How pretence can really be metarepresentational

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Abstract   Our lives are commonly involved with fictionality, an activity that adults share with children. After providing a brief reconstruction of the most important cognitive theories on pretence, we will argue that pretence has to do with meta-representations, albeit in a rather weakened sense. In our view, pretending entails being aware that a certain representation does not fit in the very same representational model as another representation. This is a minimal metarepresentationalism, for normally metarepresentationalism on pretense claims that pretending is or entails representing a representation *qua* representation, i.e. as conceptualised as a representation, in its very content. In the final section we will try to draw some consequences of our view as to the debate in cognitive science on mindreading. Given this minimal metarepresentationalism, the two main positions on mindreading, the 'theory theory' and the 'simulation theory', turn out to be closer than one would have originally supposed.

Keywords   Pretence · Metarepresentation · Simulation · Simulation theory · Theory theory

1 Introduction

Our lives are commonly involved with fictionality. We are engaging in fiction whenever we make believe that something is the case. Its complexity

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notwithstanding, adult make-believe shares its core features with infantile pretence, as Walton (1990) has authoritatively shown. At least since Piaget (1962) and Vygotsky (1967), many psychological researches have in fact pointed out that pretence emerges early in childhood, roughly between 18 and 24 months of age. Moreover, from the onset infantile pretence is a quite articulated activity displaying the kind of complexity that adult make-believe possesses. Children play at being someone else (Ann pretends to be a princess) or at having different features (Ann, who is a blond girl, pretends to have brown hair). They also pretend that objects are either different things (a banana is taken to be a telephone) or have different features from those they actually have (a doll's face is taken to be dirty when it is not); but they also pretend that there are objects or individuals that in actual fact do not exist (Ann pretends there is a train in the room).

In what follows, we will first provide a brief rational reconstruction of the most important cognitive theories on pretence, in order to show subsequently that pretence has to do with metarepresentation, albeit in a rather weakened, or minimal, sense. First of all, following Perner (1991) we use an *interpreted* notion of representation; that is, a representation is individuated also in terms of its content. This means that there is a close similarilty between our notion of a representation and the notion of a thought, as is traditionally mobilised in philosophy of mind. In this respect, a *singular* representation is, exactly like a singular thought in the philosophical tradition stemming out of McDowell (1982), a representation such that the items constituting the 'subject' part of its content are objectual rather than conceptual: a thought as well as a representation to the effect that o is F literally contains the object o, rather than a concept allegedly singling out it, in its content. Given that a metarepresentation is a representation of a representation, a *singular* metarepresentation is a second-order representation whose content is *inter alia* constituted by the first-order representation it is about rather than by the concept of that representation: it is a representation to the effect that *another representation* is F, whose content is precisely constituted (*inter alia*) by this other representation (rather than by a concept singling out it). This theoretical machinery enables us to claim that pretending entails singular metarepresentations, that is, second-order representations whose contents have a first-order representation among their constituents, namely, the representation the relevant second-order representation is about. In a nutshell, pretending entails being aware that *a certain representation* does not fit in the very same representational model as *another representation*. This is a minimal metarepresentationalism, for normally (as we will see from our reconstruction) metarepresentationalism on pretense claims that pretending is or entails representing a representation *qua* representation, that is, as *conceptualised* as a representation in its very content, which is therefore *general* and not singular. Finally, from this minimal metarepresentationalism on pretence we will try to draw some consequences as to the debate in cognitive science on mindreading. As we will see, given this minimal metarepresentationalism, the two main positions on mindreading, the 'theory theory' and the 'simulation theory', are closer than one would have originally supposed.

2 From decoupling to multiple models

In pretence, a world different from the real one arises through imagination: the child becomes a dog, a banana becomes a telephone, and so on. In principle, it could be the case that the pretending child really believes (s)he is a dog. If this were so, (s)he would pretend by building a single first-order representation of a (fictional) world in which (s)he is a dog. According to Leslie (1987), however, this theoretical possibility misleadingly conflates make-believe and error. The pretending child is not making a mistake: (s)he knows that (s)he is not a dog, for example because (s)he does not eat dog food or bones. Or again, when playing with mud (s)he pretends to make a cake, (s)he actually refrains from eating it. Thus, it seems that not just one, but two representations of the world are involved. One presents the fictional situation (in which the child is a dog or the cake is made of chocolate); the second presents the actual situation, in which dog-food is dog-food and the cake is made of mud.

But having to handle two representations at the same time engenders the problem of *representational abuse*. Take Leslie's favourite example: a child playing with his mother pretends that a banana is a telephone. In the framework we have outlined, the child has to handle two representations. The symbolic item "banana" is now referentially linked to an unusual class of objects, telephones. In the meanwhile, the same symbolic item "banana" is as usual linked to bananas. If we took these representations at their face value, the word "banana" would get two meanings, thus engendering a representational abuse (Leslie 1987:415). Moreover, the problem would multiply as the child grows up and starts making-as-if, for example, a banana is a sword, a gun or a magic wand. The lexicon would become more and more instable and inaccurate with age.

Leslie's solution (ibid.) is to suppose that the fictional meaning is somehow "decoupled": there has to be a way to mentally tag the non-literal reference. Leslie postulates the existence of a cognitive mechanism, the decoupler, which develops around 18 months. The decoupler takes a primary representation as input and quarantines it, preventing the cognitive system from committing an informational abuse. For example, if the child mobilises the primary representation to the effect that this is a banana, the decoupler quarantines it by putting it into quotes: (Mummy pretends that) "this is a banana". So, in point of fact, the activity of the decoupler amounts to mobilising two different representational models, one of which represents the literal reference and the other the non-literal reference.

