Intentional Identity Revisited

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【ABSTRACT】 The phenomenon of intentional identity has bemused philosophical communities since Geach (1967). I argue that the phenomenon is ubiquitous and much more significant than previously acknowledged. The foundations of the problem are implicated in many other well-known puzzles, such as Kripke's (1979) puzzles about beliefs. Thus, the need for a proper analysis is eminently pressing. I specify a template for generalizing intentional identity, identify the challenges involved, and argue that positing a level of representational entity in both philosophy of mind and language (e.g., mental files) is a promising approach to tackling the problem across the board.

Ⅰ. Preliminaries

Puzzles concerning reference and attitudes have long bemused and amused philosophical communities. We forge connections between thoughts and the world through language, especially via uses of noun phrases. Our mental life, like our empirical existence, is not constant but

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ever-changing. We can hold various attitudes towards one object and describe it in different ways; we might even hold contrasting or conflicting attitudes towards the same thing and associate it with apparently contradictory descriptions. Further complications arise when we entertain, consciously or not, thoughts about objects that do not exist. Moreover, we seek not only expressions of our own mental life, but explanations of other people's actions. Our talk is not limited to our own thoughts, beliefs, and emotions; those of others too figure prominently. As a result, an adequate analysis of the truth and meaning of the relevant linguistic phenomena must take into account the diverse range of things we can think and talk about, as well as the plethora of ways of so doing.

The array of linguistic phenomena that I want to concentrate on concerns intentional identity, a problem first made famous by Geach (1967). The phenomenon, I shall argue, is much more widespread and the problem considerably more significant than previously perceived. As Edelberg (2006) points out, the problem has both *intersubjective* and *intra-subjective* versions; I will add to that what underlies the problem is responsible for many more well-known puzzles. I will specify a template for the generalized intentional identity, identify the challenges involved, and argue that positing a level of representational entity in both philosophy of mind and language is a promising way to tackle the problem across the board.

The rest of the paper is organized as follows. Section 2 reviews Geach's original set-up and the limits of traditional responses. I then specify in Section 3 the root of the problem and a template for generalizing intentional identity, a template that connects several well-known, seemingly dissociated puzzles in the literature. After that, I sketch in Section 4 a solution based on Newen's (2011) model of object file, and conclude in Section 5 with the ramifications this new proposal leads to

with respect to the notion of content and linguistic communication.

Ⅱ. Geach's intentional identity

The problem of intentional identity is standardly tied to Geach's original example (G):

> (G) Hob thinks that a witch blighted Bob's mare, and Nob wonders
>   whether she (the same witch) killed Cob's sow.[1]

One is invited to consider (G) according to the following scenario:

> Hob and Nob are residents of a town where witch superstitions are
> rampant. Hob and Nob live on opposite sides of the town so they have
> never encountered or heard of each other. They each read the local
> newspaper's story that "A witch has been terrorizing the town." Hob and
> Nob independently came to the conclusion that this is the cause of his
> friends' livestock problems, but neither Hob nor Nob has any particular
> witch in mind. As a matter of fact, there are no witches.

The problem is this: it appears that (G) and can be true even if there
are no witches, even if neither Hob nor Nob has any particular witch in
mind, and even if Hob and Nob do not know each other at all—that Hob
is unaware of Nob and Cob, and Nob is unaware of Hob and Bob.

Typically, however, the problem is recognized as a puzzle about the
logical form—given the truth of (G), what is the underlying logical
form? Apparently, "a witch" and "she" are about the same individual;

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1) For simplicity's sake, the example discussed in the literature is mostly a close
   variant of (G), (G*): Hob thinks that a witch blighted Bob's mare, and Nob thinks
   that she killed Cob's sow. My discussion follows this tradition.

