



Memory-based modes of presentation

François Recanati¹ 

Received: 19 July 2023 / Accepted: 7 February 2024 / Published online: 8 April 2024
© The Author(s) 2024

Abstract

To deal with memory-based modes of presentation I propose a couple of revisions to the standard criterion of difference for modes of presentation attributed to Frege. First, we need to broaden the scope of the criterion so that not merely the thoughts of a given subject at a given time may or may not involve the same way of thinking of some object, but also the thoughts of a subject at different times. Second, we need to ‘relativize’ the criterion of difference to particular subjects in particular situations. Thanks to these revisions, we can make sense of Evans’ notion of a dynamic mode of presentation that persists through time despite lower-level changes. A dynamic mode of presentation is a complex mode of presentation involving several epistemically rewarding relations to the reference successively (in contrast to composite modes of presentation, which involve several epistemically rewarding relations simultaneously). I show how this idea can be cashed out in the mental file framework, and how, in that framework, we can provide a straightforward answer to the question: when is a mode of presentation based on a memory *M* the same as the mode of presentation based on the perception *P* from which the memory derives? The answer appeals to the distinction between anchored and unanchored memories.

Keywords Memory · Mode of presentation · Reference · Mental files · Cognitive dynamics

1 Modes of presentation: the criterion of difference

Frege’s distinction between sense and reference rests on the following observation. Two linguistic expressions may refer to the same thing, as a matter of fact, yet a subject who fully understands these expressions may fail to realize that they do. What this shows, according to Frege, is that *what a subject grasps* when she understands an expression is the *sense* of that expression, rather than directly its reference. The sense

✉ François Recanati
frecanati@gmail.com

¹ Collège de France, Paris, France

of an expression corresponds to *the way in which the reference is presented* when that expression is used. Two expressions (e.g. ‘Cicero’ and ‘Tully’, or ‘the morning star’ and ‘the evening star’) may refer to the same thing yet present that thing differently, under different aspects. In such a case, a linguistically competent subject may fail to realize that the expressions refer to the same thing. What is transparent to the subject (what she grasps) is the sense of the expression, but the reference remains opaque to the extent that it depends upon worldly facts beyond the subject’s knowledge.

In the analytic tradition the following ‘criterion of difference’ for modes of presentation (senses) is standardly ascribed to Frege:

Two coreferential expressions ‘*a*’ and ‘*b*’ are associated with distinct senses, i.e. present their common reference in two distinct ways, if a rational subject could assent to ‘*a* is *F*’ and simultaneously withhold assent from, or reject, ‘*b* is *F*’.

A situation in which a rational subject accepts contradictory predications regarding what is in fact one and the same object is known as a ‘Frege case’ (Fodor, 1994). The criterion of difference uses the possibility of such cases to diagnose distinctness in sense among coreferential expressions.

The formulation of the Fregean criterion I have just cited is roughly that given by Gareth Evans (1982). Evans points out that the criterion of difference for modes of presentation derives from Frege’s criterion of difference for thoughts:

The thought associated with one sentence *S* as its sense must be different from the thought associated with another sentence *S*’ as *its* sense, if it is possible for someone to understand both sentences at a given time while coherently taking different attitudes towards them, i.e. accepting (rejecting) one while rejecting (accepting), or being agnostic about, the other. (Evans, 1982: p. 19)

This criterion itself ‘rests upon the principle that it is not possible coherently to take different attitudes towards the same thought’ (Evans, 1981, 1985: p. 308).

In a footnote, Evans makes an interesting observation. He points out that Frege’s criterion of difference for thoughts would give incorrect results if we substituted ‘anyone’ for ‘someone’, that is, if we said that the thoughts expressed by two sentences are distinct if it is possible for *anyone* to understand both sentences at a given time while coherently taking different attitudes towards them. The substitution is illegitimate, Evans points out, for the following reason:

The thought expressed by ‘Hesperus is *F*’ is distinct from the thought expressed by ‘Phosphorus is *F*’, but it is not true that *anyone* who understands the two sentences can take different attitudes to them. For example, it is not true of someone who knows that Hesperus is Phosphorus. (Evans, 1982: p. 19, fn 19)¹

In other words, not all rational subjects are in a situation such that it would be coherent for them to ascribe contradictory properties to one and the same object presented under two distinct modes of presentation. Such an ascription would be incoherent for any

¹ Evans credits Benacerraf for this observation. I am indebted to Matheus Valente and Victor Verdejo for drawing my attention to that important footnote.

subject who is aware of the identity. But to establish, via the criterion of difference, that two coreferential expressions are associated with distinct modes of presentation, it suffices that *some* rational subject (some rational subject or other) could coherently make these contradictory predications.²

The sense of a linguistic expression is the way it presents its reference, but the distinction between the thing referred to and the way it is presented is not restricted to language. It applies to silent thought as well. The object we're thinking about is one thing and the way we are thinking of it is another. There are different *ways of thinking* of a given object, and they deserve the label 'modes of presentation', whether or not they are linguistically expressed. We should therefore reformulate the criterion of difference for modes of presentation so as to make it independent of language. The following formulation, due to Stephen Schiffer, gives us what we need:

If a minimally rational person x believes a thing y to be F (...) and also believes y not to be F , then there are distinct modes of presentation m and m' such that x believes y to be F under m and disbelieves y to be F under m' . (Schiffer, 1978: p. 180)

2 Reference through memory

Sometimes we remember an object we previously encountered and have a thought about it. In such a case the thought is about the object we remember, and a particular 'way of thinking' of the object seems to be involved: we think of the object through our memory of it. The relevant way of thinking seems to be different from another way of thinking involving *perception* rather than memory. Thus, in (1) and (2) below, the speaker expresses thoughts that involve a memory-based mode of presentation and a perception-based mode of presentation respectively:

- (1) I wonder what sort of bird *that* was [based on the memory of an event that took place the previous year]
- (2) I wonder what sort of bird *that* is [based on current perception]

The demonstrative 'that' is the same in (1) and (2), but it is associated with distinct modes of presentation. In (1) the demonstrative is what Evans calls a 'past-tense demonstrative', one that is associated with a memory-based mode of presentation (Evans, 1982: pp. 135, 306).³

² The idea that the relevant subject is 'some subject or other' corresponds to what I call the *absolute* interpretation of the criterion of difference. It contrasts with another possible interpretation, to be argued for in Sect. 5: the *relativized* interpretation. According to the relativized interpretation, two coreferential expressions ' a ' and ' b ' are associated with distinct senses *for some particular subject* if *that subject* could assent to ' a is F ' and simultaneously withhold assent from, or reject, ' b is F '. Here the relevant subject is not 'some subject or other' but a particular subject in a particular epistemic situation.

