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Empty singular terms in the mental-file framework

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1. The mental-file framework

An increasing number of philosophers use the mental file metaphor to illuminate singular thinking. Different people elaborate the metaphor differently, however.

On my own picture (Recanati 1993, 2006, 2010a, 2011, forthcoming), mental files are based on certain relations to objects in the environment ; different types of file correspond to different types of relation. The relations in question — *acquaintance relations* — are epistemically rewarding in that they enable the subject to gain information from the object.[1] The role of the files is to store information about the objects we are acquainted with — information which our being acquainted with them makes available. So mental files are 'about objects' : like singular terms in the language, they refer, or are supposed to refer. What they refer to is not determined by properties which the subject takes the referent to have (i.e. by information — or misinformation — *in* the file), but through relations (of the subject, or of the file itself construed as a mental particular) to various entities in the environment in which the file fulfills its function. The file corresponds to an information channel, and the reference is the object from which the information derives, whether that information is genuine information or misinformation.

By deploying the file (or its 'address' or 'label') in thought, the subject can think about the object in virtue of standing in the relevant relation to it. What about singular terms in language ? They occur in sentences, and sentences express (and elicit) thoughts. From the

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[1] The paradigm is, of course, perceptual acquaintance, but the notion of acquaintance can be generalized "in virtue of the analogy between relations of perceptual acquaintance and other, more tenuous, relations of epistemic rapport " (Lewis 1999 : 380-81). The generalized notion of acquaintance covers community-mediated testimonial relations to objects mentioned to us in conversation, etc.

interpreter's point of view, to understand a sentence is to entertain a thought. If the sentence contains a singular term referring to an object a, thinking the relevant thought involves deploying a file also referring to a. The file in question is a constituent of the thought, namely what the singular term contributes to it. In other words : the file is the *sense* of the singular term.

In Frege's framework, singular terms have, in addition to their referent, a sense in virtue of which they present the referent in a certain way. Senses obey what Schiffer calls 'Frege's constraint' (Schiffer 1978 : 180): if a rational subject can think of some object a both that it is F and that it is not F, that means that there are two distinct modes of presentation under which the subject thinks of a. Sense is the level at which the subject's rationality can be assessed, and this entails that senses are transparent to the thinker (Dummett 1978 : 131, Boghossian 1994).[2]

Frege also used senses to account for non trivial identity statements such as 'Cicero is Tully'. The statement is informative because the two terms flanking the identity signs have different senses. But what are the senses in question ? As Fine puts it,

> The main problem with the Fregean position (…) is to say, in particular cases, what the difference in the meaning or sense of the names might plausibly be taken to be. Although there appear to be good theoretical reasons for thinking that there *must* be a difference, it seems hard to say in particular cases what it is. For as Kripke (1980) has pointed out, it seems possible for a speaker, or for speakers, to associate the same beliefs or information with two names, such as "Cicero" and "Tully." And if the information or beliefs are the same, then how can the sense be different? (Fine 2007 : 35)

To address this problem, we must realize that there are two options for modes of presentation. They may be descriptive, in which case the object is thought of as the possessor of a certain identifying property. (This is Frege's own construal of senses.) But there are also nondescriptive senses or modes of presentation (Evans 1982), and these, I claim, are mental files. Even though files *contain* information (or misinformation), what plays the role of sense is not the information in the file, but the file itself.[3] If there are two distinct files, one

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[2] This is in contrast to referents, which always present themselves under 'guises' and give rise to all sorts of confusion (two objects mistaken for one, or one for two).

[3] In *Reference and the Rational Mind*, Taylor repeatedly criticizes the authors like myself who take mental files to be concepts, on the grounds that this conflates concepts and conceptions (Taylor 2003 : 75-82, 181-84 ; see Woodfield 1991 for a similar worry). Indeed, as defined by Taylor, conceptions seem to be nothing but mental files : 'A conception… is a kind of mental particular, a labeled, perhaps highly structured, and updateable database of information about

associated with 'Cicero' and the other with 'Tully', then there are two distinct senses, *even if the information in the two files is the same* ('a Roman orator'). On this view, to say that the two terms flanking the identity sign have different senses is to say that they are associated with two distinct files. When an identity is discovered, the files get *linked*, so that information can flow freely between them. The files may eventually get *merged*, after some time. Merging is a complex process : an 'inclusive file' is created, into which all (consistent) information from the inital files is transferred ; then the initial files are deleted. But the initial files need not be deleted. In *partial merging*, the initial files are retained after an inclusive file has been created. (See example (4) below for an instance of partial merging.)[4]

