.uk](mailto:xc320@cam.ac.uk)