³ As a reviewer pointed out, it might be more appropriate to call them memory demonstratives, in order to make room for a distinction between memory tenseless judgments (e.g. 'that man was a philosopher') and memory tensed judgments (e.g. 'that man was drenched'): both involve memory demonstratives, the reviewer suggests, but the former are 'less temporal' than the latter (so the memory demonstratives they involve don't deserve the label 'past-tense demonstrative'). I leave that issue aside and refer the interested reader to Campbell 2002, chapter 6, where the relevant distinctions are drawn.

Contrary to what the contrast between (1) and (2) may suggest, grammatical tense is not essential to distinguish one type of case from the other. *No* grammatical feature is essential, arguably: one and the same sentence containing a demonstrative can be used to express a thought involving either a perception-based or a memory-based mode of presentation. Thus consider the following examples:

- (3) That banana was in the fridge
- (4) That banana is in the fridge

Sentence (3) is in the past tense, but the demonstrative phrase ‘that banana’ need not be a past-tense demonstrative associated with the memory of a certain banana: it may also be an ordinary demonstrative associated with the current perception of a certain banana. (Imagine the subject is holding a banana and, based on its felt temperature, judges: ‘that banana was in the fridge—it’s pretty cold’.) Conversely, sentence (4) is in the present tense, but the demonstrative phrase ‘that banana’ need not be an ordinary demonstrative associated with the perception of a certain banana; it may also be used to refer to a particular banana the speaker remembers, and of which he conjectures that it is now in the fridge.

The distinction between perception-based and memory-based modes of presentation is fairly intuitive. It’s one thing to think of an object as the object we are currently perceiving, and another to think of it through the memory trace left by an earlier perception. But can we establish that the two modes of presentation are distinct by appealing to the Fregean criterion of difference? That is the question that matters for us now.

To establish, by means of the Fregean criterion of difference, that *that banana_{memory}* and *that banana_{perception}* are distinct modes of presentation, we need to consider a situation in which a rational subject takes conflicting attitudes towards thoughts that differ only by the substitution of one mode of presentation for the other. If such a situation is possible or imaginable, then, by the Fregean criterion, the modes of presentation are distinct. That is indeed what we find: we can easily imagine a situation in which the subject remembers a certain banana and suspends judgment as to whether that banana has ever been in the fridge, while, at the same time, perceiving (what is in fact) the same (unrecognized) banana and judging, on the basis of its felt temperature, that that banana was in the fridge shortly before.

In this case there is a memory (call it M) and two perceptions: the perception P1 that is the source of the memory and the perception P2 which is simultaneous with the memory. By the criterion of difference we can establish that the mode of presentation based on M and the mode of presentation based on P2 are distinct modes of presentation; and we can do so because the two modes of presentation (that based on M and that based on P2) are simultaneously deployed, in such a way that the criterion of difference can apply. As Dickie and Rattan point out, ‘[The criterion of difference] is synchronic and intrapersonal – it deals in rational engagement between the attitudes that a single subject has at a time’ (Dickie & Rattan, 2010: p. 146). It follows that it can only be invoked when the conflicting attitudes at issue are simultaneous. In the case of M and P2, the simultaneity condition is satisfied, but it is not in the case of M and P1. So we cannot establish that the mode of presentation based on M is distinct from *the mode of presentation under which the subject thought of the banana when*

she initially encountered it, during episode P1; for *these* modes of presentation (that based on P1 and that based on M) are not simultaneously deployed. P1 takes place first, and M follows later.

A similar problem famously arises with ‘today’ and ‘yesterday’. It seems that to think of a certain day as ‘today’ and to think of it the next day as ‘yesterday’ are two different ways of thinking of one and the same day. But the fact that these are distinct modes of presentation of the day in question cannot be established by appealing to the Fregean criterion (Evans, 1981, 1985: pp. 307–308). The criterion of difference cannot do its work unless someone is able simultaneously to entertain the thoughts expressed by, for example, ‘Today is fine’ and ‘Yesterday was fine’, with ‘today’ and ‘yesterday’ referring to the same day. But there is no way in which a subject can think of a single day both as ‘today’ and as ‘yesterday’, at the same time. So there is no way in which we can check whether a rational subject thinking of a single day *d* both as *today* and as *yesterday* at the same time could or could not hold conflicting attitudes towards the thought expressed by means of ‘today’ and that expressed by means of ‘yesterday’.

Not only can we not establish the distinctness of the modes of presentation in these cases by appealing to the criterion of difference. There are also reasons to believe that the relevant modes of presentation (that associated with ‘today’ and that associated the next day with ‘yesterday’, or that based on P1 and that subsequently based on M) are actually *the same mode of presentation persisting through time*. Thus Frege wrote:

If someone wants to say today what he expressed yesterday using the word ‘today’, he will replace this word with ‘yesterday’. Although the thought is the same, the verbal expression must be different in order that the change of sense which would otherwise be effected by the differing times of utterance may be cancelled out. (‘Thoughts’, in Frege, 1984: p. 358)

For Frege, ‘the thought is the same’, when you think of a certain day as ‘today’ and when, the following day, you think of it as ‘yesterday’. Evans made a similar claim. He argued that temporal thoughts such as ‘Today is fine’ (tokened on a certain day) and ‘Yesterday was fine’ (tokened the next day) are ‘cross-sections of a persisting belief state which exploits our ability to keep track of a moment as it recedes in time’ (Evans, 1981, 1985: p. 310). It follows that.

A subject on d_2 is thinking of d_1 *in the same way* as on d_1 , despite lower level differences, because the thought episodes on the two days depend upon the same exercise of a capacity to keep track of time. (Evans, 1981, 1985: p. 311)

Ninan (2015) also argues that, in such cases, the modes of presentation are the same despite lower-level differences. This is a controversial position,⁴ of course, but we cannot use the criterion of difference to settle the issue, because the simultaneity condition is not satisfied.

⁴ See Recanati (forthcoming) for a critical discussion of Ninan’s argument.

3 Making the criterion of difference diachronic

To overcome the limitation I have just pointed out (i.e. the fact that the criterion of difference only applies when the simultaneity condition is satisfied), two distinct strategies offer themselves.

The first strategy consists in imagining extraordinary circumstances in which the relevant modes of presentation *can* be simultaneously deployed. Think of the movie *Groundhog Day*: the main character, Phil Connors, is trapped in a time loop forcing him to relive the same day (February 2, Groundhog Day) repeatedly. The first time this happens, Phil comes to realize that the day he is currently living through is not a fresh day but the same day as the previous day. In these admittedly strange circumstances, Phil can think of the day in question both as ‘today’ and as ‘yesterday’, at the same time. He can also doubt the identity and ascribe to the current day properties (like the fact that he himself remembers living through February 2) that the previous day did not possess. By the Fregean criterion of difference, that imaginable situation is sufficient to establish that the *yesterday*-mode of presentation and the *today*-mode of presentation are distinct modes of presentation.