"she" is anaphoric to "a witch" and the former refers to whoever the latter refers to. In order to capture the anaphoric relation, we must analyze the pronoun as a variable, bound by the *existential quantifier* introduced by the noun phrase "a witch." Given classical logic and the resources it affords, the logical form is either (1) or (2):

   (1) ∃x[Hob believes (x is a witch & x blighted Bob's mare) & Nob
        believes (x killed Cob's sow)]
   (2) Hob believes ∃x[x is a witch & x blighted Bob's mare & Nob
        believes (x killed Cob's sow)]

   (1) is true only if Hob and Nob have a particular real person in mind; this *wide scope* treatment of the existential quantifier entails a specificity not found in the original story. Moreover, it entails an unwelcome ontological commitment. By contrast, (2) is true only if Hob has the relevant thoughts about Nob and what Nob believes, again contrary to the assumption. The literature is abundant in further attempts to regiment "she" into some definite description and then make recourse to Russell's theory of descriptions to generate the logical form. But, as illustrated in (3) and (4), this approach does not work:[2]

   (3) Hob believes ∃x[x is a witch & x blighted Bob's mare & Nob
        believes the witch blighted Bob's mare killed Cob's sow].

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2) Here is the corresponding logical form of (3): Hob believes ∃x[(x is a witch & x blighted Bob's mare) & Nob believes ∃x[Hobs believes (x is a witch & x blighted Bob's mare) & ∀y((y is a witch & y blighted Bob's mare) → y=x) & x killed Cob's sow]. The logical form of (4) is this: Hob believes ∃x[(x is a witch & x blighted Bob's mare) & Nob believes ∃x[Hobs believes (x is a witch & x blighted Bob's mare) & ∀y(Hobs believes (y is a witch & y blighted Bob's mare) → y=x) & x killed Cob's sow]

(4) Hob believes $\exists$ x[x is a witch & x blighted Bob's mare & Nob believes <u>the witch that Hob thinks blighted Bob's mare</u> killed Cob's sow].

Recall that the original Geach sentence can be true even if Nob has no idea of Hob or Bob, so the kind of belief attribution made in (3) and (4) is problematic. Other descriptive paraphrases are certainly available, though they would all eventually suffer from similar pitfalls. Note that the problem here is precisely the mirror image of what we see in (2): we cannot write into Hob's belief state any information regarding Nob, just like we cannot include in Nob's mental life anything about Hob.

Seen in this light, the problem of intentional identity is a logical conundrum. Response to the deficiency of the traditional semantic machinery varies. Some argue that Geachian sentences motivate a semantics that quantify over intentions, specifically intentions that can be shared between thoughts of different agents (e.g. Cohen 1968, Geach 1981, Edelberg 1992, Asher 1987); some resort to exotic objects, such as mythical objects, abstract objects, merely possible objects, or non-existents objects—to explain the truth of (G) (e.g. Parsons 1974, Saarinen 1982, Salmon 1998, 2002, Priest 2005); some contend that the apparent true reading of (G) is just an illusion; there is in fact no Geachian reading (Braun 2012), and finally some claim that the difficulty of providing the semantics of (G) is due to the problematic assumption that natural language quantifiers are ontologically committing (Azzouni 2012; cf. Crane: 2013).

Some hold a dismissive attitude and respond to the problem at hand with indifference. They think that while phenomenon does raise a logical curiosity, the problem itself has little philosophical significance. For example, Richard (1990) argues that our time and energy are better spent on more substantial problems, things other than unicorns and witches:

(5) Hob thinks the unicorn ate the petunias, but Nob thinks it probably
    didn't. (Richard 1990)

However, I do not believe we can afford to be so apathetic. After all, cases of intentional identity are not confined to mythical beings. For instance, a proper characterization of the truth conditions of (6) is critical to explain, say, Hob and Nob's contrasting treatment of the donkey in question.

(6) Hob thinks the donkey ate the petunias, but Nob thinks it probably
    didn't.

On the other hand, scientific progress and breakthroughs oftentimes involve thinking and talking about the non-existent:

(7) Le Verrier thinks that Vulcan exists between Mercury and the Sun,
    and many others think they have seen it.