Two terms that are associated with the same file have the same sense, and this allows a rational subject to 'trade upon identity' (Campbell 1987, 1994, 2002). Thus from the two-sentence discourse

(1)   John met Cicero$_i$ the other day. The bastard$_i$ walked away.

we can infer 'there is an x such that John met x the other day and x walked away', simply because the two terms 'Cicero' and 'the bastard' are associated with the same file (as the subscripts indicate). Two terms that are associated with the same file are coreferential *de jure* : 'anyone who raises the question of whether the[ir] reference [i]s the same would thereby betray his lack of understanding' (Fine 2007 : 40). In contrast, one may fully understand the identity statement 'Cicero is Tully', and still wonder whether it is true (i.e. whether the two terms 'Cicero' and 'Tully' are actually coreferential). Full understanding requires grasping the sense of the terms and realizing that the two terms are associated with the same file if they are. (In the case of 'Cicero' and 'Tully', the senses are different and the two terms are only *de facto* coreferential.)

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the extension of an associated concept. For example, each thinker who can deploy the concept <cat> in thought episodes is likely to have stored in his head a database of information (and misinformation) about cats' (Taylor 2003 : 181). Taylor's main objection to equating concepts and conceptions is that this entails that 'what concepts a cognizer has supervenes, more or less, on what beliefs the thinker has' (Taylor 2003 : 77). But I deny that this unwelcome consequence holds if concepts are equated to *mental files*. The problem with Taylor's notion of a 'conception' is that, even though he describes a conception as a mental particular, it seems to correspond to the *content* of a mental file (at a time) rather than to the file itself. I draw a sharp distinction between the two things — the file itself, and its content.

[4] The phenomenon of partial merging is important because it provides a way out of a difficulty raised by Pinillos for mental file accounts of identity statements. See footnote 10 below, and the references therein.

2. Beyond acquaintance

Mental files, I said, are characterized by their function : to store information gained in virtue of acquaintance relations to the reference of the file. If this is right, and if, as I also said, singular thinking proceeds through the deployment of a mental file, then acquaintance is involved in the very concept of a singular thought. But this does not mean that one can think a singular thought only if one is acquainted with the referent. That singular thinking involves mental files, whose role is to store information gained through acquaintance relations to the reference, is compatible with the view that one can think a singular thought in the absence of acquaintance.

What, then, are the necessary conditions for thinking a singular thought ? To answer that question, we need to draw a crucial distinction (familiar in the neo-Fregean literature) between thought-vehicle and thought-content, and a corresponding distinction between the conditions necessary for tokening a singular thought-vehicle and the conditions necessary for successfully thinking a singular thought-content.

To think a singular thought in the sense of vehicle, one must activate a mental file. The role of a mental file is to store information gained through acquaintance with the referent, but such files can be opened in the absence of acquaintance. The most typical reason for so doing (in the absence of actual acquaintance) is that we *expect* that future acquaintance with the referent will enable us to gain information from it, information which will go into the file. Thus the name 'Jack the Ripper' was introduced to refer to whoever committed certain murders, and 'Neptune' was introduced to refer to whatever planet causes certain perturbations in the orbit of Uranus. Even though the referent of such 'descriptive names' is known only by description, the subject nevertheless opens a file for it because he anticipates that he will soon be acquainted with it and needs a place to store information about it (Recanati 1993 : 180).

In the absence of actual acquaintance, is expected acquaintance *necessary* to open a mental file ? I do not think so. Imagined acquaintance, just as expected acquaintance, justifies opening a file and tokening a singular term in thought.[5] Moreover, one may open a mental file to do other things than what it is the normal function of mental files to do — things that have nothing to do with acquaintance (Jeshion 2010). For example, thinking about the average

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[5] Jeshion gives the example of 'a child's imaginary friend' (Jeshion 2010 : 136).

mid-twentieth century American, I may give him a name and predicate things of him.[6] When one uses a name in such a way, there is no doubt that the name has a function, distinct from (though parasitic on) the normal function of names. So I think one should definitely be 'liberal' with regard to the generation of mental files.[7] The natural and primary function of mental files is to store information, so the typical reason for opening a mental file is that one expects to get information, but even if one has no such expectation, one may have other reasons for thinking through a singular vehicle.