The need to exploit representations belonging to different models, one of which is quarantined, is appreciated by other authors interested in pretence—cf. (Perner 1991; Jarrolds et al. 1994; Nichols and Stich 2003). Perner (1991) in fact agrees that there has to be a way of distinguishing pretend-play from error as well as of avoiding representational abuse. In order to account for this, he maintains that one has to see the child as being able to build multiple representational models, a reality model and a model for imaginary situations (the pretend model), and to decouple the fictional representation by putting it in the pretend model. Likewise, for Nichols and Stich what the decoupler does is to allow the child's computational process to run in a different epistemic space, a different model. Provided that it is insulated from the

model of reality, no other more complex process is involved. Since the two models are epistemically separated, their being internally coherent is according to these authors sufficient for the problem of representational abuse to be ruled out.

For Perner (1991), the capacity to mobilise multiple models is one of the most important developmental steps, allowing children to represent noncurrent situations, such as past, desired or fictional situations. Multiple models also enable one to understand media such as pictures, drawings and maps. According to Deloache and Burns (1994:106), the understanding of the twofold nature of public representations (which are both objects and representations of objects) precisely requires that *distinct* mental representations are entertained; that is, a representation of the picture *qua* material object among others (that merely has the capacity of representing another object), as well as a representation of this latter object. Thus, not only that understanding will scaffold the later children's ability to further understand the representational nature of private representations (i.e. mental representations), but it also prompts the mobilisation of distinct representational models which allegedly grounds pretend-play. For the role of public symbolic systems in understanding the notion of representation see also Deloache (2004).

Some authors refer to the 'multiple models' approach as the 'behaving-as-if' theories. Rakoczy et al. (2004) quote Nichols and Stich (2003:37): conceptually speaking, pretence is "acting-as-if in a way that would be appropriate if *p* (the counterfactual situation) were the case." Let us look at the so-called 'behaving-as-if' theories of pretence in more detail. In the view of authors such as Harris (1994), Lillard (1994), Nichols and Stich (2003), in early pretence children behave-as-if the fictional, counterfactual situation were the case. As Lillard et al. (2000) show, they overattribute the ability to pretend to inanimate, mindless entities and do not conceptualise what they do as an intentional, voluntary activity. In Lillard's (1993) experiment, children aged 4 and 5 years are told that Moe, a troll from the Land of Trolls, (a) hops around like a rabbit and (b) does not known what a rabbit is. When asked about Moe's attitude, they tend to say that Moe is pretending to be a rabbit, not taking into consideration its ignorance of rabbits. They seem to base their judgments merely on the action being performed by Moe (who is engaged in the same kind of action one would be engaged in when pretending). Other 4-year-old children tested by Lillard (1998) perform no better. They are told that the doll Chris (a) is digging and (b) does not want (or does not try) to be like a dog. Children tend to say that Chris is pretending to be a dog.

Other authors evidenced a more subtle understanding of pretence, still within an unintentional perspective. In their important study, Harris et al. (1994) looked for children's ability to integrate successive pretend actions into a coherent causal-inferential sequence. In one experiment, children ranging from 28 to 38 months saw a puppet pretending to pour milk from an empty milk container into a matchbox. Then the puppet tipped the content of the matchbox over a toy horse. The children accurately identified which substance had been poured on the toy animal.

Given this quasi-behaviouristic flavour of the 'behaving-as-if'- theories, it is not clear whether 'behaving-as-if'- theories is just another label for what we have called here the 'multiple model'- approach. At any rate, a merit of the 'multiple models'- approach is that the claim according to which, from the cognitive point of view, to

pretend means to activate a representational model where representations of a fictional world are stored—a model which is different from the model where representations of the real world are stored—gives rise[1] to a thesis recently developed in philosophy of language to deal with fictionality in general, not only infantile pretence.

In this thesis—see for example, Recanati (2000), Voltolini (2006)—the fictionality of a text (*mutatis mutandis*, the fictionality of an icon or of a mental representation) lies in the fact that the sentences that text contains are interpreted in a *fictional* context, namely a context whose world parameter is constituted by a *fictional* world, the world in which the story is set.[2] In other words, once any of those sentences is paired with one such fictional context, that sentence is given *fictional* truth-conditions. If things in the fictional world in question stand as the sentence fictionally says they stand (by having such fictional truth-conditions), the sentence will moreover be *fictionally* true, true with respect to the world of the relevant story. Yet the text no longer counts as fictional once its very same sentences are interpreted in a *real* context, namely a context whose world parameter is constituted by the *real* world. In other words, once any of those sentences is paired with a real context, the sentence in question may well be given *real* truth-conditions. If things in the real world in question stand as the sentence says they stand (by having such real truth-conditions), the sentence will moreover be *really* true, true at the real world. In some cases, the fictional and the real truth-conditions of a sentence, as well as the fictional and the real truth-values of a sentence, coincide; in other cases, at least those truth-values differ; and in still other cases, also those truth-conditions differ.