Another, more easily generalizable strategy consists in avoiding such far-fetched (and possibly incoherent) examples and explicitly lifting the simultaneity condition built into the criterion of difference. Thus, in the forthcoming paper I have just mentioned (see footnote 4), I formulated two variants of the criterion, a synchronic variant that applies to simultaneous cases and a diachronic variant that applies to non-simultaneous cases:

Synchronic variant

m and m' are distinct modes of presentation if the following conditions are satisfied:

- (a) it is possible for a subject simultaneously to believe of a given object, thought of under m , that it is F, and to hold a conflicting attitude (e.g. disbelief) toward the thought that results from substituting m' for m ;
- (b) that is possible without *irrationality* on the subject’s part.

Diachronic variant

m and m' are distinct modes of presentation if the following conditions are satisfied:

- (a) it is possible for a subject to believe of a given object, thought of under m , that it is F, and at a later time to hold a conflicting attitude (e.g. disbelief) toward the thought that results from substituting m' for m in the initial thought;
- (b) that is possible without *change of mind* on the subject’s part.

(Recanati, forthcoming, Sect. 5).

Using the diachronic variant, we can easily establish that the *yesterday*-mode of presentation and the *today*-mode of presentation are distinct modes of presentation. It has been observed (by Tyler Burge) that

It is possible to believe what is expressed by ‘Today is Friday’ and (without in any ordinary sense changing one’s mind) doubt what is expressed by ‘Yesterday was Friday,’ even though ‘yesterday’ and ‘today’ (in their different contexts) pick out the same day. (Burge, 1979: p. 402)

By the diachronic variant of the criterion of difference, that epistemic possibility, whose existence can hardly be disputed, shows that ‘today’ and ‘yesterday’ express distinct modes of presentation.

To be sure, as Evans emphasized, that epistemic possibility is ruled out if the subject has ‘kept track of time’. Only a temporally confused subject can, on a certain day, believe what is expressed by ‘Today is Friday’ and the following day, without changing one’s mind, doubt what is expressed by ‘Yesterday was Friday.’ But, as Evans himself pointed out in the footnote I quoted before, the epistemic possibility invoked by the criterion of difference must only be a possibility for *some* rational subject (here, the confused subject); it need not be an epistemic possibility for *every* rational subject. Just as a subject who knows that Hesperus is Phosphorus cannot, without irrationality, ascribe contradictory properties to Venus thought of as ‘Hesperus’ and to Venus thought of as ‘Phosphorus’, a subject who has kept track of time cannot, without changing his mind, doubt what is expressed by ‘Yesterday was Friday’ if the previous day he accepted ‘Today is Friday’.

4 Campbell’s criterion

The criterion of difference only gives us a sufficient condition for *distinctness* among modes of presentation. Another criterion has been put forward, however. Campbell’s criterion, as I will call it, provides a sufficient condition for *identity* among modes of presentation.

There is a well-known distinction between two types of coreference relations between singular terms. Coreference is said to be ‘de facto’ if it is possible for a rational and linguistically competent subject not to realize that the singular terms refer to the same thing. That is what happens when the singular terms are associated with distinct modes of presentation of what turns out to be the same object. By contrast, coreference is ‘de jure’ if it is *not* possible not to realize that the singular terms refer to the same object (Recanati, 2016, 2020, 2021). That is the type of coreference relation that is instantiated, for example, between an anaphoric pronoun and its referential antecedent, as in: ‘Roderick_i was a philosopher. He_i was extremely well-read.’ Anyone who understands the discourse knows that the pronoun and its antecedent corefer (if they refer at all).

When two coreferential singular terms *a* and *b* (construed as tokens which may or may not be of the same type) are coreferential de jure in this manner, it would be irrational to accept that *a* is F and *b* is G while not accepting that a single object is both F and G (existential conjunction). The subject is therefore entitled to embrace that conclusion, *without having to appeal to an additional identity premise such as ‘a = b’*. That inference pattern (*‘a* is F; *b* is G; therefore, something is F and G’) is what

Campbell calls ‘Trading on coreference’ (TC). For example, in the table below (from Recanati, 2012: p. 48), the left-hand column is an instance of TC:

Cicero is bald	Cicero is bald
Cicero is well-read	Tully is well-read
-----	Cicero = Tully
Someone is bald and well-read	-----
	Someone is bald and well-read

In the left-hand column the two occurrences of the name ‘Cicero’ are de jure coreferential, so TC is allowed: the two premises directly support the conclusion. In the right-hand column, the coreference is de facto and an additional premise (‘Cicero = Tully’) is needed to reach the conclusion.

The example I have just given may suggest that, for TC to be licensed, the token singular terms must of the same type. But that is not the case. The first example of coreference de jure I gave, where the relevant singular terms are an anaphoric pronoun and its antecedent, also licenses TC:

Roderick is a philosopher.
 He is extremely well-read.
 Some philosopher is extremely well-read.

According to Campbell what makes TC possible is not type identity but the fact that the two singular terms ‘have the same sense’:

We have to separate two types of case. In the first, we trade directly upon co-reference, moving directly to the conclusion. (...) *It seems to me that we can do this just when the two tokens have the same sense.* In the second type of case, when the tokens do not have the same sense, it would not be legitimate to move directly to the conclusion. (Campbell, 1987 : pp. 275-76; emphasis mine).

This gives rise to Campbell’s criterion—a criterion for sameness of sense:

Campbell’s criterion

If two token singular terms allow ‘trading on coreference’ (TC), they have the same sense.

This criterion seems not to be subject to the limitations which affect the standard (synchronic) version of the criterion of difference. Thus Campbell gives an example in which his criterion applies even though the simultaneity condition is not satisfied:

A man sits in a wasp-filled garden may see a wasp and think ‘That wasp is F’. Some time later, having lost track of the first wasp in the meantime, he may see a wasp and think, ‘That wasp is G’. Even if it is in fact the same wasp that is in question, our subject surely could not infer *directly* from those two judgments that ‘there is something that is both F and G’. The transition would have to be mediated by a further premise, to the effect that it was the same wasp on both occasions. (Campbell, 1987: p. 278)

Now imagine that the subject *has* kept track of the initial wasp, rather than lost track of it:

If (...) one *does* succeed in keeping track of a particular wasp over time, (...) and makes the judgments, ‘That wasp is F’ and ‘That wasp is G’, then one must know *immediately* that it is the same thing that is in question. (Campbell, 1987: p. 285)

In this case TC is possible:

- (1) That wasp is F
- (2) That wasp is G
- (3) Therefore something is both F and G

By Campbell’s criterion, we can therefore conclude that, when the subject keeps track of the initial wasp, he keeps thinking of it in the same way throughout the perceptual episode. In other words, the two occurrences of the demonstrative phrase ‘that wasp’ in (1) and in (2) carry the same sense, in such a case, even though they occur at different times.