Besides the conditions on the *generation* of mental files, however, we must follow Evans in also making room also for conditions on their *success*. Opening a mental file is sufficient to entertain a singular thought only in the sense of thought-*vehicle*. It is not sufficient to entertain a singular thought in the sense of thought-*content*. Why is that so ? Because the content we're talking about is truth-conditional content. A 'successful' singular thought is a thought that has singular truth-conditions, that is, a thought such that there is an x such that the thought is true (with respect to an arbitrary possible world) iff…x… The singular content of such a thought is object-dependent : there is no such content if there is no object to which the speaker refers by deploying the relevant mental file. This makes all the difference between the case of Neptune and the case of Vulcan. In both cases Leverrier, anticipating the discovery of the planet whose existence he (seemingly) had been able to infer, opened a mental file and created a file ; but Leverrier's expectation was correct in the first case, incorrect in the second. So a singular term was tokened when Leverrier thought 'The discovery of Vulcan will make me famous', but no singular thought content was thereby entertained, because there is no object x such that Leverrier's thought is true just in case that object has the relevant property.

There are all sorts of debates on what exactly the conditions are for thinking singular contents. In Recanati (2010a) I argued that to think a singular thought content one must at least expect acquaintance with the putative referent and be right in one's expectation. For my present purposes, however, the only thing that matters is that tokening a singular vehicle is not sufficient for thinking a singular thought content : *some* further conditions have to be met, which include the existence of an object to which, at some time or other, the thinker is

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[6] This is related to the phenomenon of 'arbitrary reference' discussed in Breckenridge and Magidor (2011).
[7] 'Liberalism' is characterized by Hawthorne and Manley (forthcoming) as the view that there is no acquaintance constraint on singular thought.

suitably related in an epistemically rewarding manner. So Leverrier's thought about Vulcan is the paradigm case of an *unsuccessful* tokening of a singular vehicle.

Familiar though it is, the view I have just expounded raises a major difficulty. It entails that Leverrier failed to express a singular content when he said or thought 'the discovery of Vulcan will make me famous', the reason for this being that 'Vulcan' is an empty singular term. But there are well-known cases in which tokening an empty singular term does not prevent one from expressing a truth-evaluable content. Thus if I say or think

(2)   Leverrier thought that the discovery of Vulcan would make him famous

I say something true (assuming Leverrier actually thought 'the discovery of Vulcan will make me famous') : I successfully use the empty name in order to ascribe to Leverrier what I called a 'pseudo-singular belief' (Recanati 1998 : 557, 2000 : 226).[8] How can that be ? The problem is related to the problem of 'negative existentials' like

(3)   Vulcan does not exist

Such a statement also says something true, even though an empty singular term is tokened. What is the function of empty names in such contexts ? How, in the mental-file framework, can we account for such cases ?

To answer these questions, we need to appeal to the idea of a *derived function* for mental files (Recanati 2010a : 177-81). Mental files are primarily singular terms in the language of thought : they serve to think about objects in the world. But, I claim, they have a derived, metarepresentational function : they (also) serve to represent how *other subjects* think about objects in the world. This additional, metarepresentational function of files accounts for all the 'intentional' uses of empty singular terms, illustrated by (inter alia) negative existentials and pseudo-singular attitude ascriptions. Or so I want to argue.

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[8] To entertain a pseudo-singular belief is to have a singular mental sentence tokened in one's belief box, but one that fails to express any proposition. If I say or think 'My son believes that Santa Claus will come tonight', it seems that I successfully use the empty name 'Santa Claus' to ascribe to my son a pseudo-singular belief.

To account for the metarepresentational use of files, we need the notion of an *indexed file*. An indexed file is a file that stands, in the subject's mind, for another subject's file about an object. An indexed file consists of a file and an index, where the index refers to the other subject whose own file the indexed file stands for or simulates. Thus an indexed file $<f, S_2>$ in S_1's mind stands for the file f which S_2 putatively uses in thinking about some entity. So there are two types of file in S_1's mind : regular files which S_1 uses to think about objects in his or her environment, and indexed files which s/he uses vicariously to represent how other subjects (e.g. S_2) think about objects in their environment.[9]

      As an example, consider the following case of attitude ascription, in which the ascribee (the person to whom the attitude is ascribed) is the subject himself at an earlier stage of his doxastic development :

(4)   I was deliberating whether to investigate both Hesperus and Phosphorus; but when I got evidence of their true identity, I immediately sent probes there.

