

## THE PUBLICITY OF THOUGHT

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*An influential tradition holds that thoughts are public: different thinkers share many of their thoughts, and the same applies to a single subject at different times. This ‘publicity principle’ has recently come under attack. Arguments by Mark Crimmins, Richard Heck and Brian Loar seem to show that publicity is inconsistent with the widely accepted principle that someone who is ignorant or mistaken about certain identity facts will have distinct thoughts about the relevant object—for instance, the astronomer who does not know that Hesperus is Phosphorus will have two distinct thoughts HESPERUS IS BRIGHT and PHOSPHORUS IS BRIGHT. In this paper, I argue that publicity can be defended if we adopt a relational account on which thoughts are individuated by their mutual relations. I then go on to develop a specific relational theory—the ‘linking account’—and contrast it with other relational views.*

**Keywords:** Publicity, Fregean Constraint, Frege cases, thought individuation, communication, memory.

### I. INTRODUCTION

The idea that thoughts are public and shareable has played a crucial role in recent philosophy of mind and language. Frege famously held that different thinkers can grasp the same thought: a Fregean sense ‘[...] may well be common property of many and is therefore not a part or mode of the single person’s mind: for it cannot well be denied that mankind possesses a common treasure of thoughts which is transmitted from generation to generation.’ (Frege 1892: 188)<sup>1</sup> An influential tradition followed Frege in holding that ordinary thinkers ‘can and do’ (Fodor 1998: 28) share many of their thoughts. However, this ‘publicity principle’ has recently come under attack. One reason for this is that publicity is notoriously in tension<sup>2</sup> with another influential Fregean idea, the idea that someone who is mistaken or ignorant about certain identity facts

<sup>1</sup> See also Frege (1918). Frege’s views about publicity raise difficult exegetical questions that cannot be addressed here. See, for instance, Frege’s (1918) remarks on first-person thoughts.

<sup>2</sup> See Crimmins (1992: 35–53), Heck (2002), Loar (1988), Cumming (2013: especially p. 15), Aydede (1998; 2000a,b), Laurence and Margolis (2007), Schneider (2011) and Duhau (2012).

must have distinct thoughts about the relevant object. Suppose someone is in a so-called *Frege case*—for instance, consider an astronomer who does not know that ‘Hesperus’ and ‘Phosphorus’ corefer. According to most authors, the thought she expresses with ‘Hesperus is bright’ must be distinct from the thought she expresses with ‘Phosphorus is bright’.

To see why Frege cases generate a tension with publicity, note that a theory of thought should provide an *individuation criterion* (or *identity criterion*) for thoughts, i.e., a set of identity conditions of the following form:

**Individuation criterion:** A thought  $t_a$  is the same thought as a thought  $t_b$  iff ...

Now, publicity pushes us to individuate thoughts coarsely. Our individuation criterion must not be too strict, or it will count any two subjects as having different thoughts. On the contrary, Frege cases push us to individuate thoughts finely. Our individuation criterion must not be too loose, or it will count the astronomer’s thoughts as the same.

Let us give one example to see why the tension arises. Suppose we adopt an *holistic* individuation criterion on which two thoughts are the same only if they have exactly the same inferential connections<sup>3</sup>—where, roughly, a thought  $t_a$  is inferentially connected to a thought  $t_b$  just in case the thinker is disposed to infer  $t_b$  from  $t_a$  or  $t_a$  from  $t_b$ . Now, the thought the astronomer expresses with ‘Hesperus is bright’ will be inferentially connected to the thought THE BRIGHTEST HEAVENLY BODY WHICH APPEARS IN THE EVENING IS BRIGHT.<sup>4</sup> On the contrary, the thought the astronomer expresses with ‘Phosphorus is bright’ will not have this inferential connection. So the holistic criterion correctly predicts that in our Frege case the astronomer’s thoughts are distinct. Unfortunately, however, the criterion clearly violates publicity—as holists themselves recognise. My thought HESPERUS IS BRIGHT is inferentially connected to many other thoughts—thoughts about other heavenly bodies, about the Solar System, and so on. So, according to an holistic criterion, my thought is the same as yours only if my beliefs about these matters (heavenly bodies, the Solar System ...) are exactly the same as yours. Since this is very unlikely, the holist holds that two subjects almost never have the same thoughts.

Can any criterion for thought identity account for Frege cases and publicity at the same time? Arguments by Mark Crimmins, Richard Heck and Brian Loar suggest a negative answer—to account for Frege cases we must reject the publicity of thought.<sup>5</sup> This paper has two main aims. My first aim is to defend publicity. Having examined the arguments based on Crimmins’, Heck’s and Loar’s considerations, I will identify their common structure and

<sup>3</sup> See for instance Block (1993) and Schneider (2011).

<sup>4</sup> Following standard usage, I refer to thoughts and their constituents by using expressions in small capitals.

<sup>5</sup> Duhau (2012) rejects publicity for the same reason.

propose a unified response—the arguments fail to refute publicity if we assume a relational model,<sup>6</sup> i.e., a model that individuates thoughts in terms of their mutual relations. This will be my focus in Sections IV–VII. In Section VIII, I will move to my second goal, sketching a specific relational account that differs from the other relational proposals currently on the market. Sections II and III will set up the background for our discussion.

To my knowledge, this is the first attempt to answer the arguments based on Crimmins, Heck and Loar through a unified relational response and to defend the specific relational account I favour. At the same time, as I will later explain in more detail, my arguments are much indebted to the previous literature on the topic, particularly to other defenders of the relational model.<sup>7</sup> Campbell (1987), Sainsbury (2002), Millikan (1997; 2000), Cumming (2013), Dickie and Rattan (2010), Schroeter (2012) and Prosser (unpublished manuscript).<sup>8</sup> My aim is to contribute to this emerging picture of thought individuation.

## II. PUBLICITY, COMMUNICATION AND MEMORY

Following standard usage,<sup>9</sup> let a *thought* be a representation of a state of affairs to which a subject can bear various propositional attitude relations. For instance, the thought HUME WROTE ‘A TREATISE OF HUMAN NATURE’ represents the state of affairs *Hume’s having written A Treatise of Human Nature*.<sup>10</sup> A subject can just *entertain* that thought, in which case she will represent the corresponding state

<sup>6</sup> The label ‘relational’ is from Cumming (2013: 15) and Schroeter (2012).

<sup>7</sup> I am especially indebted to Dickie and Rattan (2010), Schroeter (2012), Schroeter and Schroeter (2014), Cumming (2013) and Prosser (unpublished manuscript), even though my relational view is different from each of these illuminating proposals.

Dickie and Rattan use their relational account to respond to Heck. However, my response to Heck is partly different. Furthermore, they do not discuss Crimmins and Loar at all.

Schroeter’s (2012) Flexibility principle is related to publicity, but her argument for the relational model is different from mine. Schroeter and Schroeter (2014) also develop Schroeter’s relational account.