5 When the criteria conflict: relativizing the criterion of difference

The subject who has kept track of the wasp does not doubt that the wasp he is seeing is the wasp he has seen a moment before: the identity is *presupposed*, so the subject can unreflectively trade on coreference. By Campbell’s criterion, that establishes that the two successive occurrences of the demonstrative phrase ‘that wasp’ carry the same sense even though they occur at different times. But if we appeal to the criterion of difference, understood according to what I called the ‘absolute’ interpretation (footnote 2), we have to say that the modes of presentation are different because *another subject, or the same subject in a different context*, might doubt the identity of the wasp seen at different times during the episode. So Campbell’s criterion and the criterion of difference thus interpreted give conflicting verdicts, and we can’t simply use them to complement each other. We need to adjudicate between them.

The same conflict arises in synchronic cases. Suppose I hold a banana in my hand while looking at it. I judge:

That banana is cold (based on touch).

That banana is yellow (based on vision).

Since it is obvious to me that the banana I feel in my hand is the banana I see, TC is allowed and I can move directly to the conclusion:

Something is yellow and cold.

This suggests that the two occurrences of the demonstrative phrase ‘that banana’ are associated with the same mode of presentation (by Campbell’s criterion). That mode of presentation presumably is a multi-modal mode of presentation involving both vision and touch. By the criterion of difference, however, the modes of presentation are distinct, because *a rational subject with different epistemic dispositions* might doubt (rather than take for granted) that the seen banana is the same as the touched banana.

The source of the conflict is the following. For the criterion of difference as I have interpreted it so far, what matters are the epistemic dispositions of *some rational subject or other* (‘absolute’ interpretation). Even if we are talking about a situation in which it is taken for granted that $a = b$ (e.g. that Hesperus is Phosphorus, or that the seen banana is the touched banana, or that the initial wasp is the current wasp), the fact that *some rational subject or other* might doubt the identity is sufficient to establish that the modes of presentation are distinct. For example, the fact that some subject might have lost track of the wasp is sufficient to establish that the modes of presentation associated with the two successive occurrences of the phrase ‘that wasp’ are distinct (even for the subject who has kept track). There are distinct modes of presentation (in an absolute sense, i.e. for *every* subject) provided *some* subject can doubt the identity. Campbell’s criterion, however, is primarily concerned with the epistemic dispositions of *a particular subject in a particular context* (‘relativized’ interpretation). For someone who takes it for granted that Hesperus = Phosphorus, or that the seen banana = the touched banana, or that the wasp at t_1 = the wasp at t_2 , the mode of presentation associated with the two singular terms is the same, notwithstanding the fact that *some other subject* might doubt the identity.

I conclude that we can’t both accept Campbell’s criterion and the criterion of difference as initially interpreted: if we accept Campbell’s criterion, as I believe we should, we must re-interpret the criterion of difference so as to substitute the perspective of a situated subject for the perspective of some rational subject or other. In other words, we need to *relativize* the criterion of difference. Such relativization is what I advocated in the forthcoming paper I already alluded to twice:

To say that the subject *could*, at a single time, both assent to ‘ a is F ’ and withhold assent from, or reject, ‘ b is F ’, is to say that doing so (assenting to ‘ a is F ’ while rejecting ‘ b is F ’) would be *compatible with the subject’s actual dispositions*. Now a subject who presupposes identity (as in the TC examples) has no disposition to doubt whether e.g. the seen glass is the touched glass. To be sure, the subject can *come to doubt* that it is the same glass, but only at the cost of *changing* her dispositions. Should such a change occur, the subject would no longer be disposed to trade upon coreference. So doubt is always possible, in an absolute sense (Millikan, 1997: p. 517), but that shows nothing regarding the subject’s actual attitudes and whether she is thinking of the object under one or two distinct modes of presentation. What is relevant to there being a single or

distinct modes of presentation is the possibility of doubt (or of conflicting attitudes) *compatible with the subject's actual dispositions*. (Recanati, forthcoming, section 6)

That change of perspective is also what Campbell himself explicitly advocates:

What matters, in applying these tests, is whether the subject *actually does* make a division in the perceptual information he is receiving. The mere possibility of such a division does not show one is actually in a position to ask whether ‘this glass (perceived now) is identical to that glass (perceived a moment ago)’, for example. (...) The principle being mishandled (...) is surely this: If the subject *actually does* make a division in his perceptual information, so that he can raise the question whether it is the same thing that is in question, then we have two different modes of presentation. (Campbell, 1987: pp. 284-85)

If, as recommended by both Campbell and myself, we focus on the perspective of a particular subject at a particular time, then the question, whether the modes of presentation are distinct, is raised with respect to that particular subject. The answer may be yes for one subject, but no for another subject. If the subject we are concerned with (in Campbell's example) has lost track of the initial wasp, then, even if the subject's thought at t_2 concerns the same wasp as her thought at t_1 , TC is not allowed: an identity premise is necessary to infer the existential conjunction. In such a case, Campbell says, the modes of presentation are distinct (and the coreference is only de facto). If the subject has kept track of the initial wasp, however, the same mode of presentation recurs and TC is allowed.

6 Composite modes of presentation

Consider the banana example once again. The fact that some rational subject might doubt that the seen banana is the same as the touched banana establishes that, for that subject, the visual mode of presentation *that banana_{vision}* is distinct from the haptic mode of presentation *that banana_{touch}*. On the other hand, a subject who unreflectively takes it for granted that the seen banana is the touched banana can trade on coreference and reason as follows:

[TC-banana]

That banana is cold (based on touch).

That banana is yellow (based on vision).

Thus, something is yellow and cold.

This establishes, by Campbell's criterion, that the two occurrences of the phrase ‘that banana’ are associated with the same mode of presentation for that subject. Which mode of presentation is that? It is arguably neither the visual mode of presentation nor the haptic mode of presentation but a multimodal (visuo-tactile) mode of presentation, associated with *both* premises in the above piece of reasoning. That third mode of presentation can be seen as a *composite* mode of presentation resulting from the fusion of the first two but distinct from each of them. On this analysis it is true

that the visual mode of presentation and the haptic mode of presentation are distinct for the subject who does not presuppose the identity, but it is also true that there is a single, multimodal mode of presentation that is instantiated twice in [TC-banana], in conformity to Campbell's criterion.