In this example, which I adapt from one by Angel Pinillos (2009, 2011), three files are involved. The 'Hesperus' and 'Phosphorus' files are the files which (before learning the identity — when he was deliberating whether to investigate both Hesperus and Phosphorus or only one of them) the confused subject used to deploy in thinking about Venus. These files are still available after learning the identity, but their status has changed : their role is now to enable the subject to represent how he thought of Venus previously. Learning the identity caused the subject to open an inclusive file for Venus and to transfer information from the 'Hesperus' and the 'Phosphorus' files into it. It is this inclusive file which, arguably, gives the sense of the adverb 'there', at the end of the sentence.[10] But instead of deleting the initial files and completing the second step of the merge operation, the subject has retained the initial files

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[9] Indexed files are recursive : the file component of an indexed file may itself be an indexed file. Thus S_1 may think about S_2's way of thinking of S_3's way of thinking of some entity, and to that effect may entertain the indexed file $<<f, S_3>, S_2>$.

[10] The locative adverb, Pinillos rightly claims, is coreferential *de jure* with both 'Hesperus' and 'Phosphorus'. Since 'Hesperus' and 'Phosphorus' are not *de jure* coreferential, Pinillos thinks this example raises a major difficulty for the mental file account (or any account of *de jure* coreference in terms of sameness of sense), since the account predicts that *de jure* coreference is a transitive relation. I deny that the account has this consequence, however (Recanati 2011, forthcoming : chapter 9).

(linked together, and linked also to the inclusive file), and uses them vicariously to represent how, when confused, he used to think of Venus. In other words, the 'Hesperus' and 'Phosphorus' files, as used by the speaker in (4), are indexed to his or her earlier self, while the inclusive 'Venus' file associated with 'there' at the end of the sentence is a regular file.

Given the existence of two types of files in the subject's mind (regular files and indexed files), and the mechanism of linking that operates between files, there are two possibilities for a given indexed file. Either the indexed file, which represents some other subject's way of thinking about some entity, is linked to some regular file in the subject's mind referring to the same entity (and corresponding to the subject's own way of thinking of that entity) ; or it isn't. If it isn't, the subject's only access to the entity in question is via the filing system of other subjects. For example, S_1 may not believe in witches, but may still ascribe to S_2 thoughts about a certain witch which S_2 thinks has blighted his mare (Geach 1967 ; Edelberg 1992). In this case S_1 does not refer to the witch in the full-blown sense of the term ; he does not express a genuine singular thought about the witch, but only a vicarious singular thought — a singular thought by proxy, as it were. This is the free-wheeling, or unloaded, use of indexed files, illustrated by e.g. 'My son believes that Santa Claus is coming tonight'.

The other possibility for an indexed file is to be linked to a regular file in the subject's mind. In such a case the subject has two ways of thinking of the object : a way of thinking of his own (a regular file) and a vicarious way of thinking (the indexed file). If the subject uses the indexed file to think about the object, that use is 'loaded' and has existential import, in contrast to the free-wheeling use. Even though the subject refers to the object through some other subject's file about it, he takes that object to exist since he himself has a regular file about it. In this way a singular thought is genuinely expressed. Example (4) is a case in point: the speaker uses two vicarious files indexed to his earlier self, namely a Hesperus file and a Phosophorus file, both of which are linked to his current Venus file and therefore carry ontological commitment.

There is an important difference between linking as it operates between regular files (horizontal linking), and linking as it operates between regular files and indexed files, or between indexed files of different degrees of embedding (vertical linking). Linking between regular files typically makes it possible for information to flow freely between the linked files. But indexed files are used to stand for some other subject's body of information about some object, and that function could not be served if, through linking, the indexed file was contaminated by the subject's own information about that object. Information can flow only after undergoing upward or downward conversion (for example, a predicate $\lambda x G x$ in an

indexed file $\langle f, S_2 \rangle$ can be transferred into the subject's regular file to which it is vertically linked only after upward conversion into $\lambda x\ S_2$ *believes that x is G*).[11] So vertical linking between regular files and indexed files (or between indexed files with different degrees of embedding) preserves the informational encapsulation of files, which standard (horizontal) linking typically has the effect of suppressing.