I am indebted to Clarke (unpublished manuscript) for mentioning Schroeter’s view in discussing the tension between publicity and Frege cases. In general, I was significantly influenced by Clarke’s insightful arguments.

Cumming (2013) discusses cases that have important elements in common with the cases I analyse. He acknowledges the tension between publicity and Frege cases (p. 2) and aims at resolving that tension (p. 14). However, he does not analyse or respond to the arguments by Crimmins, Heck and Loar [he only briefly mentions Crimmins (1992)]. Therefore, he also does not show how his account can respond to those arguments.

Prosser (unpublished manuscript) offers a relational account similar to Schroeter and Dickie and Rattan but does not discuss the Crimmins, Heck and Loar arguments.

<sup>8</sup> Fine (2007) was another source of influence: his relationist account presents both similarities and differences with the relational model. I was also influenced by Perry (1980), Recanati (2012) and Heck (2012)—their views have important elements in common with the relational picture.

<sup>9</sup> See Edwards (2014).

<sup>10</sup> See Textor (2016).

of affairs without taking the thought to be true or false. If she also believes the thought to be true (or false), then she will accept (or reject) the thought in addition to entertaining it.

Let us now introduce publicity and its motivations. Several arguments for publicity have been offered, but my focus will be on arguments based on communication. Publicity is supported by what Heck calls the ‘natural’ conception of communication:<sup>11</sup>

[...] when you grasp the content of my assertion, you thereby grasp the very Thought I believe and am trying to communicate to you. [...] when I communicate, I am trying to bring it about that someone else should come (to have the opportunity) to share a belief with me [...]. (Heck 2002: 6)

Communication pushes us to adopt an interpersonal version of publicity. But we also have powerful reasons to endorse an intrapersonal diachronic version of the principle: a single subject can and often does entertain the same thought at different times. First, communication can also occur between different time slices of the same subject. Secondly, considerations about memory support an intrapersonal diachronic version of publicity: if I form a belief at time  $t_1$ , I can retain it and hold the same belief at time  $t_2$  as long as my memory is functioning properly.<sup>12</sup>

The above considerations give us reason to accept the following principle:

**Publicity:** If different subjects (or different time slices of the same subject) communicate successfully, then they can entertain the same thought. Furthermore, if a subject entertains a thought at time  $t_1$ , she can entertain the same thought at a later time  $t_2$  if her memory is successful on that occasion.

Admittedly, this formulation is not sufficiently precise. For instance, we are not told exactly what thoughts must be shared by the relevant subjects. Unfortunately, defenders of Publicity have not provided a more rigorous version of the principle. I will therefore rely on the above formulation; this will be enough for my purposes, and the discussion to follow will help to clarify what version of Publicity is relevant in this context.

There are two issues on which I will remain neutral. The first issue concerns the *structure* of thought. According to some views, a thought is a structured entity constituted by *concepts*—the thought HUME WROTE THE TREATISE is a complex representation which has the concept HUME among its constituents.<sup>13</sup> According to other views, a thought does not have structure. For instance,

<sup>11</sup> As we will see, Heck rejects this conception, but it is endorsed by several others including Prinz (2002: 14), Schroeter (2012), Cumming (2013) and Dickie and Rattan (2010).

<sup>12</sup> For others who subscribe to a form of diachronic publicity, see Rey (2011), Dickie and Rattan (2010) and Perry (1980).

<sup>13</sup> See Fodor (1998; 2008), Laurence and Margolis (1999) and Prinz (2002).

some authors model the content of thought as a set of possible worlds.<sup>14</sup> My arguments are compatible with these disparate views, and thus need not rely on any contentious premises concerning the structure of thought.

The other issue on which I will remain neutral concerns the *ontology* of thought.<sup>15</sup> According to some views, a thought is a mental representation;<sup>16</sup> for instance, a complex representation constituted by symbols in the Language of Thought<sup>17</sup> or by mental files.<sup>18</sup> Theorists from this tradition appeal to a type–token distinction if they desire to account for Publicity.<sup>19</sup> Two word tokens can be numerically distinct (they have different physical properties) but type-identical (they are tokens of the same word type). Similarly, my thought token can be numerically distinct from your thought token—they might have different physical properties, different inferential connections and so on. Still, you and I can have the same thought in the sense of having numerically distinct thought tokens of the same type. According to other views, a thought is not a mental representation but an abstract proposition.<sup>20</sup> Theorists from this tradition construe Publicity differently: you and I have numerically distinct mental representations, but these representations express numerically identical abstract thoughts, i.e., they express the very same thought.

Other ontological views are certainly possible.<sup>21</sup> To remain neutral on the issue without making the discussion too complex, I will simplify some details. In particular, I will often say, ‘Thought  $t$  has such-and-such inferential connections ...’. If thoughts are abstract, this should be interpreted as ‘The mental representation expressing  $t$  has such-and-such inferential connections ...’. I will also sometimes say, ‘Thoughts  $t_1/t_2$ <sup>22</sup> are the same thought even though they have different inferential connections ...’. Again, if thoughts are abstract this should be interpreted as ‘Thoughts  $t_1/t_2$  are the same thought even though the mental representations expressing them have different inferential connections ...’.

### III. THE FREGEAN CONSTRAINT

As we have seen, Publicity is in tension with another plausible principle that Frege also seemed to endorse.<sup>23</sup> Consider subjects in Frege cases, who are

<sup>14</sup> See, for instance, Stalnaker (1984).

<sup>15</sup> For discussion, see Laurence and Margolis (1999; 2007).

<sup>16</sup> See Laurence and Margolis (2007) and Fodor (1998).

<sup>17</sup> See Fodor (1998).

<sup>18</sup> See Recanati (2012).

<sup>19</sup> See Laurence and Margolis (1999; 2007), Fodor (1998) and Aydede (2000a).

<sup>20</sup> See Frege (1918), Peacocke (1992) and Rey (1994).

<sup>21</sup> See Crimmins (1992: chs. 2–3).

<sup>22</sup> I will often use ‘/’ for ‘and’.

<sup>23</sup> See the ‘Intuitive Criterion of Difference’ that Evans (1982: 18–9) ascribes to Frege.

ignorant or mistaken about certain identity facts.<sup>24</sup> Familiar considerations concerning these subjects' rationality<sup>25</sup> and behaviour<sup>26</sup> have led many to endorse various versions of the following principle:<sup>27</sup>

**The Fregean Constraint (FC):** If a subject can rationally believe of  $x$ , thought of under thought  $t_a$ , that it is  $F$ , and at the same time believe of  $x$ , thought of under thought  $t_b$ , that it is not  $F$ , then  $t_a$  and  $t_b$  are different thoughts

Consider for instance the astronomer who does not know that Hesperus is Phosphorus. She can think of Venus under the thought *HESPERUS IS BRIGHT* or the thought *PHOSPHORUS IS BRIGHT*—that is, she can think of Venus in virtue of entertaining one of these two thoughts. She could rationally believe of Venus that it is bright when thinking of it under the first thought, and at the same time believe of Venus that it is not bright when thinking of it under the second thought. By FC, it would then follow that these are different thoughts.