The same type of analysis involving composite modes of presentation applies, though a little less straightforwardly, to the allegedly diachronic instance of TC which Campbell discusses:

[TC-wasp]

- (1) That wasp is F (*judgment made at t_1*)
- (2) That wasp is G (*judgment made at t_2 , while keeping track of the initial wasp*)
- (3) Thus, something is both F and G

Let us call P1 the perception occurring at t_1 and supporting the judgment in (1), and P2 the perception occurring at t_2 and supporting the judgment in (2). A rational subject could doubt the identity of the wasp seen at t_1 and of the wasp seen at t_2 . For such a subject, the demonstrative phrases respectively occurring in (1) and (2) are associated with distinct perceptual modes of presentation respectively based on P1 and P2. Such a subject would not be disposed to trade upon coreference. But consider a subject who *is* disposed to trade upon coreference, as in [TC-wasp]. Campbell's criterion dictates that, for that subject, the modes of presentation associated with the demonstrative phrases respectively occurring in (1) and (2) must be the same. What is the mode of presentation in question?

It is tempting to say that the relevant mode of presentation is a *dynamic* mode of presentation of the sort postulated by Evans when he claims that the subject who thinks of the current day as 'today' thinks of it under the same mode of presentation the following day when he thinks of it as 'yesterday'. If the subject has kept track of the initial wasp, arguably, the same mode of presentation persists from t_1 to t_2 , and that is why TC is allowed. That is the view Evans and Campbell actually hold: the subject who at t_1 has a thought about a wasp she perceives thinks of the wasp under the same dynamic mode of presentation a moment later (at t_2) when she perceives it again provided she hasn't lost track of it in the meantime.

The notion of a dynamic mode of presentation is important, and I will have more to say about it in the next section; but I don't think we need it to account for TC as it occurs in [TC-Wasp]. The notion we need, I think, is merely that of a composite mode of presentation. The mode of presentation which the subject who trades upon coreference associates with both occurrences of the demonstrative phrase 'that wasp' in [TC-wasp] is such a composite mode of presentation, based on both the perception P2 of the wasp taking place at t_2 , and on the memory M of the wasp seen at t_1 . That memory is the trace left by P1 at t_2 . The subject takes it for granted—presupposes—that the wasp currently seen (at t_2) is the wasp seen a moment before (at t_1) and remembered. The way the subject thinks of that wasp therefore blends elements derived from the first encounter (at t_1) and retained in memory together with elements derived from the current perception (at t_2). The key point is that in [TC-wasp] *both* occurrences

of the demonstrative phrase ‘that wasp’ are associated with that composite mode of presentation. That is what makes TC possible.

This analysis raises a *prima facie* objection. By Campbell’s criterion, the demonstrative phrases respectively occurring in premises (1) and (2) of [TC-wasp] must be associated with the same mode of presentation. I have just said that the mode of presentation in question is a composite mode of presentation based on P2 and M, where M is the memory left by P1 at t_2 . But premise (1) is supposed to be a judgment *made at t_1* on the basis of the perception P1 occurring then. So the mode of presentation associated with the phrase ‘that wasp’ in the judgment occurring at t_1 *cannot be* a composite mode of presentation involving P2 and M, since both P2 and M only come into the picture at t_2 .

To dispose of that objection, we have to realize that [TC-wasp] is a piece of reasoning which, like all pieces of reasoning, must be construed as taking place at a particular time (Recanati, 2016: p. 77). The time in question is the time when, on the basis of the premises, the subject derives the conclusion. In [TC-wasp], the subject can only derive the conclusion at t_2 since, before t_2 , the second premise was missing. So the reasoning takes place at t_2 , and involves two premises. The first premise tokened at t_2 is the judgment initially made at t_1 on the basis of P1 *and preserved through memory*. The second premise tokened at t_2 is the judgment made at t_2 on the basis of P2. The perceptual judgment made at t_1 and the reasoning subsequently taking place at t_2 can be represented as follows:

- That wasp is F (*judgment made at t_1 on the basis of P1*)
- That wasp is/was F (*updated version, at t_2 , of the judgment initially made at t_1*)
- That wasp is G (*judgment made at t_2 on the basis of P2*)
- Thus something that is/was F is G

Since at t_2 the subject presupposes that the wasp perceived is the wasp remembered, the way the wasp is thought of at t_2 is simultaneously based on the current perception P2 and on the memory M left by P1. That composite mode of presentation is deployed in both premises tokened at t_2 . So there is a difference between the subject’s thought at t_1 , which involves a mode of presentation of the wasp based on P1, and the thought that serves as first premise in the reasoning taking place at t_2 . The first premise of the reasoning is *what the subject has retained, at t_2 , of the initial judgment made at t_1* . As I put in *Mental Files in Flux*, where I discuss these matters at length,

What the subject has retained is not the initial thought itself, but a variant that results from updating the initial thought (the thought held at t_1). (Recanati, 2016: p 77).

The difference between the initial thought (at t_1) and the updated thought (at t_2) is a difference in the way the wasp is thought about: at t_1 it is thought of under a perceptual mode of presentation based on P1; at t_2 , however, it is thought of under a composite mode of presentation based on M (the memory of P1) and P2 simultaneously.

7 Dynamic modes of presentation

As I have just shown, we do not need the notion of a dynamic mode of presentation persisting through time to deal with [TC-wasp], given the ultimately synchronic character of the inference at stake (which inference takes place at t_2). Still, the notion of a dynamic mode of presentation seems to be what we need to account for the relation between a perceptual mode of presentation instantiated at a given time t_1 and the corresponding memory-based (or memory + perception-based) mode of presentation occurring at a later time t_2 .

There are two types of case to consider: the cases in which, in the interval from t_1 to t_2 , the subject ‘keeps track’, and the cases in which the subject doesn’t. The former are the cases in which the modes of presentation instantiated at t_1 and at t_2 appear to constitute a single dynamic mode of presentation persisting through time.