4. Mental files and opacity

In light of the distinction between regular files and indexed files, let us consider the possible interpretations of an attitude report of the form '*x believes that a is F*'. We shall restrict ourselves to the cases where '*a*' is a genuine singular term (a name or an indexical) rather than a definite description.[12]

Classically one distinguishes between transparent and opaque interpretations of an attitude report. In transparent attitude ascriptions, the sense-providing file associated with the singular term in the embedded clause is the speaker's regular file — his way of thinking of the object about which a belief is ascribed to some other subject. The ascribee's own way of thinking is not specified at all (or so the usual story goes) : there is implicit existential quantification over the modes of presentation (mental files) in the ascribee's mind. The utterance only specifies the object the ascribed belief is about, not the way that object is thought about by the ascribee. [13]

In opaque attitude ascriptions, a (more or less specific) mode of presentation is part and parcel of the ascribed thought content. The mode of presentation in question is an indexed file that is typically 'loaded', that is, linked to a regular file in the speaker's mind. (Cases in which the indexed file is unloaded will be discussed in the next section.) It follows that two files are potentially relevant to the interpretation of the utterance in such cases: one provides the speaker's own way of thinking of the referent, and the other the ascribee's way of thinking. In *Direct Reference* I distinguished these two modes of presentation by calling them the 'exercised' mode of presentation and the 'ascribed' mode of presentation respectively.

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[11] Likewise, the process of downward conversion necessary to transfer information in the other direction – from the regular file to the indexed file — involves putting the predicate in the scope of some actuality operator.

[12] As I pointed out in *Direct Reference* (chapter 20), there are three times more interpretations for such a sentence if definite descriptions are allowed as substituends for the schematic letter '*a*', because with definite descriptions the relevant modes of presentation may be descriptive as well as nondescriptive.

[13] This will be qualified below.

To see how the two modes of presentation come into play, consider the following example of an opaque attribution of attitude. I borrow it from Daniel Morgan's dissertation on first person thinking (chapter 5).

The Roll-Call Game

A new substitute teacher comes to class. One game the class always enjoys playing with a new substitute teacher is the roll-call game. The only rule of the roll-call game is that when teacher calls out a given name, someone other than the bearer of that name calls back "here". When teacher calls out "Daniel", Mark says "here". When teacher calls out "Mark", Daniel says "here". When teacher calls out "Susie", Tracy says "here". When teacher calls out "Tracy", Susie says "here". Unfortunately, the principal knows about the roll-call game and has armed the substitute teacher with a chart linking all the pupils' names and photos. I, who have found this out, tell the other pupils that the game is off. "The principal gave her a chart with our names and photos, so she already knows who everybody is. She knows that you are Mark, that Tracy is Tracy, and that I am Daniel". (Morgan 2011 : 176-77)

As Morgan rightly points out, 'She knows that I am Daniel' is an opaque attitude ascription, because a specific visual mode of presentation of Daniel (the referent of 'I') is ascribed to the teacher:

Suppose… that the teacher hasn't bothered to look at her chart. Does the teacher have the knowledge I said she had? No, she doesn't. She doesn't have the knowledge I said she had even if, for example, she has also become my new neighbor, and has been told my name, so that she does know, of the boy she has seen next door, that he is Daniel (although this *would* be enough to make my knowledge ascription true if it were just a transparent ascription). The reason what I said is false is, roughly, that the teacher cannot recognize me in class as someone whose name she knows to be "Daniel". Such knowledge – perhaps we might think of it as knowledge that involves deploying a recognitional concept – is precisely the kind of knowledge she would need to have to frustrate our purposes in playing the roll call game, and the point of my remark was to indicate (…) that those purposes had been frustrated. So the knowledge-ascription expressed by this first-person-pronoun involving sentence does imply *something* about how the object of the attitude is being thought about – it is not to be interpreted transparently. But it does not imply that that object is being thought about using the first-person concept. (Morgan 2011 : 177)

Still, I would say, the first person concept does play a role in this example. The speaker says 'I', and this constrains the file (or one of the files) associated with the singular term : the relevant file is bound to contain the piece of information 'is uttering this token'. The file thus constrained is not the indexed file about Daniel which the utterance ascribes to the teacher, however ; for the teacher is not aware of Daniel's uttering this token of 'She knows I am

Daniel'. In such cases, the character of 'I' does not constrain the ascribed mode of presentation (the indexed file), it can only constrain the exercised mode of presentation (the speaker's regular file). The speaker knows that he himself is uttering this token, and as the use of 'I' indicates, it is his first person file which the speaker deploys in thinking about himself as the object the teacher's attitude is about. So two files are involved in the interpretation of that utterance : one is the regular file which the speaker exercises in thinking/speaking about himself (a first person file), the other is a vicarious file indexed to the teacher (a recognitional file).