In Section I, I noted that it is not easy to satisfy both Publicity and FC at the same time. This suggests a disquieting hypothesis: perhaps the two principles are simply inconsistent and Publicity should be rejected. In the following sections, I examine various arguments in favour of rejecting Publicity.<sup>28</sup> These arguments are significantly different and deserve separate treatments. However, they employ the same strategy—each of them claims that Publicity and FC have inconsistent consequences in certain cases and that Publicity should therefore be abandoned. I will argue that these arguments all fail for the same reason: if we assume a relational individuation criterion for thoughts, Publicity and FC are perfectly compatible in the cases under examination.<sup>29</sup>

#### IV. CRIMMINS' ARGUMENT

Crimmins (1992) explicitly denies Publicity: '[...] an adequate account of belief should [...] explain belief in terms of agent-bound, unshareable concrete

<sup>24</sup> See Frege (1892) and Kripke (1979).

<sup>25</sup> See Recanati (2012: 221) and Schiffer (1990: 252).

<sup>26</sup> See Fodor (2008: 64 and 86, 1998: 39) and Prinz (2002: 15–6).

<sup>27</sup> This formulation is based on Recanati (2012: 221) and Schiffer (1990: 252), with modifications to make it compatible with unstructured theories of thought; see Section II.

<sup>28</sup> See Crimmins (1992: 35–53), Heck (2002) and Loar (1988).

<sup>29</sup> I was greatly inspired by Prosser (unpublished manuscript), who argues that there is no special problem concerning interpersonal and diachronic thought identity: the problems that arise for thoughts parallel those that arise in other areas, e.g. in the personal identity literature. My arguments were also substantially influenced by Dickie and Rattan (2010) and Cumming (2013): Dickie and Rattan offer a relational account in their response to Heck, while Cumming briefly mentions Crimmins' argument and holds that his own relational account can resolve the tension between Publicity and FC.

The following sections are also a response to my own argument in Onofri (2016), where I argued that Publicity and FC are inconsistent.

cognitive particulars.’ (Crimmins 1992: 35) Crimmins’ argument starts with a discussion of Perry’s Hume–Heimson case: ‘Hume sincerely utters, “I wrote the *Treatise*.” The madman Heimson sincerely utters the same sentence, “I wrote the *Treatise*.”’ (*ibid.*: 39) Now, Perry thinks that ‘Hume and Heimson believe different *propositions* in virtue of being in the same cognitive belief state.’ (*ibid.*: 40) In response, Crimmins constructs the following variant of the case:

As before, Heimson knows that Hume’s masterpiece is a book called ‘the *Treatise*’, and he takes this to be his own book. But Heimson also has heard of an unpopular book promoting the worst kind of skepticism, called ‘*A Treatise on Human Nature*’, and has heard this book, too, referred to as ‘the *Treatise*’. He does not realize that the “two” books are really identical [...]. (*ibid.*: 45)

Then Crimmins argues:

[...] we have concocted a case in which, for Heimson, there are *two* possible instances of believing that might underlie his saying ‘I wrote the *Treatise*’. And it is easy to imagine the “two-belief” case (Heimson believes that he wrote “both” *Treatises*), in which *both* instances of believing are real. We must suppose that these co-possible instances of believing are classified by different belief states, if belief states are to do the individuating job they are meant for. If so, just which of these belief states is the one that Heimson shares with Hume? In setting up the original case for identifying Hume’s and Heimson’s belief states, it now seems, we were too quick; we specified nothing about Heimson’s belief that could not be true of *two* different instances of Heimson’s believing that he wrote the *Treatise*. We have no basis on which to identify either of Heimson’s belief states with Hume’s belief state, since there is nothing we know that decides between the two. [...] Whatever basis we have to identify Hume and Heimson’s belief states in the original example, we also have to identify Heimson’s two belief states in the modified example (in which Heimson believes himself to have written two *Treatises*). [...] there was nothing we provided in the original example as a basis for identifying Hume’s and Heimson’s states that is not equally a basis in the two-belief example for identifying two of Heimson’s states. (*ibid.*: 46–7)

Note that Crimmins’ case involves two cases of identity confusion—Heimson’s mistake about his own identity and his mistake about there being two books called ‘the *Treatise*’. It is only the second mistake that is relevant for Crimmins’ purposes. I will therefore modify the case and use the proper name ‘Hume’ in formulating Hume and Heimson’s utterances. I hope this helps the reader focus on the only identity mistake that is relevant here, i.e., Heimson’s mistake about the identity of the book.

We can now proceed to analyse Crimmins’ argument, which is not completely clear but seems to go as follows. First Crimmins asks us to suppose:

- (a) Hume asserts ‘Hume wrote the *Treatise*’ and believes the book to be a masterpiece. Let  $b^*$  be the belief expressed by his utterance.
- (b) Heimson asserts ‘Hume wrote the *Treatise*’ and believes the book to be an unpopular sceptical work. Let  $b_1$  be the belief expressed by his utterance.

- (c) (In a different context) Heimson asserts ‘Hume wrote the *Treatise*’ and believes the book to be a masterpiece. Let  $b_2$  be the belief expressed by his utterance.

Then Crimmins argues:

- (1) If  $b_1 = b^*$ ,<sup>30</sup> then there is a basis to identify  $b_1$  and  $b^*$ .
- (2) If there is a basis to identify  $b_1$  and  $b^*$ , then, by the same basis,  $b_1 = b_2$ .
- (3) But  $b_1 \neq b_2$ .
- (4) So  $b_1 \neq b^*$ .
- (5) If Publicity is true, then  $b_1 = b^*$ .

Conclusion: Publicity is false.

Clearly, the argument exploits the Publicity–FC tension, for FC is what motivates premise (3). Why are Heimson’s beliefs distinct? Roughly, because they involve different thoughts—and these thoughts are distinct because Heimson could rationally accept the first and reject the second, due to his misconception.

Does the argument show that Publicity is false?<sup>31</sup> To see why it does not, note first that the case must be described so that Hume and Heimson can communicate successfully.<sup>32</sup> If they cannot communicate, then it does not follow from Publicity that Heimson’s  $b_1 = \text{Hume’s } b^*$ , in which case premise (5) of Crimmins’ argument is false. So let us describe a case in which Hume and Heimson communicate. Suppose Hume says to Heimson, ‘Hume wrote the *Treatise*’. Heimson must now figure out ‘which’ *Treatise* is under discussion. Suppose he reasons, ‘The book in my interlocutor’s hand is the unpopular sceptical work. So that must be the book he is talking about’. As a result, Heimson accepts what his interlocutor said and asserts: ‘Hume wrote the *Treatise*’.