As we have seen, the diachronic version of the criterion of difference establishes that ‘today’ and ‘yesterday’ are associated with distinct modes of presentation for a subject who has lost track of time. Such a subject can, as Burge puts it, ‘believe what is expressed by *Today is Friday* and (without in any ordinary sense changing one’s mind) doubt what is expressed by *Yesterday was Friday*, even though ‘yesterday’ and ‘today’ (in their different contexts) pick out the same day’ (Burge, 1979: p. 402). But no such verdict can be reached for a subject who has kept track of time: such a subject *cannot*, without changing their mind, doubt what is expressed by ‘Yesterday was Friday’ if the previous day they accepted ‘Today is Friday’. This suggests that there is a single, dynamic mode of presentation of Friday that persists from Friday to Saturday when the subject keeps track of time. That is indeed Evans’ conclusion. Likewise, for Campbell, a subject who keeps track of the wasp from t_1 to t_2 arguably thinks of the wasp under the same dynamic mode of presentation throughout. If Evans and Campbell are right, there are dynamic modes of presentation that persist through time despite what Evans describes as ‘local’ or ‘lower-level’ differences between the way the subject thinks of the object at t_1 and the way she thinks of it at t_2 . On this picture, the difference between the various ‘epistemically rewarding relations’⁵ to the entity thought about count as lower-level differences which do not affect the (numerical) identity of the dynamic mode of presentation.

Assuming they exist, what are dynamic modes of presentation? Are they a variety of composite modes of presentation? I don’t think they are, but they are interestingly similar to composite modes of presentation. Both composite and dynamic modes of presentation are ‘complex’ modes of presentation, based on several epistemically rewarding relations. A composite mode of presentation is based on several epistemically rewarding relations to the reference *simultaneously*. The subject presupposes that the various relations in question are relations to one and the same entity. A dynamic mode of presentation is based on several epistemically rewarding relations to the reference *successively*. As time unfolds, the subject presupposes that he keeps tracking the same entity, despite changes in the contextual relations to that entity. Thus, the subject who has kept track of the wasp and thinks of it at t_2 thinks of it under a composite

⁵ Perception, memory, testimony count as epistemically rewarding relations, as do indexical relations such as the relation you hold to a place when you occupy that place, or the relation in which you stand to an individual when you are that individual. See Recanati (2012, 2016).

mode of presentation that embodies the presupposition that the wasp seen at t_2 is the wasp seen at t_1 and remembered. That composite mode of presentation, based on both the memory M of the wasp seen at t_1 and the perception P2 of the wasp seen at t_2 , is clearly distinct from the mode of presentation *exclusively based on P1* through which the subject initially thought of the wasp at t_1 ; yet, owing to the presupposition, the perceptual mode of presentation instantiated at t_1 retrospectively counts as the initial stage of a dynamic mode of presentation that persists at t_2 when the subject thinks of the wasp under the composite mode of presentation.

8 Anchored and unanchored memories

To understand the contrast between the cases in which the subject ‘keeps track’ and operates with a single, dynamic mode of presentation, and the cases in which the subject ‘loses track’ and operates with distinct modes of presentation, we can usefully appeal to the mental file framework (Recanati, 2012, 2016).

Think of the wasp example. At t_1 the subject perceptually encounters a wasp (P1), and thinks of it under a mode of presentation based on P1. In the mental file framework the mode of presentation is viewed as a mental file which the subject opens at t_1 , and in which she stores the information gained through P1. At this point there are two options: the subject may either keep track of the wasp, or lose track of it. If the subject keeps track, the same mental file will come to host new information gained via the subject’s contextually changing relation to the wasp. For example, at t_1 the subject observes that the wasp is F, and at t_2 , seeing it again, she observes that it is G. The mental file stores both items of information (and TC is possible). The successive perceptual acts P1 and P2 are distinct, but the mental file remains numerically the same, and this embodies the subject’s presupposition that one and the same entity is being tracked throughout. Note that, at t_2 , the subject does not merely *perceive* the wasp, as she did at t_1 ; she also *remembers* the wasp seen at t_1 , so the relation to the wasp at t_2 involves both perception (P2) and memory (M). In other words, the same mental file, based on P1 at t_1 , is based on M + P2 at t_2 , yet it remains numerically the same mental file. That is why I spoke of a ‘contextually changing relation’ to the wasp. The fact that the mental file remains the same despite the relational change in question corresponds to the idea of a dynamic mode of presentation persisting through lower-level changes.

If the subject loses track of the wasp, then when she encounters it again at t_2 she will *not* store the information gained through P2 in that same mental file, but will open a new mental file based on P2. File duplication here embodies the *lack* of the presupposition of identity corresponding to the continued deployment of the same mental file. The subject may well conjecture that the two wasps are (probably) the same: unless the identity is presupposed and unreflectively taken for granted, the second perceptual encounter will give rise to a new file-opening event.

Let us now turn to the question: when (and why) is a mode of presentation based on a memory M the same dynamic mode of presentation as the mode of presentation based on the perception P from which the memory derives? A tentative answer in terms of mental files can be offered. The perception P launches a mental file which stores information gained through the perceptual relation. When the object gets out of

sight, the thinker's relation to the reference evolves: the subject remembers it instead of perceiving it. As long as the memory is 'anchored', i.e. *associated with the body of information initially derived from the perception*, this guarantees the persistence of the (dynamic) mode of presentation. Sometimes, however, an episodic memory occurs to the subject 'unanchored', i.e. *dissociated from the mental file* launched by the perceptual event from which the memory derives.⁶ If, in such conditions, the subject wants to think about the reference of the free-floating memory, she has to open *a new mental file for whatever it is she is remembering*. For example, suppose the thinker has an isolated memory about a long-haired student with an accent, without having any idea who the student in question was, where and when she met him, etc. She will then think of him as 'that student', where this corresponds to a semi-descriptive mode of presentation based on the unanchored memory: 'that student' here means *the student from which this memory derives*. If, after a memory search, the subject eventually remembers who the student was, she will re-connect the memory with the mental file initially launched by the perceptual event. The memory will be (re-)anchored, and that will enable the subject to get rid of the new, semi-descriptive mental file and think of the student through the old file.

The answer to the question, then, is this. A mode of presentation based on an anchored memory is the same dynamic mode of presentation as the mode of presentation based on the perception from which the memory derives. (That is the normal case.) A mode of presentation based on an unanchored memory is distinct from the mode of presentation based on the perception from which the memory derives. What guarantees the unity of a dynamic mode of presentation despite the lower-level differences constituted by the changing relations to the reference is the body of information (the mental file) which is normally preserved and transmitted from perception to memory.