Are both files relevant to the semantic content of the utterance ? I think the answer has to be positive, though for different reasons.[14] The ascribed mode of presentation pertains to semantic content (in *one* sense of the phrase 'semantic content') because it is truth-conditionally relevant. As Morgan emphasizes, the utterance 'She knows I am Daniel' is not true in the context of the Roll-Call Game unless the teacher is able to *visually recognize* the referent as Daniel.[15] As for the exercised mode of presentation, we may take it also to be semantically relevant because the referring expression, in virtue of its linguistic meaning, constrains it. As I have argued elsewhere (Recanati 1993, 1995, forthcoming), the linguistic meaning of a referring expression sets up a constraint on the mental file through which the reference of the expression is determined : that file has to contain the piece of information conventionally encoded by the referring expression (the information that the referent is the speaker, in the case of 'I' ; that the referent is the addressee, in the case of 'you' ; that the referent is named 'Smith', in the case of the proper name Smith ; that the referent is the *F*, in the case of a referential use of the description 'the *F*'…). In many cases, especially when indexicals are used, the constraint applies to the mode of presentation exercised by the speaker, rather than to the ascribed mode of presentation.[16] The fact that the conventional

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[14] By saying that the answer is positive, I do not mean to endorse the presupposition that there is a well-defined, non-disjunctive notion of 'semantic content'. Actually, I think the notion *is* disjunctive (Recanati 2004). Thanks to Daniel Morgan for urging me to make this explicit.

[15] See Schiffer 1977, Crimmins and Perry 1989, Recanati 1993 for the idea that the ascribee's mode of presentation is tacitly referred to and affects truth-conditions.

[16] The reason for this is that, as I said in *Direct Reference*, 'the mode of presentation associated with an indexical is tied to the particular context in which that indexical is used. Only someone in that context can think of the referent under that mode of presentation. So the mode of presentation associated with an indexical can hardly occur outside the thoughts of the speaker and his addressee, who are both in the right context ; in particular, there is no reason to suppose that the mode of presentation in question is also a constituent of the *believer's* thought, since the believer is generally not one of the participants of the speech episode'

meaning of the expression constrains the speaker's file is enough, I think, to make the latter relevant to the semantic interpretation of the utterance (in *one* sense of 'semantic interpretation').

It may be doubted that there are *fully* transparent uses, that is, uses where nothing whatsoever is contextually suggested regarding the way the ascribee thinks of the object his or her belief is about.[17] Consider another example from Pinillos, which I discuss in *Mental Files* (Chapter 9) :

(5)   He$_i$ was in drags, and (as a result) Sally thought that Smith$_i$ wasn't Smith.

Pinillos claims, wrongly in my view, that in this example the two occurrences of the name 'Smith' are not *de jure* coreferential. Pinillos's argument is the following:

> If they were *de jure* coreferential, then it should follow that Sally thought that there is an x such that x is not x (an absurd belief). (Pinillos 2009)

But that does not actually follow. What follows from the assumption of *de jure* coreference is that, for some x, Sally thought that x was not x, and that is not an absurd belief. This is like Russell's example : 'I thought your ship was longer than it is'. There are two readings : one reading on which the ascribed thought is irrational, and a transparent reading in which it is not. On the transparent reading of (5) the two occurrences of 'Smith' are associated with the *same* mental file, namely *the speaker's mental file about Smith* ; so they are *de jure* coreferential. The belief ascribed to Sally is not irrational, however, but merely under-specified : the utterance says that for a certain x (namely Smith), Sally believes of x that he is not x. For that belief to be rational it is sufficient for Sally to deploy two distinct modes of presentation of x in her thought, and to think of Smith (represented under one mode of presentation) that he is not Smith (represented under the other mode of presentation). Even if Sally's modes of presentation are not specified in the speaker's utterance, their distinctness can be inferred from the presumption that Sally is rational.[18]