Now, if you think that Hume and Heimson are not communicating successfully in this case, then Publicity does not apply and premise (5) of Crimmins’ argument is false. However, I grant that this is a case of successful communication, so Publicity does require that the belief Heimson expresses ( $b_1$ ) and the belief Hume expresses ( $b^*$ ) are the same. But if we grant that Hume and Heimson are communicating, then premise (2) of Crimmins’ argument is false: there is a basis, that is, an individuation criterion, such that, on that basis,  $b_1 = b^*$  but  $b_1 \neq b_2$ . In other words, it is not true that ‘Whatever basis we have to identify Hume and Heimson’s belief states [...], we also have to identify

<sup>30</sup> I will often use ‘=’/‘≠’ for ‘is the same thought as’/‘is a different thought from’.

<sup>31</sup> Crimmins’ argument shows at most that belief states are not shared. However, Crimmins seems to think that sameness of belief requires sameness of belief state (see *ibid.*: 35), which I am happy to grant. Thanks to an anonymous referee for urging me to clarify this.

<sup>32</sup> I owe this particular point to Clarke (unpublished manuscript); I am also indebted to an anonymous reviewer and to Dickie and Rattan (2010). I was also influenced by Clarke in developing the case described in this paragraph, but I disagree with his diagnosis of this kind of scenario.

Heimson's two belief states [...].' *(ibid.: 47)* To see why, consider the relations between the three beliefs. It is easy to see that  $b_1/b^*$  are related in a way in which  $b_1/b_2$  and  $b_2/b^*$  are not.

At this point, the reader will demand an analysis of the relations between the three beliefs. Before I offer such an analysis, a caveat. You do not have to agree with my analysis to accept my reply to Crimmins. One might agree that  $b_1/b^*$  stand in a certain relation  $R$ , while  $b_1/b_2$  and  $b_2/b^*$  do not, but disagree with my analysis of  $R$ . Premise (2) would still be false, for there would still be a basis to identify  $b_1/b^*$  while distinguishing  $b_1/b_2$ .<sup>33</sup> That said, the natural hypothesis is that  $b_1/b^*$  are *linked*, while  $b_1/b_2$  and  $b_2/b^*$  are not, where linking is defined as follows: two thoughts are linked just in case their thinkers know that the thoughts corefer.<sup>34</sup> In the case just described, Heimson knows that he and his interlocutor refer to the same book. His knowledge is based on certain features of the context—Hume is clearly holding the book in his hand, Heimson knows that his interlocutor has certain standard communicative intentions, etc... Conversely, Hume also knows that he is coreferring with Heimson. So  $b_1/b^*$  are linked. On the contrary,  $b_1/b_2$  are not linked. By hypothesis, Heimson does not believe (and therefore does not know) that his beliefs are about the same book. Similarly,  $b_2/b^*$  are not linked. Imagine Heimson in a different context, asserting 'Hume wrote the *Treatise*' and intending to express  $b_2$ . By hypothesis, he takes this belief to be about the other purported book, not the one that Hume was talking about in the earlier context. So Heimson does not know that the belief he is currently expressing and Hume's belief corefer: the beliefs are unlinked.

My response to Crimmins, then, is that  $b_1/b^*$  are the same because they are linked, while  $b_1/b_2$  and  $b_2/b^*$  are different because unlinked. So there is a basis to identify  $b_1/b^*$  but not  $b_1/b_2$ —premise (2) of Crimmins' argument is false. Notice that these linking patterns hold despite certain facts about the inferential connections of the three beliefs. By hypothesis, Heimson's  $b_2$  shares certain inferential connections with Hume's  $b^*$ . For instance, both beliefs are inferentially connected to HUME WROTE A MASTERPIECE, while  $b_1$  is not. So why hold that  $b_1 = b^*$ , while  $b_2 \neq b^*$ ? My response will not appeal to intuitions about the identity of these thoughts. I will instead note that, by individuating thoughts through linking relations, we can preserve both Publicity and FC. Since these two principles are independently plausible, this gives us strong reason to adopt the linking criterion. On the contrary, a criterion requiring total or even partial overlap in inferential connections would presumably violate

<sup>33</sup> Here I was influenced by Perry (1980: 86).

<sup>34</sup> Here I take Recanati's (2012) intrapersonal notion of linking and extend it to the interpersonal and diachronic levels. The notion is related to, but distinct from, Schroeter's (2012) *connectedness*, Cumming's *coordination* (2013) and Heck's (2002) and Dickie and Rattan's (2010) *rational engagement*. I will contrast my proposal with these alternatives in Section VIII. In appealing to linking I am indebted to all these authors and to Prosser (unpublished manuscript).

Publicity— $b_1/b^*$  have considerably different inferential connections, and in fact their connections might be less similar than those of  $b_2/b^*$ .<sup>35</sup> Indeed, it seems that Crimmins is implicitly assuming such a criterion, making it unsurprising that he sees the tension between Publicity and FC as insurmountable.<sup>36</sup>

## V. HECK'S ARGUMENT

Heck explicitly rejects Publicity:

Suppose someone says, "That bottle is half-empty." Must I think of the bottle in the very same way that she does if I am to understand her? I think not. If I can perceive the bottle - if I can think of it demonstratively - I may well be in a position to know which bottle is in question: I may know that she is demonstrating that bottle and so know that her utterance is true if, and only if, that bottle is half-empty. If so, I will understand her utterance: I will know its truth-condition. But my perspective on the bottle may be sufficiently different from hers that my Thought is, by the usual Fregean criterion, different from the one the speaker was expressing. Someone could believe that that bottle is half-empty when she thinks about it in a demonstrative way appropriate to perceiving it from one side, while denying that it is half-empty (or being agnostic about the matter) when she thinks of it in a demonstrative way appropriate to perceiving it from the other side: she might well fail to realize that the same bottle is in question both times. (Heck 2002: 21; quoted by Dickie and Rattan 2010: 136)

Again, it is not entirely clear how the argument goes, but Heck seems to be arguing as follows. Consider two subjects, Al and Rose, who are jointly attending to a bottle:<sup>37</sup>

- (a) Rose utters 'That bottle is half-empty' while looking at the bottle from perspective  $p^*$ . Let  $t^*$  be the thought expressed by her utterance.
- (b) Al assents to Rose's utterance while looking at the bottle from a different perspective  $p_1$ . Let  $t_1$  be the thought he entertains as a consequence of Rose's utterance.
- (c) Al utters 'That bottle is not half-empty' while looking at the bottle from perspective  $p^*$  (the perspective Rose was occupying).<sup>38</sup> Let  $t_2$  be the thought expressed by his utterance.

Then Heck would argue:

<sup>35</sup> Inferential role theories are defended by various authors—see for instance Block (1993), Schneider (2011) and Peacocke (1992). Here, I cannot discuss whether these accounts are compatible with mine.