Take the sentence "Napoleon is arrogant", which interpreted in the fictional context whose world parameter is the world of Tolstoj's *War and Peace* is fictionally true iff in that world our flesh-and-blood Napoleon is arrogant; since this is the case, that sentence is fictionally true. Yet when interpreted in a real context, that sentence is again true, this time really true, iff in the real world our flesh-and-blood Napoleon is arrogant; since this is the case, that sentence is also really true. Now, take the sentence "Charlemagne is imbecile": even though it has the same truth-conditions both when interpreted in the fictional context whose world parameter is the world of Luigi Pulci's *Morgante maggiore* and when interpreted in a real context, it is true at the world of the former context yet false at the real world. Finally, take the sentence "Uriah Heep is arrogant". When interpreted in the fictional context whose world parameter is the world of Dickens' *David*

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[1] We limit ourselves to saying that Perner's distinction between different representational models gives rise to the philosophical treatment of fictionality in question for, according to Recanati (2000), linguistic representations of a fictional reality undergo a contextual meaning shift—expressions within those representations are given meaning in a fictional, rather than in a real, context—whereas for Perner no such shift occurs (1991:55). In his view, the pretend model arises from the fact that a certain representation originally belonging to the real model yet which turns out to be false when evaluated with respect to the real world, is simply displaced into a new model in which it is true with respect to the fictional world of that model (1991:27–28, 30–31).

[2] In point of fact, it is controversial whether the world in which the story is set really shrinks to just *one* world or whether there are many worlds which can be taken as such worlds. For the discussion on this point, see Lewis (1978). It is, however, irrelevant for our purposes.

Copperfield, that sentence is fictionally true iff in that world the individual there named "Uriah Heep" is arrogant. Yet when interpreted in a real context, since in such a context the name "Uriah Heep" does not primarily refer to anybody, the sentence primarily has no real truth-conditions.[3]

All in all, therefore, the 'multiple models'- approach to pretence can account both for the fact that we take sentences involving fiction to be false, or truth-valueless (when they are taken as representations evaluated with respect to the real world), and for the fact that we take them to be true (when they are taken as representations evaluated with respect to the world in which the story is set). That is, even adult forms of pretence such those mobilised by story-telling practices involving fictional sentences can be appealed to by a 'multiple models'- approach, which limits itself to appealing to simple representations even though displayed precisely in distinct representational models.

3 Strong and weak metarepresentational accounts of pretence

Rakoczy et al. (2004) criticise the 'behaving-as-if' approaches. First of all, they point out the difficulty of Lillard's experiments, which require complex linguistic ability and are based on children's explicit answers. As a consequence, less-demanding non-verbal tasks could reveal a more subtle understanding of pretence even in younger subjects. In particular, they could reveal children's ability to distinguish between different as-if actions, such as pretending, trying and/or mistakenly doing X.

Rakoczy and Tomasello (2006) examined children of 22 and 27 months of age. During the warming-up session some objects were introduced in the experimental setting, in order to give the child the possibility to perform both creative pretence and trying during the later test phase, so as to avoid the risk of mere behavioural imitation of the experimenter's actions. The object introduced were a teddy bear, a bowl with a fork, and a wrench, which the experimenter explicitly invited the child to use while playing. Then, half the children were presented with a pretend behaviour, while the other half were presented with a trying behaviour. The experimenter said "I am going to …[action] now", then started the pretend (trying) action. When pretending, the experimenter gave non-verbal signs of playfulness, such as smiles and exclamations ("ooh", "shh" when pouring water, etc.). On the other hand, trying actions were accompanied by non-verbal signs of effort and disappointment ("Hm?").

In the crucial part of the task, children's reactions to the demonstrations were observed. The authors coded as "inferential pretence/inferential trying" the children's enriched actions that went beyond the experimenter's behaviour, while

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[3] As our examples should make clear, we are speaking of *simple* sentences occurring in texts, not of *complex* metarepresentational sentences of the form "According to *David Copperfield*, Uriah Heep is arrogant" or "Mummy pretends that the banana is a telephone". Normally, these latter sentences are used *outside fiction* in order to speak of the fiction itself, so they are not typically ascribed fictional truth-conditions. (Of course, there may be cases of second-order fictions in which a story is told which is about an(other) story, but for simplicity's sake we rule out these cases here.).

they coded as "simple pretence/simple trying" actions lacking such a creative component. Simple pretence/trying actions were not taken into account in order to avoid the possibility of a superficial imitative behaviour, lacking any intentional understanding.[4] Like the 3-year-old children observed by Rakoczy et al. (2004), the 27-month-olds also tended to imitate the pretend action by themselves pretending in an "enriched way", for example, by using non-serious speech and going beyond what the experimenter did (that is, enriching the scenario). Correspondingly, after engaging in trying behaviours the 27-month-old children (like the 3-year-olds studied by Rakoczy et al. 2004) tended to perform the same kind of unsuccessful actions. Their non-verbal comments revealed their disappointment and they often enriched the experimenter's actions. The same pattern of behaviour, though in a less robust way, was displayed by the 22-month-olds.

Thus, children are able to distinguish between two situations which would be the same for someone unable to understand the intentional nature of pretence. A child understanding pretence as an (unintentional) as-if-behaviour would not be able to distinguish between different as-if actions, such as pretence, trying to do and mistakenly doing X. The authors conclude that young children already have the concept of pretence as an intentional action. That is, in their view children understand pretence as an intentional activity of making as-if something were the case. Such a conceptualisation allows them to distinguish pretence from other similar activities such as trying to do X or mistakenly doing X.