(Recanati 1993 : 400). In this passage, 'the mode of presentation associated with an indexical' refers to the mode of presentation linguistically constrained by the meaning of the indexical.
[17] See Crimmins 1995 for discussion of this point.
[18] The interpretation of (apparently) trivial identity statements such as 'Smith is Smith' works the same way. The two occurrences of 'Smith' are associated with the *same* mental file, namely *the speaker's mental file about Smith*; so they are *de jure* coreferential. At the same

But is it true that the ascribee's mode of presentation is not specified in that example? This is far from obvious. In the context of (5) it is strongly suggested that one of the modes of presentation under which the ascribee thinks of Smith has something to do with his being in drags. Here too, therefore, we find that there are two files simultaneously in use in the interpretation of the grammatical subject of the embedded clause : one is the speaker's regular file about Smith, which is associated with both occurrences of the name 'Smith' in the utterance and makes them *de jure* coreferential ; the other is the ascribee's demonstrative file about the man in drags (who happens to be Smith). The speaker represents Smith directly under his regular file 'Smith', and at the same time he represents him vicariously through a demonstrative file indexed to the ascribee. The indexed file in question ('that man in drags') is vertically linked to the speaker's regular file about Smith. So (5) is not a fully transparent belief ascription. It is a hybrid, like most belief ascriptions.

I conclude that attitude ascriptions typically involve two modes of presentation : the speaker's (a regular file) and the ascribee's (an indexed file). The only significant distinction which can be drawn between two classes of case here is the distinction between cases in which the linguistic meaning of the referring expression constrains the ascribee's file, and cases in which it only constrains the speaker's file. The latter might be called the 'transparent' cases, but they are not really transparent in the usual sense : even if the linguistic material only constrains the speaker's file, this does not prevent the ascribee's file from being contextually recoverable to some extent,[19] and to affect the truth-conditions of the report. Thus, in Morgan's example ('She knows that I am Daniel'), the meaning of 'I' only constrains the speaker's file, but the ascription is still opaque in the sense that it is true only if the teacher thinks of the referent under a particular mode of presentation.

5. 'Intentional' uses of empty singular terms

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time, as Schroeter puts it, such a claim 'is best understood as responding to a doubt about the identity' of the two Smiths (Schroeter 2007 : 614n). That means that, in addition to being associated with the speaker's file about Smith, the two occurrences of 'Smith' are also associated with *two separate vicarious files* indexed to some (contextually determined) subject unaware of the identity.

[19] Likewise, when the linguistic meaning of the referring expression pertains to the ascribee's files rather than the speaker's, that does not prevent the speaker's file to be contextually recoverable. Example (4) is a case in point: it is contextually clear how the speaker currently thinks of the referent even though he refers to it through vicarious files indexed to his ealier self. The only cases in which no file is recoverable on the speaker's side seem to be the cases in which the indexed file that is used remains unloaded (free wheeling cases).

Intentional uses of empty singular terms correspond to a third type of case : the case in which the sense-providing file associated with a singular term is a free-wheeling (unloaded) indexed file. In attitude ascriptions that interpretation arises when the singular term in the embedded clause is mutually known not to refer (as in 'Leverrier believed that the discovery of Vulcan would make him famous' or 'My son believes that Santa Claus is coming tonight'). These are the only attitude ascriptions which are *fully opaque* : the object the thought is about is only construed from the ascribee's point of view, but the speaker does not deploy a regular file about it. In such cases, the ascribed belief is 'pseudo-singular' : the ascription portrays the ascribee as having a singular mental sentence tokened in her belief box, but one that fails to express any proposition.

What about negative existentials ? It seems that the same sort of analysis applies : the file associated with the singular term is a free-wheeling indexed file, so using the term in this context carries no ontological commitment and there is no contradiction between using the singular term and denying existence to its referent.

Geach's 'intentional identity' cases fall into the same category. This is not surprising since they involve a pseudo-singular attitude ascription :

(6)   Hob thinks a witch has blighted Bob's mare, and Nob wonders whether she killed Cob's sow.

The file introduced by the indefinite 'a witch' in the first conjunct is a free-wheeling indexed file.[20] The pronoun in the scope of the attitude verb in the second conjunct is anaphoric on the indefinite and inherits the associated file.

This raises a problem. The anaphoric relation between the indefinite and the pronoun implies that *the same file* is deployed by Nob and by Hob. What does that mean ? To answer this question we need to make room for *public* or *shared files* – files shared by distinct individuals in a community. This is an important issue, but orthogonal to the topic of this paper, so better left for another occasion.