<sup>36</sup> Crimmins also provides a further argument against Publicity (*ibid.*: 47–53), but this argument presupposes the one I discussed in the text.

<sup>37</sup> This is one of the ways in which Dickie and Rattan (2010: 138) construe Heck's case. I will stick to this construal, since it seems to be what Heck has in mind.

<sup>38</sup> It does not matter whether Al moves to  $p^*$  after hearing Rose, or simply has the disposition to say 'That bottle is not half-empty' if he moved to  $p^*$ ; I will leave this unspecified.

- (1) Al believes that the bottle is half-empty when looking at it from  $p_1$ , while believing that it is not half-empty when looking at it from  $p^*$ .
- (2) So  $t_1 \neq t_2$ .
- (3)  $t_2$  and  $t^*$  are formed from the same perspective.
- (4) So  $t_2 = t^*$ .
- (5) So  $t_1 \neq t^*$  (by the transitivity of identity).
- (6) If Publicity is true, then  $t_1 = t^*$ .

Conclusion: Publicity is false.

Like Crimmins, Heck exploits the Publicity–FC tension, since he explicitly appeals to FC in defending premise (2). The two arguments also fail for parallel reasons. I will argue that  $t_1/t^*$  are related in a way in which  $t_1/t_2$  and  $t_2/t^*$  are not. Therefore, an individuation criterion based on the relation in question will count  $t_2/t^*$  as distinct. So premise (4) of Heck’s argument is false.

I will now put forward a hypothesis about the nature of the relevant relation, but before I do that it is important to keep in mind that other analyses are possible; again, one can agree with my response to Heck while disagreeing with the specific account I propose. That said, it is natural to hypothesise that  $t_1/t^*$  are linked, while  $t_1/t_2$  and  $t_2/t^*$  are not.<sup>39</sup> As Dickie and Rattan (2010) would say, Al and Rose are jointly attending to the bottle, so they know that they refer to the same object. Therefore, their thoughts  $t_1/t^*$  are linked. On the contrary, Al does not know that the thoughts he formed at  $p_1$  and  $p^*$  (i.e.,  $t_1/t_2$ ) corefer: he thinks they are about different objects. So these thoughts are unlinked. For the same reason,  $t_2/t^*$  are also unlinked. When Al occupies  $p^*$ , he reasons, ‘My current thought  $t_2$  and my previous thought  $t_1$  are about different objects. But  $t_1$  coreferred with Rose’s thought  $t^*$ . So  $t_2/t^*$  do not corefer.’

Given these relations, then, an individuation criterion based on linking predicts that  $t_1/t^*$  are the same because linked (this satisfies Publicity), while  $t_1/t_2$  and  $t_2/t^*$  are different because unlinked (this satisfies FC). So, assuming the linking criterion, premise (4) of Heck’s argument is false and Publicity is compatible with FC. As with Crimmins, it is easy to see why Heck’s argument fails. Heck seems to implicitly assume that thoughts are individuated by the associated visual perspectives, and on this individuation criterion Publicity and FC are indeed incompatible; not so on a linking criterion. But why prefer the latter option? Again, the linking criterion should be preferred not because of intuitions about thought identity, but because it allows us to preserve both Publicity and FC, while Heck’s account does not.<sup>40</sup>

<sup>39</sup> See Section IV for a definition of linking.

<sup>40</sup> Heck (2002: 20–1) also provides a partly similar argument against the publicity of first-person thoughts. My response would be similar to the one just given, but I cannot develop it here for reasons of space.

In footnote 57, Heck (2002) briefly mentions the possible view that, when speaker and hearer know that they corefer, they ‘really are thinking of the object in the same way, so that the identity

## VI. LOAR'S ARGUMENT

Loar (1988) attributes to Burge<sup>41</sup> the thesis that 'sameness of conceptual role is not *necessary* for sameness of psychological content.' (Loar 1988: 181) According to Loar, Burge's argument for this claim goes as follows:

Suppose that a person who is otherwise a normal English speaker believes that he has arthritis in his thigh, and that he also has many true beliefs about arthritis, for example, that he has it in his wrists and ankles. When a doctor tells him that arthritis cannot occur in the thigh [...] he is surprised but takes the doctor's word for it. Now consider that earlier belief which he would have expressed as "I have arthritis in my ankles." On the conceptual role theory, that belief should count as distinct from the doctor's belief that his patient has arthritis in his ankles. For the two have, or had, crucially different ideas about what "arthritis" means, and consequently the two beliefs have [...] crucially different conceptual links to other beliefs. But, as Burge argues, common sense ascribes the same belief to both: the belief that the patient has arthritis in his ankles. (*ibid.*: 181)

Loar then imagines the following case:

Suppose that when Paul leaves home he lives in France for a while, learns about a rheumatoid ailment called "arthritis", and comes to believe that he has it both in his thigh and in his ankles. He would be surprised to learn that you can't have "arthritis" in your thigh. As it happens Paul has a perfectly good understanding of the English "arthritis", which he does not realize is renderable in French as "arthrite" (perhaps he never sees them written down). He is unfortunately given to hypochondria, and comes to believe he has two problems with his ankles, in his words "arthrite" and "arthritis." (*ibid.*: 185)

Loar then notes that Paul seems to have two distinct beliefs: the belief he would express with the French 'Paul a de l'arthrite dans les chevilles' and the belief he would express with the English 'Paul has arthritis in his ankles'.

Clearly, this case can also be used to argue against Publicity.<sup>42</sup> Suppose Paul says to a bilingual doctor, 'Paul a de l'arthrite dans les chevilles' and the doctor confirms, 'Paul a de l'arthrite dans les chevilles'. Now consider the following thoughts:

conditions of modes of presentation are themselves sensitive to context.' He then adds: 'Some of my own remarks in [Heck (1995)] could be taken similarly. But I no longer find this view attractive, substantively speaking, for reasons I shall not discuss now.' Here, Heck might have something similar to my view in mind. On the other hand, it is not part of my theory that the identity conditions of modes of presentation are sensitive to context (see Section VIII).

<sup>41</sup> See especially Burge (1979).

<sup>42</sup> Loar does not argue directly against Publicity, but it is clear that he would reject it. For instance, he says, 'But commonsense psychological explanation [...] individuates attitudes according to their conceptual roles [...]' (*ibid.*: 188). Given what Loar means by 'conceptual role', this way of individuating attitudes is incompatible with Publicity. As we have seen, two subjects can communicate even though their mental representations have significantly different inferential connections.

- (a) The thought Paul expresses by ‘Paul a de l’arthrite dans les chevilles’. Call this thought  $t_1$ .
- (b) The thought Paul expresses by ‘Paul has arthritis in his ankles’. Call this thought  $t_2$ .
- (c) The thought the doctor expresses by ‘Paul a de l’arthrite dans les chevilles’ or by ‘Paul has arthritis in his ankles’. Call this thought  $t^*$ .