III. Generalizing Intentional Identity

There is no way that we can shun away from intentional identity, especially when we realize how general and widespread the real problem of intentional identity is. Stripped to its bare bones, the underlying syntactic structure of (G) is this:

(S) S_1 V_1 O_1 Predicate$_1$; S_2 V_2 O_2 Predicate$_2$

The four main elements are: (i) the noun phrases that play the subject roles whose mental states are being reported, (ii) attitude verbs, (iii) noun phrases that play the object roles, and (iv) the predicates associated with

the objects. Since our concern is identity, it is assumed that the value of the two object noun phrases, O_1 and O_2, co-vary. The structure thus licenses a total of eight variations (which allows for further fine-grained distinctions), depending on the relations between the subjects, the attitude verbs, and the predicates. For example, if identity holds true for all the components, i.e. $S_1=S_2$, $V_1=V_2$, $O_1=O_2$, and $Pred_2=Pred_2$, we have the least interesting case of mere repetition.

   Understood this way, (G) is a special case of the very basic structure (S) in which the two subjects differ, the two attitudes verbs coincide, and the predicates are different but not inconsistent. Moreover, the template (S) leads to some very tricky examples, such as Kripke's (1979) puzzles about belief where the same subject associates not just different, but obviously inconsistent predicates to the same thing:[3]

   (8) Pierre thinks London is pretty, and he thinks it is not pretty. (Kripke 1979)
   (9) Peter thinks Paderewski has musical talent, and he thinks he doesn't have musical talent. (Kripke 1979)

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3) Here is a brief summary of Kripke's famous examples. Story #1 (The Pierre Puzzle): Pierre is a normal French speaker living in France. He learns the name 'Londres' as a name of London. He accepts, in French, many claims about the city, including that it is beautiful. So he says, in French, "Londres es jolie." Later, under unfortunate circumstances Pierre is moves to and is confined in a rather unattractive part of London. He is forced to pick up the local language through interaction with his neighbors, who speaks no French at all. Pierre acquires 'London' as a name of London, and thinks of it as not very pretty. Story #2 (The Paderewski Puzzle): This is the monolingual version of Kripke's puzzle about belief. Imagine a character, Peter, who learns the name 'Paderewski' "with an identification of the person named as a famous pianist"(Kripke 1979, 130) Peter later learns of someone called 'Paderewski.' This person was a Polish nationalist leader and Prime Minister. Since he doubts the musical abilities of politicians, Peter concludes that these are two different people who were both named 'Paderewski.'

Meanwhile, (S) also breeds completely ordinary examples:

    (10) Bill believes he saw a fish and wishes that he had caught it.
        (McKinsey 1986)
    (11) Alice fears there is a squirrel in her kitchen cabinets; she hopes to
        catch it alive and turn it outside. (Roberts 1996)
    (12) Grandma thinks a snake is in the barn, and she wants to shoot it.
        (Edelberg 2006)

Fish, squirrels, and snakes are certainly no mythical creatures; (10), (11), and (12) are, on the face of it, rather pedestrian. They are unremarkable precisely because they are the familiar bits of our everyday talk where we employ folk psychology to explain people's behavior and thought. The truth of (12), for instance, explains why grandma is taking her gun to the barn. Note, however, that (12) can be true even if there are in fact no snakes in the barn. That the truth of (12) does not depend on "a snake" having a referent is reminiscent of Geach's Hob-Nob sentence having an intuitively true reading even when "a witch" is empty. So a theory of generalized intentional identity is not only about mythical creatures or issues of purely esoteric nature and interest, but about what people do and say in their everyday interactions and conversations.

To be sure, Geach's own informal explanation is explicit that intentional identity has a wide coverage:

    "We have intentional identity when a number of people, or one person on
    different occasions, have attitudes with a common focus, whether or not
    there actually is something at that focus." (Geach 1967, 627)

Call the original Geach sentence the *inter-subjective* case of intentional identity and what (8) through (12) demonstrate the *intra-subjective* case (Edelberg 2006); in both cases, whether something exists *at* the common

focus is conceptually independent from whether there *is* a common focus. Thus generalized, the problem of intentional identity is far more than a mere logical curiosity. It concerns how we manage to, or take ourselves to, refer to the same thing in thought and in language. As Pagain (2014) puts it, "the fundamental question about human communication falls within the scope of the study of intentional identity."