It is in fact controversial whether pretending is an intentional activity, at least if this means that pretending depends on something like specific fictive intentions [for a positive and a negative view on this, see respectively Currie (1990) and Walton (1990), who adopts the causal-inferentialist stance on pretence defended also by Harris et al. (1994)]. Whatever the solution one gives to this problem, Friedman and Leslie (2007) have recently discussed some cases of pretence which are problematic in both pure 'behaving-as-if'- theories and the intentionalist 'behaving-as-if'- theories proposed by Rakoczy and Tomasello (2006). Suppose a child pretends that a pencil is a car: (s)he pushes the pencil along a path making a "vroom, vroom" sound. Now, according to a pure 'behaving-as-if'- theory, the child would not be pretending at all for the behaviour the child actually engages in is too far removed from the behaviour (s)he should engage in: if the pencil were a car, she would neither push it nor make engine noises. But neither does the intentionalist 'behaving-as-if'- theories fare any better. As the authors show, the theory has to become extremely complex in order to accommodate such a simple case of children's pretence. The simple rule "*the child (intentionally) acts in a way that would be appropriate if **x** were a **y**"* should be expanded into a disjunctive rule such as "*the child (intentionally) acts in a way that would be appropriate if **x** were a **y** OR the child (intentionally) makes **x** move in a way that would be appropriate if **x** were a **y** OR the child (intentionally) produces sounds that x would produce if **x** were a **y**"*. And the expansion of the behavioural rule necessary to accommodate

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[4] To be sure, someone not persuaded by the importance of introducing 'creative props' could observe that the experiment still elicit imitation. Yet, since imitation can be performed at different levels of complexity, Rakoczy et al. might precisely retort that the imitation in question does not regard the mere behaviour of the experimenter, but the imitation of his/her intentional actions.

children's comprehension rather than production of the same pretend situation would be even more complex.

Nevertheless, if Rakoczy et al. think that pretending is intentional in the sense that involves awareness of one's own activity, then they raise an interesting point. From this perspective, their criticism is aligned with metarepresentational critiques of 'multiple models'- approaches. For, as we have seen above, not only are these latter approaches actually put in the same basket as the 'behaving-as-if'- theories that Rakoczy et al. bring into question, but also their account of pretence merely in terms of first-order rather than of second-order representations, which is what metarepresentations are, is ultimately unsuccessful. Let us examine this point more in detail.

As Leslie sees it, decoupling first-order representations is not sufficient to make-believe. For him, it is not enough to appeal to multiple models insofar as pretence is a metarepresentational phenomenon. Leslie (1994) gives the following account. The decoupled representation is the object of another computational process, leading to the construction of an informational relation, which Leslie calls Metarepresentation or M-representation. Figure 1 shows the structure of a Leslian metarepresentation.

A metarepresentation is an attitude which is conceived as a relation between an agent and two representations belonging to two different semantic levels, literal and non-literal (that is, a primary and a secondary representation).

Perner (1991) has replied that pretence is not metarepresentational at all. As already emphasised, all the child needs is to be able to build multiple representational models, a reality model and a model for imaginary situations (the pretend model) and to decouple the fictional representation by putting it in the pretend model. Metarepresentational ability is involved only when the child begins explicitly to attribute states of pretence to him/herself and to others.

In ascribing to Leslie a metarepresentational conception of pretence, Perner seems to mobilise a different notion of metarepresentation. For Perner, a metarepresentation is an *interpreted* metarepresentation, that is, a representation taken as having a representation as its object; more precisely, it is a representation of a representation
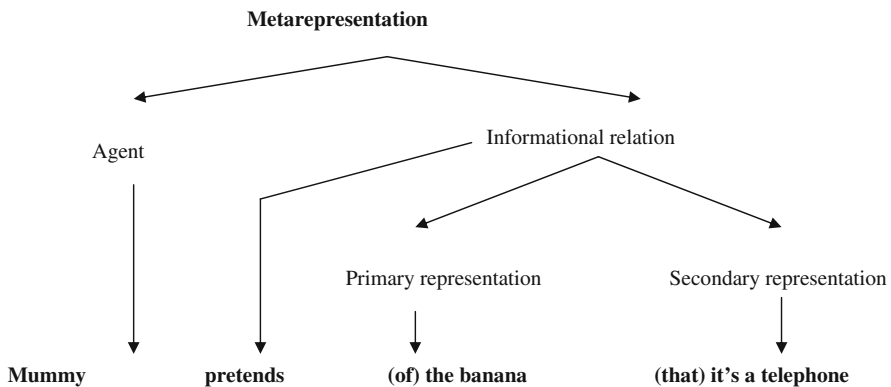

Fig. 1 From Leslie and Roth (1993)

qua representation, that is as something which has an interpretation and not as something which at most is a mere (syntactic) vehicle of information. In Leslie's view, a metarepresentation is on the contrary just an informational relation between an agent and two representations, which does not require those representations to be interpreted.[5] Thus, Leslie is not a metarepresentationalist on pretence, at least in the sense that he does not say that pretence *is* metarepresentational in the sense of this notion that Perner mobilises. From now on, we will stick to Perner's sense of this notion.

Notwithstanding the fact that the standard interpretation of Leslie's position coming from Perner is a bit misleading as a result, one has to admit that Leslie's position is also open to an interpretation that makes him *in any event* a metarepresentationalist on pretence in the sense of the notion of metarepresentation that Perner has in mind, though in a weak form rather than the strong one criticised above by Perner. Let us explain.

A central step in Leslie's reasoning, which is not actually developed by the author, is the parallelism between first- and third-person pretence. His line of reasoning is simple: he remarks that the child begins to play solitary pretence at the same age (s)he begins to understand pretence in others. For example, (s)he uses a banana as a telephone when (s)he also understands mummy acting as-if the banana were a telephone. Given that to understand pretence in others requires a metarepresentational ability, Leslie adds the (somewhat unjustified) comment that the same, actually computational, process is presumed to be involved in solitary pretence.

According to Leslie, the above analysis of pretence shows that there is an isomorphism between attribution of pretence states and attribution of beliefs, desires and other mental states.[6] This claim, which goes far beyond the scope of this paper, is central to Leslie's hypothesis that pretence is the first manifestation of development of ToMM (Theory of Mind Mechanism), the metarepresentational mechanism which in the nativist-modular version of the theory underlies human folk psychological reasoning. These topics are dealt with further in Sect. 6.