Now, the respective inferential connections of  $t_2/t^*$  seem much more similar than the inferential connections of  $t_1/t^*$ . By hypothesis,  $t_2$  is inferentially connected to a correct conception of arthritis, and this is also the doctor’s conception; on the contrary,  $t_1$  is inferentially connected to an incorrect conception. The argument could then proceed as follows:

- (1)  $t_1 \neq t_2$ .
- (2) So only one of  $t_1/t_2 = t^*$  (by the transitivity of identity).
- (3) The inferential connections of  $t_2/t^*$  are much more similar than the inferential connections of  $t_1/t^*$ .
- (4) So  $t_2 = t^*$ , while  $t_1 \neq t^*$ .
- (5) If Publicity is true, then  $t_1 = t^*$ .

Conclusion: Publicity is false.

The problem is thus the following. By FC, we can only choose one candidate for identity with  $t^*$ . Because of its inferential role,  $t_2$  is the better candidate. Therefore,  $t_1 \neq t^*$ . But  $t_1/t^*$  are the thoughts involved in the communicative exchange between Paul and the doctor, so Publicity requires their identity. Therefore, Publicity is false.

This argument also exploits the Publicity–FC tension. My response will be brief, since it will parallel the one given against Crimmins and Heck. The argument overlooks the relations between the three thoughts:  $t_1/t^*$  are linked, while  $t_2/t^*$  and  $t_2/t_1$  are not. Therefore,  $t_1$  is the same as  $t^*$ , while  $t_2$  is different from both  $t_1/t^*$ . So premise (4) of the above argument is false.

Let us see why  $t_1/t^*$  are linked, while the members of the other two pairs are not. By hypothesis, Paul and the doctor intend to refer to the same disease in their exchange. Paul defers to the doctor on what counts as arthritis. Therefore, he knows that the referent of his own ‘arthrite’ is the referent of the doctor’s ‘arthrite’, whatever properties the disease in question may have. In turn, the doctor knows that Paul is deferring to him, and this deference mechanism guarantees that his own ‘arthrite’ corefers with Paul’s.

These connections are absent in the other two pairs. By hypothesis, Paul takes his own ‘arthrite’ and ‘arthritis’ to be non-coreferential. Therefore, his utterances containing these terms express unlinked thoughts. For the same reason, linking is also absent between  $t_2/t^*$ . Paul takes his own utterance ‘Paul has arthritis in his ankles’ and the doctor’s ‘Paul a de l’arthrite dans les chevilles’

to be about different ailments, i.e., the ‘two different ailments’ he allegedly has in his ankles.

Since  $t_1/t^*$  are linked and the members of the other pairs are not,  $t_1 = t^*$ , while  $t_2 \neq t_1/t^*$ . Note that, as in the previous cases, linking overrides factors like inferential similarity. The conceptions of arthritis associated with  $t_2/t^*$  are indeed in some respects more similar than those associated with  $t_1/t^*$ . By hypothesis,  $t_2/t^*$  are associated with the correct conception, while  $t_1$  is not. However, individuating thoughts by their inferential connections would violate Publicity, while individuating them by their linking relations allows us to preserve both Publicity and FC. Other things being equal, this is a great advantage for the linking account.

## VII. BELIEF RETENTION

It would be easy to apply the arguments by Crimmins, Heck and Loar to the intrapersonal diachronic level. The target would now be the second clause of the Publicity principle, the idea that, if a subject entertains a thought at a certain time, she can entertain the same thought at a later time if her memory is successful on that occasion. Here is how the attack against Publicity would go if we used Crimmins’ argument as a template (parallel considerations apply to Heck and Loar’s arguments).

Suppose I assert ‘Hume wrote the *Treatise*’ at time  $t^*$  and at a later time  $t$ , and consider the beliefs  $b^*$  and  $b_1$  that my utterances respectively express. Are they the same belief? Assume there is some individuation criterion on which they are; in Crimmins’ terminology, assume there is a ‘basis’ to identify the two beliefs. Now, at  $t$  I might be in a Frege case: I believe there are two books called ‘the *Treatise*’ and I take Hume to have written both of them. I will then have a belief  $b_2$  distinct from  $b_1$  that I would also express by ‘Hume wrote the *Treatise*’. But we specified nothing about  $b_1$  that could not be true of both  $b_1/b_2$ . Therefore, our individuation criterion will entail that  $b_1 = b_2$ . Whatever basis we have for identifying  $b^*/b_1$ , we must also identify  $b_1/b_2$  on the same basis. And since  $b_1/b_2$  are distinct, it follows that there is no basis (i.e., no correct individuation criterion) to identify  $b^*/b_1$ . But Publicity requires the identity of  $b^*/b_1$ . So Publicity is false.

This argument and Crimmins’ original argument fail for parallel reasons. First, note that we must describe the case so that  $b_1$  is based on my memory of the previously acquired information. If there is no memory link between  $b^*/b_1$ , then it simply does not follow from Publicity that the two beliefs are the same. Here is one possible way to describe the case more fully.<sup>43</sup> At  $t^*$  I see Hume signing copies of the *Treatise* and form belief  $b^*$ . At the later time  $t$ , I remember this information and assert ‘Hume wrote the *Treatise*’. I thereby

<sup>43</sup> Here I am indebted to Recanati’s (2015) illuminating analysis of a similar case.

express  $b_1$ ; since this belief is based on memory, by Publicity it must be the same as  $b^*$ . At the same time  $t$  someone tells me, ‘Hume wrote another book, also called the *Treatise*’. I believe her and form belief  $b_2$ , which I would also express with utterances of ‘Hume wrote the *Treatise*’.

We can now see where the argument goes wrong— $b^*/b_1$  are related in a way in which  $b_1/b_2$  and  $b_2/b^*$  are not. If required to spell out this relation, it would be natural to do so by appealing to linking, although, again, alternative analyses are compatible with my strategy. Start with the two beliefs I hold at the later time  $t$ , the one based on memory ( $b_1$ ) and the one based on testimony ( $b_2$ ). These beliefs are unlinked, since I do not take them to be about the same book.  $b_2$  is also unlinked with my previous belief  $b^*$ . By hypothesis, I think my interlocutor is not talking about the book Hume was signing, so I take the belief based on testimony to be about a different object. On the contrary,  $b_1/b^*$  are linked: when I remember the information that Hume wrote the *Treatise*, I know I am thinking about the same book again, the book Hume was signing.

Given these linking relations, then, it is not true that ‘we specified nothing about  $b_1$  that could not be true of both  $b_1$  and  $b_2$ ’— $b_1$  is linked with  $b^*$ , while  $b_2$  is not. So the intrapersonal version of Crimmins’ argument fails. According to the linking criterion,  $b_1 = b^*$ , satisfying Publicity, while  $b_2 \neq b_1/b^*$ , satisfying FC. Once again, Publicity and FC are perfectly compatible if we adopt the linking criterion.