A general problem of intentional identity, however, involves multiple layers of complexity. First, as already mentioned, the number of subjects involved determines whether we have the inter-subjective or intra-subjective version. Second, the noun phrases in question may be proper names (e.g. London, Paderewski) or descriptions (e.g. a witch, a snake), and they may or may not be empty. Third, while the subject(s) in question might entertain a thought about an individual in a very general way, they could also have something specific in mind, depending on the details of the story. Crucially, we can use the anaphora to track the "common focus," regardless of the subject(s) having a specific or general thought. Finally, one's beliefs, desires, and intentions, as well as other mental states, are not entirely random and discrete; they are often conditioned upon one another and evolve together. A full analysis of how different thoughts can be about the same thing, therefore, must be sensitive to how the varieties of thoughts are interconnected.

The original Hob-Nob sentence illustrates but one instance of an array of closely related linguistic phenomena that manifest an extremely general problem of intentional identity. The standard semantic theory, however, lacks the resources to handle even the most obvious case: all that one can tinker with is the scope of the existential quantifier, which, as we have already seen, is far from a real solution. The unsuccessful attempt is intimately connected to and rooted in a technical limitation of

classical logic, i.e. a quantifier binds within its own clause only. Recall that a descriptivist is committed to treating the anaphora as a bound variable, a move that seems innocent and natural. Problems arise, however, as soon as we try to work out the details of the binding analysis. The predicament should be just as expected, for the various cases of intentional identity are obvious examples of cross-clausal binding. That the traditional account fails to handle the issue is therefore no surprise at all, and the very general problem of intentional identity ultimately boils down to three interrelated puzzles about binding and anaphora in formal as well as conceptual analysis: (a) What licenses anaphora across different clauses/sentences?[4] (b) What explains anaphora across potentially different attitudes? (c) What guarantees anaphora among possibly different subjects?

The challenges here are as much about logic as they are about philosophy of mind, language, and metaphysics. A comprehensive analysis of intentional identity thus bears on fundamental questions about the nature and relationship between mind and world, as well as the intermediary role language plays in between. Complete answers to all these important questions fall beyond the scope of any single research project. The intricacy demonstrates, nevertheless, precisely the far-reaching significance of intentional identity. My objective in what follows is to identify a promising way to handle this very thorny problem.

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4) Formally, classical logical and semantic theories assume that a quantifier binds within its own clause only. As shown in (3) and (4), a natural move is to treat the anaphora in the second conjunct as going proxy for some definite description semantically and hence a bound variable logically (e.g. Neale 1990). However, problems arise as soon as we try to work out the details of this line of binding analysis. The predicament should be just as expected, for the various cases of intentional identity are obvious examples of cross-clausal binding.

Ⅳ. Object and person files

As the phenomena are exceedingly complex and wide-ranging, some amount of selection and modification is necessary. I will focus on a small but representative subset of the data, namely belief reports that involve names. This means a slightly modified Hob-Nob sentence for the inter-subjective case, and Kripke's Peter-Paderewski for the intra-subjective case. There are two more caveats: first, the proposal is not about ontological commitment, but about the kind of representation needed to account for the relevant data. Second, I see the task of a better semantic theory as being two-fold: there is the first phase of just properly *characterizing* the truth-conditions, and the second phase of coming up with the right compositional semantics. Since the traditional analysis cannot even get the first part right, my focus will be on the characterization of the truth-conditions at this stage.

I adopt the mental file metaphor, in particular Newen's (2011) work on person and object files. Person or object files are contentful, complex representational entities that are not purely language-like. Files are comprised of three fundamental types of information– sensory-motor information (SI), image-like information (II), and descriptive information (DI). For instance, consider a red puppet. According to Newen, we have sensorimotor information by grasping the puppet and image-like information by seeing it. Such information can be grasped independent of language. On the other hand, descriptive information, e.g. "my red puppet" and "my favorite toy," is acquired after the acquisition of language.