All in all, this shows that for Leslie, although pretence is not straightforwardly metarepresentational in Perner's sense, Pernerean metarepresentations are involved in pretence *because* (implicit) (self-)attribution of a state of pretence is always involved in it and that (self-)attribution is precisely a metarepresentation in Perner's sense, for (self-) attribution is a representation of a representational state *qua* representational. In other words since, as we have seen, for Leslie pretence requires the ascription of states of pretence themselves, Leslie goes on to appeal to metarepresentationalism in a Pernerean sense, even though in a weaker form than that Perner (erroneously) ascribes to him: definitely, for him pretence does *not* consist in a metarepresentation taken as a representation of a representation *qua* representation, yet it *involves* such metarepresentations. To put it in Currie's

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[5] Incidentally, since for Leslie a metarepresentation is a computational relation between an agent and other representation, is also subpersonal. On the contrary Perner is not committed to this idea.

[6] According to Leslie, each semantic property of mental states' ascriptions has a correspondence in one of the three basic forms of pretence: referential opacity corresponds to object substitution; nonentailment of truth or falsehood corresponds to attribution of pretend properties; and nonentailment of existence corresponds to creation of imaginary objects (see 1997:416 for details).

([1998](1998):41) terms, the idea is that although pretence is not a metarepresentation, having metarepresentations in this sense is a necessary condition for pretending.

Undoubtedly, by taking the possession of a metarepresentation as a mere necessary, and not also sufficient, condition for pretending, this form of metarepresentationalism is weaker than the one Perner (erroneously) ascribes to Leslie. Yet one might wonder whether Perner would find that such a weakening makes a real difference with respect to the stronger metarepresentationalist position. As this weaker metarepresentationalism intends to account for the fact that pretence is taken to go along with *ascription* of pretence, Perner would perhaps retort that even this weak metarepresentationalism on pretence is not necessary to account for the phenomena in question. For in order to account for *pretence itself* and not for its *attribution* to someone, even the subject itself of the pretending activity, the mobilisation of multiple models is sufficient.

To deal with this possible criticism by Perner, another intermediate hypothesis is defended by Jarrolds et al. ([1994](1994)), who point out that different kinds of pretence require different cognitive processes. More precisely, metarepresentations (in the above sense) are necessary only when, at around 30 months of age, children begin to engage in cooperative make-believe, in which reciprocal roles are negotiated. In fact, it is only at this level of complexity that children have to attribute states of pretence to their peers and to themselves. Yet for these authors the underlying idea remains that the implication of the metarepresentational level is tied merely to the *attribution* of fictionality. That is, even if ascribing pretence to someone else is a metarepresentational affair, pretending per se is not. Hence, these authors are not that far from Perner's original idea that pretence does not need a metarepresentational ability but may be successfully handled by means of multiple cognitive models.

Let us at this point take stock. We have seen that Perner's way of developing Leslie's original idea on decoupling by appealing to multiple models provides a very fruitful treatment of pretence. Yet it is hard to escape the feeling that although pretence is not metarepresentational, in the Pernerean sense of a second-order representation of a representation, metarepresentations in this sense are still in some way involved in pretence. As will be seen below, Perner himself has attempted to say something more on this subject. In what follows, we will therefore try to account for the appropriateness of this feeling by developing a metarepresentationalist approach, which is however even weaker than the two main metarepresentational approaches presented here: that is, it is weaker not only (and obviously) than the strong approach according to which pretence *is* metarepresentational, but also than the weak approach that pretence *entails* metarepresentations.

4 Why an even weaker metarepresentationalist account is needed

As hinted at previously, the theoretical merits of the simple representationalist position towards pretence, along with Perner's above-mentioned criticisms of Leslie's account, do not mean that the metarepresentational approach to pretence is

bound to fail. Certainly, *qua* simulative activity, to pretend something means to display oneself imaginatively in a different scenario, hence—as we have seen—to activate a representational model different from the model one mobilises when representing the real world.

Yet the mere activation of a representative model in which an imaginary world is represented is far from accounting for pretence. One may say rather that being fully involved in some sort of *delusory thought*, in which one represents things as they do not actually stand, is tantamount to merely activating an imaginary representational model. The paradigmatic case of such a cognitive situation is dreaming. In dreaming, for instance, a subject simply activates a model in which an imaginary world is represented. But also some forms of hallucinatory thought, like for example some forms of schizophrenic thought, can be easily dealt with in this way. In erroneously believing that his wife has been replaced by an impostor (and chopping off her head in order to check that this is so), a subject obsessed by Capgras delusion is activating a model in which an imaginary world is represented while temporarily suspending his/her cognitive contact with the real world.[7] Other less tragic cases of deluded thought can be handled in the same way as with cases of Anton's syndrome, in which blind patients behave as if they can see—for this and other similar cases, cf. Young (2000). From the cognitive perspective, in general, things indeed stand for the deluded subject as if (s)he faced an imaginary world, although (s)he lives and (unfortunately) acts in the real world as always. Yet, a pretending subject is precisely not a deluded subject: in representing an alternative world, the pretending subject endorses no cognitive illusion or mistake, (s)he is not betrayed by what (s)he represents. As Lillard (2002b:194) herself acknowledges, "if children did not hold the pretence world separate from the real one, they would become confused".

On behalf of Perner, one could well reply that the difference between pretending on the one hand and these cognitively delusory situations on the other stands as follows. While the deluded subject only activates the imaginary model (because (s)he does not know that that model is not a model of the real world), the pretending subject simultaneously activates *both* the pretend model *and* the reality model.