A referee has offered an alternative construal of the case I have just discussed. Instead of contrasting the two types of memories in terms of whether or not they are associated with the mental file initiated by the perception from which the memory derives, the referee says we should construe *both* types of memory as 'anchored', that is, as associated with a mental file stemming from the perceptual event the memory originates from. What distinguishes the allegedly 'unanchored' memories is the fact that 'the thinker's recollections have been fractured, i.e. the thinker recollects some things but not others'. For example, the thinker recollects that the remembered individual was a student, had an accent, had long hair, but not who he was nor where she met him etc. But then, the referee points out,

⁶ Speaking of 'the' perceptual event from which the memory derives presupposes that a memory has a unique perceptual antecedent. As the lead guest editor of this issue pointed out, that presupposition has been questioned (Debus 2007, Liefke forthcoming 2021, Openshaw 2022), on the grounds that not all experiential remembering is 'episodic' and concerns a unique, specific event: some memory representations (in particular, memory representations of individuals) are built up by repeated exposures over time. Here, however, I am only concerned with genuinely episodic memories. (According to Perrin et al. (2020), episodic memories are distinguished by a specific phenomenological feature which they call 'the feeling of singularity'. As they put it, 'episodic memories (...) typically represent singular events (...). So, it seems important to include singularity among the components of the content of episodic memory. The content of many episodic memories is formed of an imagistic content plus a certain phenomenology. (...) Our suggestion is that the singularity feature of remembered events can be conveyed by phenomenology' (Perrin et al., 2020: p. 4).).

If the thinker recollects some things about the student but not others, it means that she presently has two memory files M1 and M2, both anchored in her past perception P, though one of the memory files is *more anchored* because most of the information from P is there and only little information is in the other.

On this construal there is a continuum of cases (some memories are more anchored than others) rather than a dichotomy between anchored and unanchored memories; so we can't use the dichotomy to answer the question: when is a mode of presentation based on a memory M the same as the mode of presentation based on the perception P from which the memory derives, and when is it not?

But I want to maintain that the dichotomy exists, and I propose to cash it out in phenomenological terms. A free-floating (unanchored) memory comes with a 'metacognitive feeling', akin to that involved in the famous tip-of-the-tongue phenomenon.⁷ That feeling, which I take to be characteristic of unanchored memories, is that of *having lost access to the associated mental file*. That feeling triggers, on the part of the thinker, a search which gives rise to questions such as: 'who is/was that student?' Since the mental file launched by the perceptual event from which the memory derives is inaccessible, it cannot be deployed to think about the student in framing the question. Rather, the subject thinks about the student via a special-purpose mental file which, as Evans puts it, individuates its object 'by its role in the operations of the informational system' (Evans, 1982: p. 128): the object of inquiry is thought of as *that which the memory is a memory of*. This semi-descriptive mode of presentation corresponds to a temporary mental file which is bound to disappear as soon as the missing mental file is retrieved (assuming it ever is).

This is not to deny that there may be cases of confusion in which, as the referee suggests, a perceptual event gives rise to *two distinct memory files, both of which inherit (part of) the content of the perceptual file*.⁸ Such cases would be cases of 'fission', where the successor to the mental file initially launched by the perceptual event is not a single memory file but a pair of files, as if there had been two distinct events.⁹ But this is not the phenomenon I am talking about in this section.

⁷ On metacognitive feelings, see e.g. Koriati (2000), (2007), Proust (2007), (2013), de Sousa (2009), Dokic (2012).

⁸ The two memory files M1 and M2 evoked by the referee in reinterpreting my 'student' example are such that only one of them is consciously accessible; while the case of confusion I am now evoking would be a case in which the two distinct memory files at stake are both consciously accessible.

⁹ The possibility of such cases involving fission shows that dynamic 'sameness' is not identity in the strict, Leibnizian sense (Recanati 2016: 84–86): the twin memory files which result from 'splitting' the initial file launched by the perceptual event cannot both be identical to that initial file, since they are distinct from each other. Leibnizian identity is transitive but, as in the case of personal identity (see Prosser 2019 for the analogy), the relation of dynamic continuity seems not to be. (We can restore transitivity, hence a strict reading of 'same dynamic mode of presentation', by explicitly ruling out cases of fission.).

9 Conclusion: revisiting the criterion of difference

In this paper I have suggested a couple of revisions to the standard criterion of difference for modes of presentation attributed to Frege. First, we need to broaden the scope of the criterion so that not merely the thoughts of a given subject at a given time may or may not involve the same way of thinking of some object, but also the thoughts of a subject at different times. To that effect, borrowing from earlier work of mine, I put forward a dynamic variant of the criterion of difference:

m and *m'* are distinct modes of presentation if the following conditions are satisfied:

- it is possible for a subject to believe of a given object, thought of under *m*, that it is *F*, and at a later time to hold a conflicting attitude (e.g. disbelief) toward the thought that results from substituting *m'* for *m* in the initial thought;
- that is possible without *change of mind* on the subject's part.

Using that variant, we can establish that the *yesterday*-mode of presentation and the *today*-mode of presentation are distinct modes of presentation, thanks to Burge's observation that.

It is possible to believe what is expressed by 'Today is Friday' and (without in any ordinary sense changing one's mind) doubt what is expressed by 'Yesterday was Friday,' even though 'yesterday' and 'today' (in their different contexts) pick out the same day. (Burge, 1979: p. 402)

To be sure, only a temporally confused subject can, on a certain day, believe what is expressed by 'Today is Friday' and the following day, without changing their mind, doubt what is expressed by 'Yesterday was Friday.' if the subject has 'kept track of time' that epistemic possibility is ruled out. But this does not matter if one interprets the criterion of difference in the absolute way, as is standardly done. According to the absolute interpretation, the epistemic possibility invoked by the criterion of difference must only be a possibility for *some* rational subject (here, the confused subject); it need not be an epistemic possibility for *every* rational subject, not even for the particular subject whose thought is undergoing analysis. Just as a subject who knows that Hesperus is Phosphorus cannot, without irrationality, ascribe contradictory properties to Venus thought of as 'Hesperus' and to Venus thought of as 'Phosphorus', a subject who has kept track of time cannot, without changing their mind, doubt what is expressed by 'Yesterday was Friday' if the previous day they accepted 'Today is Friday'. Still the fact that some rational subject might ascribe contradictory properties in this manner suffices to establish that the modes of presentation are different (even for the enlightened subject we are considering).

The second revision I advocated consists in giving up the absolute interpretation in favour of a different interpretation of the criterion of difference (one initially put forward by John Campbell): the 'relativized' interpretation. According to that interpretation, the epistemic possibility invoked by the criterion of difference must be *compatible with the actual dispositions of the situated subject we are considering*. The fact that the possibility evoked by Burge is ruled out if the subject has kept track

of time means that, for *that* subject (in contrast to the temporally confused subject), the modes of presentation associated with ‘today’ and ‘yesterday’ *are* the same.

In this framework, a subject who knows that $a = b$ (e.g. that Hesperus is Phosphorus, or that the seen banana is the touched banana) thinks of the referent under a composite mode of presentation, based on several epistemically rewarding relations to the reference simultaneously. The *Hesperus/Phosphorus* mode of presentation is such a composite mode of presentation, as is the visuo-tactile mode of presentation of the banana. These complex modes of presentation are distinct from ‘simple’ modes of presentation such as the *Hesperus* and the *Phosphorus* modes of presentation, or the visual mode of presentation and the haptic mode of presentation in the banana case.