6. Conclusion

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[20] On the idea that indefinites introduce files, see Karttunen 1976 and the subsequent literature on dynamic semantics.

In conclusion, I'd like to emphasize an important characteristics of the notion of indexed file I have put forward to account for intentional uses of empty singular terms. Indexed files, I take it, have an *iconic* dimension. To represent the file deployed by the person to whom a singular attitude is ascribed, we deploy a similar file, indexed to that person. Or perhaps we should say that indexed files are a *simulative* device : by deploying a mental file just like the file in the mind of the indexed person, one simulates the mental state one is attempting to describe ; one puts oneself in the other person's shoes (or frame of mind), by looking at things her way.

One way of capturing the iconic/simulative dimension of indexed files would be to treat them as quotational devices. In quotation, one refers to a linguistic expression by actually using it or (more cautiously) displaying it. Similarly, there is a sense in which an indexed file stands for itself, that is, for the file in the mind of the person one is simulating by deploying that very file.

The analogy with quotation is tricky, however. Standardly, quotations are opaque : the expression in quotes refers to itself, rather than to its ordinary referent. This, at least, is true of the central class of quotations which I dubbed closed quotations (Recanati 2001, 2010b : chapter 7). Indexed files behave differently. While indexed, the file *still refers to its ordinary referent,* that is, it still refers to the object the simulated file is about. In standard instances of opaque attitude attribution, a singular term in the embedded clause evokes a file in the ascribee's mind and *refers to the referent of that file* (not to the file itself). This is, as Quine would put it, a mixture of use and mention. Indexed files can still be treated as a quotational device, but the type of quotation at issue has to be open quotation, not closed quotation. Open quotations have an echoic character but, typically, the quoted words keep their ordinary meaning and reference while evoking or echoing the words of some other person or persons (Recanati 2008, 2010b : chapter 8).

The following example (from Recanati 1987) illustrates open quotation and can easily be analysed in terms of indexed files :

(7)   Hey, 'your sister' is coming over

Here the description 'your sister' refers to Ann, who is *not* the addressee's sister, but is thought to be so by James, a third party who the speaker is ironically echoing. The reference is the reference of the relevant file (the file which contains the information : 'is the addressee's sister'), and in this case the relevant file is a file in some other subject's mind. So

the file the speaker uses to refer to Ann is a file indexed to James. The indexed file is linked to the speaker's own file about Ann (or to a public file about her shared by the speaker and her addressee). Since that file about Ann does not contain the information 'addressee's sister', it is clear that in this example the linguistic materials constrain the indexed file, rather than the regular file through which the speaker thinks of the referent.

What is interesting about (7) is that it is not globally metarepresentational. (7) is not about anybody's attitudes or representations: it ascribes to Ann the property of coming over. (7) does not even mention James, the person whose way of thinking is being echoed. The metarepresentational element that is undoubtedly present is to be found at the level of sense rather than the level of reference. The sense of the description is an indexed file, and an indexed file is a file that is tacitly ascribed to some other subject ; but the ascription of the file to James remains external to the utterance's truth-conditional content.[21]

What I have said about the relative transparency of indexed files (by which I mean : the fact that indexing preserves reference) only applies to those indexed files that are loaded and ontologically commit the speaker/thinker. Unloaded indexed files are special in that their use *is* fully opaque. They do not refer to anything — the only reference there is is pretend or simulated reference. As a result, there are only two options for an utterance containing a singular term associated with a free-wheeling indexed file.

First option : the utterance does not express a genuine thought, but only a 'mock thought', as Frege puts it (1979 : 30). If I say to my children: 'Santa Claus is coming tonight', I do not express a genuine singular thought. I only pretend to refer to Santa Claus, and to predicate something of him. (The same thing is arguably true if, echoing my children, I tell my wife : 'Santa Claus is coming tonight'. Here the file associated with 'Santa Claus' is indexed to Santa-Claus believers and unloaded, so the whole speech act has to be seen as a form of pretense.) Second option : the utterance expresses a thought that is globally metarepresentational – it is about someone's, e.g. my children's, representations, rather than about what these representations are about. This corresponds to pseudo-singular belief ascriptions. I think negative (and positive) existentials too are meta-representational, but that is one of the issues I must leave for another occasion.[22]

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[21] The possible occurrence of indexed files in non-metarepresentational contexts accounts for substitutivity failures in simple sentences, as in Saul-type examples (Saul 1997).

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