But even this is not enough. For the mere simultaneous activation of the imaginary and of the reality model accounts for the cognitive situation of somehow *dissociated* subjects, namely subjects who experience a world of their own and still do not lose their grip on the real world. Here, sleepwalkers are the paradigmatic case of this kind of subjects. A sleepwalker may well mobilise both the reality model, notably a perceptual one—this is what allows him/her to walk around in the real world avoiding obstacles—and an imaginary model—in which (s)he represents the world (s)he is dreaming about. Yet (s)he is not pretending anything. Properly considered, a sleepwalker is nothing but an extreme daydreamer. Clearly, a daydreamer mobilises both an imaginary model, concerning his/her mind's

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[7] For this way of dealing with the Capgras delusion, see Sass (1994). According to Currie (2000), typically the subject here is merely imagining, while erroneously thinking that his/her imagination is a belief about the real world.

wanderings in an imaginary world, and the reality model, enabling him/her still to perceive the real world while daydreaming. Yet again, (s)he is not pretending anything. Thus, even imagining while perceiving is not enough in order for someone to pretend (again, see Walton 1973, 1990).[8] In actual fact, many other subjects are in the same cognitive situation. Take people affected by the most famous case of Cotard delusion, namely subjects who believe that they are dead. Although these subjects represent themselves as dead, they mainly behave as ordinary subjects do. With regard to the afore-mentioned Capgras syndrome, moreover, it would be better to consider most patients as dissociated rather than as hallucinated. While saying that a close relative has been substituted by an impostor, they behave in a friendly manner towards this 'impostor' and generally do not denounce him/her. So, all these subjects are suitably interpreted as people whose odd beliefs are not integrated into a single belief system (Young 2000). In this respect, they appear to be subject to the same predicament as those suffering from hemianopia. Although the latter seem to perceive the world in a very distorted way, as if it corresponded to what they depict in their visual representations, they do not lose cognitive control of the world as it really is (Bisiach 1988). Thus, appealing to mere multiple representational models, as involved by resorting to a decoupling mechanism, is not enough in order to account for pretence.

On behalf of the 'multiple models'- account, one might remark that, unlike a dissociated subject, the activation of the 'pretend'- model does not lead its subject to act or anyway to entertain a reason for acting such as a belief. Unlike the former subject, who—admittedly dimly—believes e.g. that his/her relative has been replaced by an impostor (while also failing to believe that), the latter subject simply fails to believe e.g. that a slime on the screen is attacking him/her, (s)he merely *pretends* to believe that. Yet far from supporting the 'multiple models'- account, this mere failure to believe and to subsequently act in the pretence case is evidence that *something more* is required than the mere activation of two different representational models. For if this mere activation were all that there is cognitively at stake, then the subject would not merely lack the relevant belief, (s)he would precisely also have it (in the reality model)!

It is time for us to formulate our proposal. The difference between a pretending subject and a dissociated subject lies the fact that the former *acknowledges* that the representations entertained in the pretend model are not to be lumped together with the representations (s)he simultaneously entertains in the reality model. This is what enables him/her to entertain contradictory representations simultaneously (going back to Leslie's afore-mentioned example, "this is a banana" and "this is not a banana"). It is not only a question of (s)he putting these representations in different representational boxes, as even the dissociated subject does. Unlike the latter, (s)he also *takes* these representations *as* belonging to such distinct boxes. Once again Lillard (2002a:104) is forced to recognise this: "a pretender must be aware of the actual situation and the nonactual, represented one, or else (s)he is mistaken, not

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[8] This seems to escape Currie (1995:144–145, 148), who equates pretending with imagining. To be sure, Currie is well aware that there is a difference between a pretending mind and an imaginative mind such as that of a daydreamer, if not also that of a hallucinatory subject. Yet he describes this distinction as an unconscious switch from having pretend to having real beliefs (*ibid*:162-3 and fn. 26).

pretending".[9] Thus, pretence involves a metarepresentational level. For it involves the acknowledgement, or the awareness, that a certain representation is to put in a representational model different from the one in which another representation is put; as awareness is in its own turn a form of representation, pretence involves the representation of a representation.

In this respect, the aforementioned behavioural data found in Rakoczy et al. (2004) and Rakoczy and Tomasello (2006) are very important. They show that pretending subjects differ cognitively not only from subjects entertaining delusory thoughts, who in our categorisation merely activate the imaginary model, but also from dissociated subjects, who simultaneously entertain different representational models. In actual fact, the cheerful piece of behaviour (laughing and smiling) that pretending children manifest definitely distinguishes them from younger children who, like deluded subjects, exhibit a 'trying'—kind of behaviour insofar as they erroneously take things to be what they are not—for instance, they unsuccessfully try to drink from an empty glass, by thinking that it is not empty, rather than smiling as they deal with the glass by pretending that it is not empty. Yet that piece of behaviour also distinguishes pretending children from dissociated subjects who simultaneously take things to be what they are and what they are not. Presumably, a dissociated subject who imagines him/herself to be dead and also takes him/herself to be alive engages in the same apparently contrasting form of behaviour that a child pretending to be dead would perform, for example by refusing to eat and at the same time eating the snack Mummy gives him/her to feed him/her baby. Yet unlike a pretending subject, the dissociated subject would not wink (smile, etc.) at anybody.

Certainly, on the one hand the fact that the pretending subject has such an awareness does not mean that pretence *is* metarepresentational in the strong sense of being a representation of a representation which, following Perner, is commonly ascribed to Leslie. As we have just said, by involving that awareness, pretending involves the representation of a representation, yet it is not in itself a metarepresentation.