By adopting the relativized interpretation of the criterion of difference, and the distinction between simple and complex modes of presentation, we can make sense of Evans’ notion of a dynamic mode of presentation that persists through time despite lower-level changes (Evans, 1981, 1985). A dynamic mode of presentation is a complex mode of presentation based on several epistemically rewarding relations to the reference successively. I have shown how this idea can be cashed out in the mental file framework, and how, in that framework, we can provide a straightforward answer to the question: when is a mode of presentation based on a memory *M* the same as the mode of presentation based on the perception *P* from which the memory derives? The answer appeals to the distinction between anchored and unanchored memories.

In closing, I would like to mention the possibility of retaining the standard (‘absolute’) interpretation *alongside* the relativized interpretation of the criterion of difference, instead of construing them as exclusive of each other. (See Recanati, 2016: pp. xiv–xvii for an early suggestion to that effect.) First, however, we need to distinguish between modes of presentation construed as types, as tokens, and as occurrences.

Token modes of presentation are the modes of presentation actually deployed in the thought of a particular, situated subject. The same token mode of presentation may be deployed several times by the subject in thinking of a given object, as in the instances of coreference de jure I mentioned earlier. In a train of thought such as that expressed by the anaphora-involving discourse ‘Roderick is *F*; he is *G*’, there are two occurrences of the same (token) mode of presentation, associated both with the antecedent name and with the anaphoric pronoun. The relativized version of the criterion of difference applies to token modes of presentation: two occurrences count as distinct token modes of presentation, rather than as occurrences of the same token mode of presentation, if the subject in whose thought they occur could, without changing her actual epistemic dispositions (and, in particular, her presuppositions), ascribe contradictory properties to the object respectively thought of under these modes of presentation.

Now, token modes of presentation are tokens of a certain type; for example, the token mode of presentation deployed twice by the subject in [TC-banana] is a token of a composite type, based on both vision and touch. When it comes to types (as opposed to tokens) the criterion of difference applies in its standard, unrelativized interpretation. Two modes of presentation *m* and *m*’ count as distinct types if *some subject or other* could (without irrationality, or without changing her mind in the diachronic cases) ascribe contradictory properties to some object respectively thought of under tokens of these modes of presentation. In this framework we can maintain that e.g. the *today*-mode of presentation and the *yesterday*-mode of presentation are

two distinct types of mode of presentation, while acknowledging that, in the mind of a subject who has kept track of time, the same token mode of presentation is expressed by the subject's use of 'today' on a certain day and by his use of 'yesterday' on the following day.

Acknowledgments I am indebted to John Campbell, Michael Murez, James Openshaw, Matheus Valente, Jean-Baptiste Rauzy, and two reviewers for their helpful comments.

Declarations

Conflict of interest N/a.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Burge, T. (1979). Sinning against Frege. *Philosophical Review*, 88, 398–432.
- Campbell, J. (1987). Is sense transparent? *Proceedings of the Aristotelian Society*, 88, 273–292.
- Campbell, J. (2002). *Reference and Consciousness*. Clarendon Press.
- De Sousa, R. (2009). Epistemic feelings. *Mind and Matter*, 7, 139–161.
- Debus, D. (2007). Perspectives on the past: a study of the spatial perspectival characteristics of recollective memories. *Mind and Language*, 22, 173–206.
- Dickie, I., & Rattan, G. (2010). Sense, communication, and rational engagement. *Dialectica*, 64, 131–151.
- Dokic, J. (2012). Seeds of Self-Knowledge: Noetic Feelings and Metacognition. In M. J. Beran, J. Brandl, J. Perner, & J. Proust (Eds.), *Foundations of Metacognition* (pp. 302–321). Oxford University Press.
- Evans, G. (1981/1985) Understanding Demonstratives. In H. Parret and J. Bouveresse (eds.) *Meaning and Understanding*, 280–303. Berlin: De Gruyter, 1981. Reprinted in Evans (1985), 291–321.
- Evans, G. (1982). The varieties of reference. In J. McDowell (Ed.), *Oxford*. Clarendon Press.
- Evans, G. (1985). *Collected papers*. Clarendon Press.
- Fodor, J. (1994). *The elm and the expert*. MIT Press/Bradford Books.
- Frege, G. (1984). Collected papers on mathematics, logic, and philosophy. In B. McGuinness (Ed.), *Oxford*. Blackwell.
- Koriat, A. (2000). The feeling of knowing: some metatheoretical implications for consciousness and control. *Consciousness and Cognition*, 9, 149–171.
- Koriat, A. (2007). Metacognition and consciousness. In P. D. Zelazo, M. Moscovitch, & E. Thompson (Eds.), *The Cambridge handbook of consciousness* (pp. 289–325). Cambridge University Press.
- Liefke, K. (2021). (forthcoming) Remembering Individuals and Remembering Scenes. In: *JSAI International Symposium on Artificial Intelligence*
- Millikan, R. (1997). Images of identity. In search of modes of presentation. *Mind*, 106, 499–519.
- Ninan, D. (2015). On Recanati's *Mental Files*. *Inquiry*, 58, 368–377.
- Openshaw, J. (2022). Remembering objects. *Philosophers' Imprint*. <https://doi.org/10.3998/phimp.699>
- Perrin, D., Michaelian, K., & Sant'Anna, A. (2020). The phenomenology of remembering is an epistemic feeling. *Frontiers in Psychology*, 11, 508853.
- Prosser, S. (2019). Shared modes of presentation. *Mind and Language*, 34, 465–482.
- Proust, J. (2007). Metacognition and metarepresentation: Is a self-directed theory of mind a precondition for metacognition? *Synthese*, 159, 271–295.

- Proust, J. (2013). *The philosophy of metacognition. mental agency and self-awareness*. Oxford University Press.
- Recanati, F. (2012). *Mental files*. Oxford University Press.
- Recanati, F. (2016). *Mental files in flux*. Oxford University Press.
- Recanati, F. (2020). Coreference *De Jure*. In R. Goodman, J. Genone, & N. Kroll (Eds.), *Singular thoughts and mental files* (pp. 161–186). Oxford University Press.
- Recanati, F. (2021). Transparent coreference. *Topoi*, 40, 107–115.
- Recanati, F. (forthcoming) Sameness of Mode of Presentation. In J. Bermudez, M. Valente, & V. Verdejo (Eds.) *Sharing Thoughts*. Oxford: Oxford University Press
- Schiffer, S. (1978). The basis of reference. *Erkenntnis*, 13, 171–206.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.