The construction of person or object files is basically a causal story in that a file normally has an anchoring relation to real entities, though the anchoring relation may not always be fulfilled. Files are good for characterizing a person's mental life. As epistemic agents, each of us is

in charge of a large collection of files. As we go about the world, whether we are engaging in conversation or contemplation, we need to constantly update our files so that they are in accordance with the information we receive.

For example, I have a file of Angela Merkel, which is anchored in the person. The information registered in this file includes the image I have of her, based on what I have seen from various media channels. The initial descriptive information I have include: (a) being called 'Angelika Merkel', (b) being the chancellor of Germany, and (c) being the leader of the Christian Democratic Union. Learning more about Angela Merkel would enrich the descriptive content of my file, adding information such as (d) coming from the former East Germany, and (e) was a scientist and wrote a thesis on quantum chemistry. Suppose one day I get to meet her in person, I will gather further sensorimotor information, and much more vivid image-like information. Of course, each one of us has a Merkel file, and the content of our individual files will not match completely. The possibly rich, idiosyncratic differences follow from the fact that we are distinct epistemic agents with diverse abilities, backgrounds, and interests, as well as the fact that we often navigate our environment through different causal and cognitive paths. Perhaps you are enthusiastic about politics and have done extensive research about her administration; perhaps you think of her as a role model, or perhaps you disapprove of the direction she leads the European Union. Nonetheless, some basic information about Angela Merkel, such as being called by this very name, is common in all files:
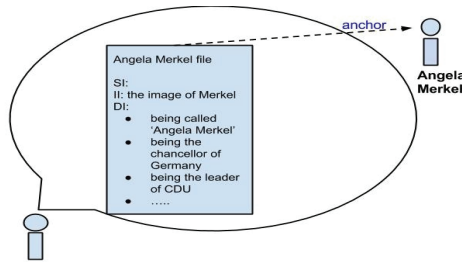
Consider now Kripke's Peter who puzzles many. What happens is that Peter has two files with distinct information, which unbeknownst to him, are anchored in the same person, i.e. Paderewski. In Peter's mental life, these two files are not about the same person. Two people who happen to share the same name can of course have or lack disparate talents. This is why there is nothing inconsistent and puzzling judging from Peter's own perspective. For someone who knows better, the two Paderewski files ought to be merged. So if Peter later finds out that he has too many files for the same Paderewski, he needs to consolidate the two files and adjust the content accordingly. When merging is called for, the alteration of file information will be regulated by factors such as logical consistency, world knowledge, and one's background (like cultural and personal beliefs), among other things.
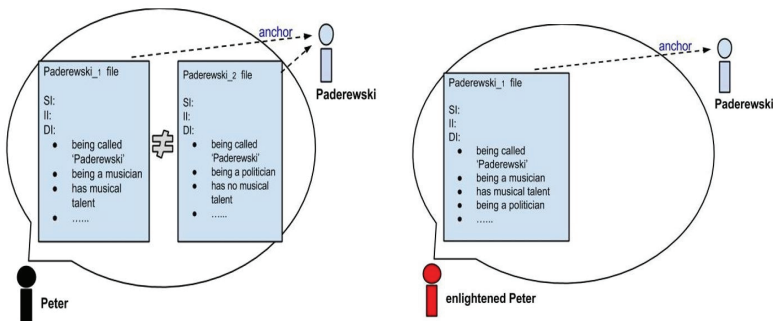
Let's return to the Hob-Nob sentence. Suppose the newspaper in the village names the witch Ursula. Then it (13) appears true:

(13) Hob believes Ursula blighted Bob's mare; Nob believes she killed Cob's sow.