On the other hand, such an awareness is not even a 'Cartesian' second-order knowledge of, or at least a second-order belief in, the fictional aspect of the fiction one is engaged in—the knowledge or belief one would linguistically express by whistling to oneself "it's only make-believe". In point of fact, in taking Leslie's position non-commonly as merely ascribing *this* belief to pretending subjects, the conception ascribing that 'Cartesian' knowledge to such subjects can be seen as retreating from the strong claim that pretence is metarepresentational to the weak claim that pretence requires a second-order belief of the form "S pretends that p", hence to the weak claim that pretence involves *this* kind of metarepresentation. Yet, insofar as 18-month-old pretending children may well lack the notion of pretence itself (or of fiction for that matter), pretence can hardly involve metarepresentation

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[9] Lillard (2002a:104) takes this awareness as one of the defining feature of pretence. Thus, one may take her as another supporter of the minimal metarepresentationalist view we are defending. This is not however very clear. For the text we have quoted in the text can be also interpreted either as an alternative formulation of the Pernerian point of view (with "being aware of" as simply meaning "representing") or as an alternative formulation of the point of view standardly (after Perner) ascribed to Leslie (with "being aware of" as meaning "representing to oneself the (actual or nonactual) representation of a situation").

not only in the strong but also in this weak sense. Nevertheless, it is hard not to take the awareness that even 18-month-old children may well manifest, as still being metarepresentational in nature. In having such an awareness, one indeed non-notionally represents first-order representations as being differently located (in one's mind). In this even weaker, or *minimal*, sense, we take it that pretence involves metarepresentation. In the next section, we will further qualify this minimal sense, by distinguishing our position from two close accounts, one which either is not metarepresentational or it actually collapses onto ours, and another one which is actually 'Cartesianly' metarepresentational in the aforementioned sense.

5 How to tell the minimal metarepresentationalism on pretence from close accounts

To begin with, let us note that some followers of Perner have acknowledged that pretence needs something more than the mere mobilisation of distinct representational models. A *collating mind* is requested. Its job is seemingly to compare or assemble representations inscribed in the aforementioned distinct representational models—cf. Olson (1993) and particularly Suddendorf (1999), Suddendorf and Whiten (2001). For all of them, however, the collating mind, hence pretence as well, is still not metarepresentational. So, one might wonder, does not our account of pretence coincide with that of the supporters of a collating mind?

To face this question, we will try to defend the following three claims: (a) the job performed by the collating mind, as described by its supporters, is not enough in order for someone to pretend; (b) even if, contrary to fact, it were enough, the collating mind would be metarepresentational in the same, minimal, sense in which, in our account, the pretending subject is; so, it is the 'collating mind'- account that collapses onto ours, not the other way round; (c) the reason why the collating mind, or our pretending mind for that matter, is not understood by those authors to be metarepresentational is that they entertain a poorly articulated concept of metarepresentation. Let us look at these points in detail.

As to (a), to begin with it is not very clear what, according to its defenders, the collating mind is supposed to do in order to pretend something. Suddendorf and Whiten (2001:632) suggest that this mind activates a third collating representation over and above the two representations activated in the reality and in the imaginary model respectively. Coming back to Leslie's example, over and above "this is a banana" (reality model) and "this is a telephone" (imaginary model), the collating mind activates the collating representation "this banana is a telephone". Yet it is hard to see in which sense this third representation performs some task that the second fails to perform. If the concept of a banana is semantically inert in the complex demonstrative "this banana", the third representation simply collapses onto the second. If it is not inert, it is still the case that both the complex demonstrative and the simple demonstrative "this" involved in the second representation (as well as in the first representation for that matter) refer to the same (real) thing.

Olson ([1993](#)) suggests instead that the third, collating, representation focuses on the fact that the real object represented in the representation belonging to the reality model (in our example, the banana) is a substitute for the imaginary object represented in the representation belonging to the imaginary model (in our example, the telephone); for example, "the banana stands for the telephone". For the sake of argument, let us accept that the collating representation is correct in presenting that what the first representation is about acts as a proxy for what the second representation is about.[10] But it is in fact hard to conceive the general notion of pretending in terms of the relation of standing for something. Perner himself would be perplexed, as he takes the notion of pretending that such and such is the case and the notion of something standing for something else (which is sometimes actually rubricated as pretending that that very something is that something else) as distinct notions (1993:52–53, 57–59, 288–289).[11]

To this Olson would probably reply that he proposes an account of pretending x to be y not merely in terms of (representing) x (as) standing for y, but rather in terms of (representing) x (as) standing for y plus representing x (in the reality model) and representing y (in the imaginary model). But even so, pretending that x is y is just *one* kind of pretence. As we have seen at the very beginning of this paper, one may even pretend that there is something, an imaginary object, which in actual fact does not exist (for example, that there is a train while in (the relevant portion of) reality there are no trains). Now, *this* form of pretence is hardly accountable for in the above terms, for even though one might say that also in this case one mobilises representations of real objects in the reality model and a representation of the imaginary object in the imaginary model, there is really no representation to the effect that some real object stands for the imaginary object.

To be sure, champions of the collating mind might here say that *creative pretence*, that is, pretence centred on the fact that there is an object which does not actually exist, appears later in children's development. As Suddendorf ([1999](#):248)[12] seems to suggest, from looking at autistic children's behaviour, the ability to imagine unreal things comes later than the ability to imagine that a real thing is different from how it actually is. Hence, creative pretence is not something that has to be explained by appealing to a collating mind. Yet this genetic hypothesis is countered by the fact that 18-month-old children appear to understand precisely creative pretence (as when they understand someone else's objectless gestures as pretending that (s)he is using a hammer—as Lillard ([2002b](#):194) reminds us).