### VIII. INDIVIDUATING THOUGHTS

My response to Crimmins, Heck and Loar is based on the following individuation criterion: two thoughts are the same just in case they are linked—that is, just in case their thinkers know that the thoughts corefer. As I noted, one motivation for the criterion is that it satisfies both Publicity and FC in the above cases. But the criterion enjoys independent support. Consider a famous case by Loar:

Suppose that Smith and Jones are unaware that the man being interviewed on television is someone they see on the train every morning and about whom, in that latter role, they have just been talking. Smith says ‘He is a stockbroker’, intending to refer to the man on television; Jones takes Smith to be referring to the man on the train. Now Jones, as it happens, has correctly identified Smith’s referent, since the man on television is the man on the train; but he has failed to understand Smith’s utterance. (Loar 1976: 357)

Smith and Jones clearly do not communicate successfully. Why is that? The natural hypothesis is that the two subjects truly believe, but do not know that their respective utterances corefer.<sup>44</sup> Perhaps they are not justified in thinking

<sup>44</sup> Heck (1995) defends the same hypothesis about an analogous case involving proper names (*ibid.*: 95) and argues that communication requires knowledge of coreference—that is, more than mere true belief in coreference (*ibid.*: Sections V–VIII). However, as we have seen, Heck (2002)

that they corefer; perhaps they are justified but lucky, thus finding themselves in a Gettier-type case. Whatever the correct diagnosis, they clearly do not know that they are referring to the same person. So imposing a knowledge requirement on thought identity correctly predicts and explains why Smith and Jones fail to communicate: communication requires thought identity, and thought identity requires knowledge of, not mere true belief in, coreference.<sup>45</sup> As Dickie and Rattan (2010) note, various mechanisms can sustain knowledge of coreference—in the above cases, our subjects know that they corefer in virtue of joint attention (Sections IV and V), deference (Section VI) or memory (Section VII).

I will now provide a first-pass formulation of the linking criterion. Let a thought ascribe property  $F$  to object  $a$  just in case the truth of the thought depends on whether  $a$  instantiates  $F$ .<sup>46</sup> And let us (for now) define the linking relation as that relation  $L$  such that two thoughts  $t_a/t_b$  stand in  $L$  iff the thinker(s) of  $t_a$  and the thinker(s) of  $t_b$  know that  $t_a/t_b$  ascribe the same property to the same object. Then:

**(IC, first-pass):** A thought  $t_a$  is the same thought as a thought  $t_b$  iff  $t_a/t_b$  stand in  $L$

This criterion has two important features: it is relational and two-level. The criterion is relational since thought identity is defined in terms of the linking relation holding between thoughts. Moving to the second important feature, Noonan and Curtis (2017) describe two-level criteria as follows: ‘The objects for which the criterion is given are distinct from, and can be pictured as at a higher level than, the objects between which the relation specified holds’. According to IC, two thoughts are linked because their thinkers stand in a certain *mutual knowledge* relation, the relation in which certain subjects stand just in case they know that their respective thoughts ascribe the same property to the same object. So IC is two-level—the identity conditions for thoughts are defined in terms of linking, which is in turn defined in terms of the mutual knowledge relation holding between thinkers.

denies that communication requires thought identity. Therefore, Heck would presumably also reject my appeal to thought identity in accounting for Loar’s case (see below).

<sup>45</sup> In a passage quoted by Heck (2002: 22), Frege holds that knowledge of coreference is required for thought identity, and therefore for communication. Discussing a case in which two subjects associate different senses with a name, Frege writes: ‘Then as far as the proper name “Dr. Gustav Lauben” is concerned, Herbert Garner and Leo Peter do not speak the same language, since, although they do in fact refer to the same man with this name, they do not know that they do so. Therefore Herbert Garner does not associate the same thought with the sentence “Dr. Gustav Lauben has been wounded” as Leo Peter wants to express with it’ (Frege 1918: 297).

<sup>46</sup> To remain neutral between structured and unstructured accounts of thought (see Section II), I prefer not to use the notion of the *Russellian proposition* expressed by a thought. Also, note that I will focus on simple predicative thoughts, i.e., thoughts that would be expressed by utterances of the form ‘ $a$  is  $F$ ’.

Two-level criteria are not unusual. To give just one example, Frege (1884) famously discusses the following identity criterion for directions<sup>47</sup>:

The direction of line  $a$  = the direction of line  $b$  iff  $a$  is parallel to  $b$

Here, the identity conditions for directions are defined in terms of the parallelism relation between lines. Similarly, our criterion defines identity conditions for thoughts in terms of the mutual knowledge relation between thinkers.

IC does not require ordinary thinkers to be theoretically sophisticated.<sup>48</sup> Under appropriate conditions a normal subject will say things like, ‘The speaker is thinking about the same thing as me’. So, even though the subject might not use the notion of coreference, she does believe that the speaker’s thought corefers with hers. As theorists, we can describe a cognitive state in terms that are not available to the owner of that state.

In imposing epistemic conditions on thought identity I follow other relational theorists like Schroeter (2012), Schroeter and Schroeter (2014) and Dickie and Rattan (2010);<sup>49</sup> furthermore, my account has elements in common with Cumming’s (2013) non-epistemic relational criterion. The main difference between these relational proposals and mine is that their conditions on thought identity are too demanding, as I will now briefly argue.

According to Schroeter, two utterances express the same meaning just in case they appear to the speakers to be *de jure* coreferential—that is, just in case it is obvious, incontrovertible and epistemically primitive that they corefer (Schroeter 2012: sect. 1). This criterion might be adequate in the case of a single subject interpreting her own speech or thought: in this case, the epistemic conditions for *de jure* sameness are often satisfied. However, those conditions are too strong when applied to communication. It is rarely obvious, incontrovertible and epistemically primitive that my utterance corefers with yours. As Schroeter herself notes (*ibid.*: sect. 2), the appearance of *de jure* sameness can be mistaken. A sufficient amount of contrary evidence can show that, despite initial appearances, you and I were really talking past each other. So the incontrovertibility criterion is too strong. Furthermore, a judgement of coreference is often based on complex background information about the context (speaker/hearer intentions, beliefs and so on). Thus, that judgement is often neither obvious nor epistemically primitive either. In sum, Schroeter’s conditions are so strong that they make it very difficult for ordinary speakers to express the same meaning.

Dickie and Rattan (2010) hold (simplifying considerably) that my utterance ‘ $a$  is  $F$ ’ and your utterance ‘ $b$  is  $G$ ’ express the same thought just in case we can both infer ‘Something is  $F$  and  $G$ ’ immediately, i.e., without adding the

<sup>47</sup> See Zalta (2017), Noonan and Curtis (2017) and Linnebo (2009).