We can account for the truth of (14) using the idea of person file. Hob and Nob each has a Ursula file, which are both anchored in the news story they independently read, even though in fact Ursula is an empty name. Note that not every single piece of information stored in Hob and Nob's individual Ursula files is identical, and it need not be. In this case, what licenses the use of 'she' and renders (13) true is the common source, that is, the anchoring relation to the same news story where the name 'Ursula' is used.
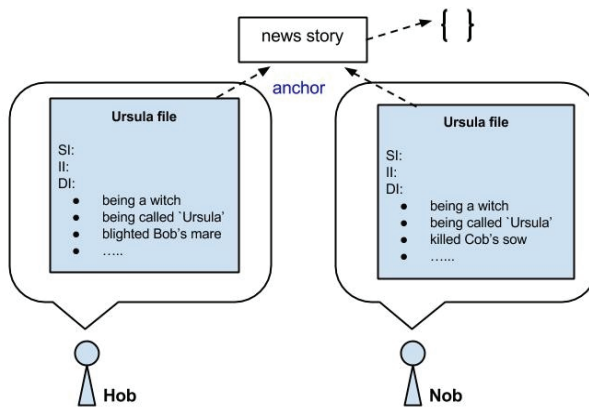
Suppose we are back in Geach's original setup and the village newspaper mentions no specific name. Hob and Nob each has a 'witch file'. Except for the exclusion of 'being called Ursula', nothing much changes in the content of their individual files; in particular, the ways

Hob and Nob are epistemically related to their files remain the same.

One might worry, however, that there is an important difference between the Paderewski case and the Hob-Nob scenario: in the former, Peter's two file are anchored in the same thing, namely the person Paderewski, yet in the later, there is no entity that can be the value of "a witch." Despite providing the ultimate source of information stored in Hob and Nob's respective "witch files," the newspaper article clearly just isn't a witch.

While I agree that the distinction between existence and non-existence is significant, I think the worry can be answered. True enough, it might be the case that your mental file of Merkel was the result of reading Die Welt and mine The New York Times. We are thinking about the same person, despite getting our information from different sources. At the end of the day, all the news reports go back to Merkel, the individual that both causes the production of our files and is the ultimate source of information in our files. By contrast, since there really is no witch, that Hob and Nob's files are linked back to the same village newspaper article is crucial. Should it be that Hob and Nob's files are the result of reading two different newspapers that are informationally independent, then their mental files are no longer about the same witch. Of course, I am not saying that the newspaper article is the witch, only that it is the article, or some other common source, that guarantees intentional identity.

Ⅴ. Concluding remarks

The framework of person and object files has important ramifications on the notion of content and linguistic communication. First, call what each agent has in mind the mental content and what's being communicated in a

linguistic transaction the linguistic content, the general lesson of the previous examples is that linguistic content and the agents' mental content need not correspond in exact details. It is perfectly normal for interlocutors to associate different details with the same object or person; files that contain varying information can nevertheless be files of the same individual. Second, successful linguistic communication requires content coordination, but coordination of content does not require strict equivalence, though correspondence in the relevant way is crucial. In the case of names, given any random individual, the person file you have of that individual and the ones that her friends and family have can considerably diverge. But one thing sure to be held in common is the information of ''being called this very name.'' That is the very minimal, publicly shareable linguistic content that is being transmitted when a name is being used. Indeed, it is possible that richer information is shared, but that depends more on the context and the background knowledge of the speaker and the addressee. The third implication of the present proposal is that even in the case of *de dicto* attitude ascriptions, we need something *de re* in the analysis. As a representational entity, the epistemic relation one bears with the person file is the same in either *de re* or *de dicto* cases.

In Geach's own words, we have intentional identity when "a number of people, or one person on different occasions, have attitudes with a common focus, whether or not there actually is something at that focus."(1967: 62) Furthermore, we have generalized intentional identity when "a number of people, or one person on different occasions, have attitudes with a common focus, whether or not there actually is something at that focus, *and whether or not the individuals involved realize it*." The problem that Geach identifies is one variant of a cluster of deeper and broader problems: problems of how tracking objects in

thought and language works-- across potentially different individuals, across a range of attitudes, and through the uses of varying noun phrases. It is a category that comprises of not only arcane examples, long-standing philosophical puzzles, but also typical cases of everyday action and speech. Given the ubiquity of such talks about attitudinal states in philosophical as well as ordinary contexts, the need for a unified analysis is pressing. The task I have set myself is modest–figuring out the tools needed in giving an adequate characterization of the truth conditions of sentences originated from the template of generalized intentional identity. Recognizing the advantage of the framework of files, complex entity representations that are not really language-like but multi-faceted, I think we have made the first step towards explaining how coordination between content and meaning works in talk and thought.

References

Asher, N. (1987). "A Typology for Attitude Verbs and their Anaphoric Properties." *Linguistics and Philosophy*, 10, 125-97.

Azzouni, J. (2010). *Talking about Nothing: Numbers, Hallucinations, and Fictions*. Oxford: Oxford University Press.

Braun, D. (2012). "Hob, Nob, and Mythical Witches." In W. Kabasenche, M. O'Rourke, and M. Slater (Eds.), *Reference and Referring*, Vol. 10. Topics in Contemporary Philosophy (pp. 149-87). Cambridge, MA: MIT Press.

Cohen, L. J. (1968). "Geach's Problem about Intentional Identity." *Journal of Philosophy* 65: 329-35.

Crane, T. (2013). *The Objects of Thought*. Oxford: Oxford University Press.

Cumming, S. (2014). "Indefinites and Intentional Identity." *Philosophical Studies* 168 (2): 371-95.

Edelberg, W. (1992). "Intentional Identity and the Attitudes." *Linguistics and Philosophy* 15 (6): 561-96.

Edelberg, W. (2006). "Intersubjective Intentional Identity." *Journal of Philosophy* 103 (10): 481-502.

Geach, P. T. (1967). "Intentional Identity." *Journal of Philosophy* 64 (20): 627-32.

Geach, P. T. (1981). *Logic Matters* (2nd edn). Oxford: Basil Blackwell.

Glick, E. (2012). "A Modal Approach to Intentional Identity." *Nou^s* 46 (3): 386-99.

King, J. (1993). "Intentional Identity Generalized." *Journal of Philosophical Logic* 22 (1): 61-93.

Kripke, S. (1979). "A Puzzle about Belief." In A. Margalit (Ed.), *Meaning and Use* (pp. 239-83). Dordrecht: Reidel.

McKinsey, M. (1986). "Mental Anaphora." *Synthese* 66: 159-75.

Newen, A. (2011). "Phenomenal Concepts and Mental Files: Phenomenal Concepts are theory-based." *Philosophia Naturalis* 47/48: 155-83.

Pagin, P. (2008). "What is Communicative Success?" *Canadian Journal of Philosophy* 38: 85-116.

Pagin, P. (2014). "Intersubjective Intentional Identity." In Manuel Garcia-Carpintero and Genoveva Marti (Eds.), *Empty Representations* (pp. 91-113). Oxford: Oxford University Press.

Parsons, T. (1974). "A Prolegomenon to Meinongian Semantics." *The Journal of Philosophy* 71 (16): 561-80.

Priest, G. (2005). *Towards Non-being: The Logic and Metaphysics of Intentionality*. Oxford: Oxford University Press.

Recanati, F. (2013). *Mental Files*. Oxford: Oxford University Press.

Richard, M. (1990). *Propositional Attitudes: An Essay on Thoughts and How We Ascribe Them*. New York: Cambridge University Press.

Roberts, C. (1996). "Anaphora in Intensional Contexts." In *The Handbook and Contemporary Semantic Theory*. (pp.215-246). Oxford: Basil Blackwell.

Saarinen, E. (1982). "Intentional Identity Interpreted: A Case Study of the Relations among Quantifiers, Pronouns and Propositional Attitudes." In E. Saarinen (Ed.), *Game-Theoretical Semantics* (pp. 245-327). Dordrecht: Reidel.

Salmon, N. (1998). "Nonexistence." Reprinted in his *Metaphysics, Mathematics, and Meaning*, 50-90. Oxford: Oxford University Press, 2005.

Salmon, N. (2002). "Mythical Objects." Reprinted in his *Metaphysics, Mathematics, and Meaning*, 91-107. Oxford: Oxford University Press, 2005.