<sup>48</sup> Here I disagree with Cumming (2013).

<sup>49</sup> My criterion also follows Prosser (unpublished manuscript).

identity premise ‘*a* is *b*’ to our respective inferences. Clearly, this criterion can only be accepted if there are rational inferences that do not require an explicit identity premise, which is not uncontroversial.<sup>50</sup> For instance, it might be that all rational inferences of this form require the following implicit metalinguistic premise: ‘The referent of “*a*” = the referent of “*b*”’. My criterion is not committed to Dickie and Rattan’s controversial assumption concerning the possibility of immediate inferences in communication.

Cumming (2013) holds that two mental symbols have the same content just in case they are coordinated (*ibid.*: 13), where

The conventions in context *C* *de facto* coordinate a pair *x, y* iff, [...]

- (a) There is a strategic path between *x* and *y*,
- (b) *x* is the only symbol in agent(*x*)’s lexicon connected by strategic path to *y*, and
- (c) *y* is the only symbol in agent(*y*)’s lexicon connected by strategic path to *x*. (Cumming 2013: 9–10)

There is a strategic path between two symbols just in case (simplifying considerably) their thinkers have adopted a convention of using those symbols for the same object.

In some cases coordination is ruled out, so the two symbols do not have the same content and communication is unsuccessful:

[...] suppose Peter has two symbols, *P*<sub>1</sub> and *P*<sub>2</sub>, referring to Paderewski, where Speaker has one. This would be true, for instance, were Speaker unaware that Peter thought there were two Paderewskis. [...] In this case, Speaker simply doesn’t have the required number of symbols to line up one-to-one with each of Peter’s [...] (*ibid.*: p. 11 and fn. 37)

Cumming’s conditions on successful communication are too strict. Consider any name with multiple bearers, e.g. ‘John Smith’. Suppose I do not know how many John Smiths you think there are. According to Cumming, my symbols will then be uncoordinated with yours and my attempt to communicate with you will fail. Since this situation is extremely common, Cumming predicts the failure of most exchanges involving names with multiple bearers. This is not a problem for my account, which does not require the speaker to have the same number of symbols as the hearer: on my view, even if I do not know your views about the number of John Smiths, we entertain the same thought if context allows us to know which John Smith is under discussion. Indeed, we saw this disambiguation mechanism at play in the cases from Sections IV and V.

Despite its advantages over rival accounts, IC is inadequate as it stands. If thought identity is to be analysed in terms of the linking relation *L*, then the latter must be an equivalence relation. Since by definition *L* requires mutual knowledge in the relevant thinkers, the relation is indeed symmetric. However, reflexivity poses a problem. Suppose Lois and Clark are communicating, so

<sup>50</sup> For discussion, see Campbell (1987), Sainsbury (2002) and Recanati (2012).

that by Publicity they entertain the same thought. Still, Lois might not accept ‘The thought Superman is expressing corefers with mine’, even though her interlocutor is Superman. So Lois’ thought = Superman’s thought, but Lois does not know that Superman’s thought corefers with hers. So the thought seems unlinked to itself.

This problem arises because our epistemic criterion IC embeds a propositional-attitude-ascription in its right-hand side. A full solution would require at least sketching a theory of ascriptions, something beyond the scope of this paper. Here, it will suffice to qualify our definition of *L*: two thoughts  $t_a/t_b$  stand in *L* iff the thinker(s) of  $t_a$  and the thinker(s) of  $t_b$  know *in the way required by the conversation* that  $t_a/t_b$  ascribe the same property to the same object. Clearly, the conversation does require Lois to accept ‘The thought *my interlocutor* expresses corefers with mine’, but not ‘The thought *Superman* expresses corefers with mine’. So the thought expressed in the exchange does bear the (qualified) relation *L* to itself. A similar strategy should be applied to intrapersonal cases of the same kind, but I must leave this discussion to another occasion.

Another problem with *L* is that it is not transitive. Consider A, B and C: B knows that Superman = Clark and that Superman = Kal-El, A only knows that Superman = Clark, C only knows that Superman = Kal-El.<sup>51</sup> Suppose that A tells B ‘Superman is Clark’ and their respective thoughts are linked, and suppose that C tells B ‘Superman is Kal-El’ and their respective thoughts are linked. Clearly, it does not follow that A and C’s thoughts are linked—neither A nor C knows that the other subject’s thought corefers with her own thought. So *L* is not transitive.

In response I will develop a suggestion by Schroeter (2012), combining it with a classic move made by ‘psychological continuity’ theories of personal identity<sup>52</sup>—I will analyse thought identity through a chain of overlapping linking relations.<sup>53</sup> Consider the *ancestral* of *L*, the *indirect linking relation*  $L^*$ : two thoughts  $t_a/t_b$  stand in  $L^*$  iff there is an ordered set  $\langle t_a, \dots, t_n, t_b \rangle$  such that each member stands in *L* to its successor. We can then hold that  $t_a = t_b$  iff they stand in  $L^*$ . Less formally, two thoughts are the same not only when directly linked, but also when indirectly linked by a chain of direct linking relations. Since  $L^*$  is transitive, this solves the above problem—A and C’s thoughts are the same because they stand in the indirect linking relation  $L^*$ . More generally, this solution has the desirable result [pointed out by Schroeter (2012)] that thoughts are widely shared by chains of communicating agents within and across linguistic communities, as well as chains of time slices connected by memory relations.

<sup>51</sup> Thanks to Michael Wallner for suggesting an analogous case. See also Prosser (unpublished manuscript) for a similar case.

<sup>52</sup> See Perry (1975) and Olson (2017). For a different solution see Dickie and Rattan (2010: 149–50).

<sup>53</sup> The move is also inspired by Kripke’s (1972/1980) causal-historical account of reference.

Assuming the modifications above, then, the following is a more adequate version of IC:

(IC): A thought  $t_a$  is the same thought as a thought  $t_b$  iff  $t_a/t_b$  stand in  $L^*$

Several issues remain open. For instance, (IC) is committed to Strawson's (1974) 'merging' model, on which someone who knows the relevant identity will express the same thought with 'Hesperus is bright' and 'Phosphorus is bright'. Since many have rejected that model,<sup>54</sup> this issue appears particularly urgent. A more complete theory will also accomplish the following: give different conditions for diachronic and synchronic identity; clarify the role of thought identity in accounting for behaviour and agreement/disagreement; explain how epistemic criteria can be non-circular even though they involve intentional notions on both sides of the biconditional; and address issues like the transparency of thought, reference determination and empty names. This non-exhaustive list should make clear that this project cannot be pursued in a single paper. My goal was more modest—I hope to have shown that a relational approach has the potential to satisfy both Publicity and FC, and that the linking account constitutes a promising version of such an approach.<sup>55</sup>

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<sup>54</sup> See Millikan (1997, 2000), Schroeter (2012) and Recanati (2012).

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