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[10] Walton, for one, would be skeptical about that. He says ([1990](#)) that the first object, what the first representation is about, is a prop in a make-believe game, which is not the same as being proxy for another object, what the second representation is about. For him, even expressions in literary texts are props in the make-believe game, which definitely does not mean that they stand for the (imaginary) characters whose vicissitudes are recounted in such texts.

[11] Someone might also be perplexed yet for the opposite reason, namely that it is the very notion of x standing for y that must be reconstructed in terms of the notion of pretending. In this respect, it would not be the case that, as Perner maintains, pretending that x is such and such and pretending that x is y are distinct notions; the latter would simply be a specification of the former. On this hypothesis we want here to remain neutral; but it seems at least that symbolic capacity presupposes comprehension of pretence. See Lillard ([2002b](#):200).

[12] See also the texts quoted in Lillard ([2002a](#):112).

Furthermore, imagining imaginary objects is precisely mobilised in the above account of the collating mind (the representation in the imaginary model is precisely taken to be a representation of an imaginary object, in our example the (actually nonexistent) telephone). In any case, as we have also seen at the outset, there is still another form of pretence, that of pretending that something is *F*—for example, that a doll's face is dirty—which is as simple as the pretence that *x* is *y* and yet again, it does not involve anything like (representing) something (as) standing for something else.

As to (b), let us nevertheless assume, for argument's sake, that Olson's proposal gives a good account of pretence. Yet *pace* Olson, this account *is* metarepresentational. For the third, collating, representation he puts forward actually *is* a metarepresentation, namely a representation that something *represents* (stands for) something else![13] As a result, there would accordingly be no basic distinction between our minimal metarepresentational account of pretence and the 'collating mind'- account: they both account for pretence in metarepresentational terms. In other words, if a collating mind needs a metarepresentation, then the 'collating mind'- account collapses into our minimal metarepresentationalist account, not the other way round.

As to (c), a supporter of the 'collating mind'- account might at this point bite the bullet. By appealing to Perner himself, (s)he might claim that, if his/her account collapses onto ours, then neither of them is metarepresentational. For whatever the representational task performed by the collating mind, or our pretending mind for that matter, may be it is not metarepresentational. As seen above, according to Perner, in order for something to be a representation, it must not only be a representation of something but a representation of something *as being in a certain way*. Hence, in order for something to be a *meta*representation, it must not only be a representation of a representation, but it must also be a representation of a representation as being in a certain way—namely, as being a representation (1991:19–20, 35). Since the collating mind, or our pretending mind, does not represent a representation as being a representation, it performs no metarepresentational task.

At the end of the previous section, we said that our account is even more weakly metarepresentational than the 'Cartesian' one non-commonly ascribed to Leslie, according to which pretence involves metarepresentation. For unlike the latter, it does not appeal to the notion of pretence itself. By addressing the previous reply of the supporter of the 'collating mind'- account, we can now positively clarify in what sense our account is still metarepresentational, although in an even weaker sense than the 'Cartesian' approach.

We must be very careful here. If by "to represent a representation as a representation" one means that *the notion of a representation*—or any other notions of the same kind—has to be mobilised *in the very content* of a metarepresentation, as some Pernerians maintain—cf. Suddendorf (1999:234) and Perner (1991:19–20, 35) himself, then it is clear that the collating mind, or our pretending mind, is not metarepresentational. In our case, no metarepresentation in this sense in involved: one may well acknowledge that

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[13] Curiously enough, this seems to be acknowledged by Perner himself (1991:37–38); see also Suddendorf (1999:245).

certain representations are distinctly located, as our pretending mind is supposed to do, even though the content of that acknowledgement does not contain the notion of representation itself. In this respect, the notion of a representation is in the same boat as the notion of a model. As Perner (1991:33–34) says, children do not explicitly know that the locations of their different representations are distinct representational models, the reality and the pretend model, Rather, they have a sort of procedural, of functional, knowledge of the distinction between such models, namely, they procedurally know that they activate an imaginary model alongside a different, reality, model. Yet if by "to represent a representation as a representation" one simply means that *the representation in its mere, or crude, defining role*, namely, *the representation **qua** instantiation of the relation of representing without being conceived as such*,[14] has to be represented in the metarepresentation—as Pylyshyn (1978:573), from whom Perner (1991:35) borrows the concept of metarepresentation, originally suggested—then the collating mind, or our pretending mind, *is* metarepresentational. For, insofar as the content of one's thought contains not the notion of a representation, but *that very representation itself*, then that thought is still metarepresentational. As far as first-order thoughts are concerned, it is typical after McDowell (1982) to draw a distinction between *singular* thoughts—those having individuals as their constituents, as the thought that Mont Blanc is more than 4,000 m high, having Mont Blanc among its constituents—and *general* thoughts, those involving notions as their constituents, as the thought that the mountain between Chamonix and Courmayeur is more than 4,000 m high, having the notion of *being a mountain between Chamonix and Courmayeur* among its constituents. Now, metarepresentations having representations in their own content are simply second-order singular thoughts, while representations having a notion of a representation in thir own content are second-order general thoughts. To sum up, one has to distinguish between *general* metarepresentations—those containing the notion of representation in their content—and *singular* metarepresentations—those containing *the very representations*, as mere instances of the representing relation, in their content.[15]

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[14] See Perner: "a representation is something that stands in a *representing relation* to something else" (1991:18).

[15] Although sometimes singular thoughts are also labeled *de re* thoughts (cf. e.g. Recanati 1993), it is better to stick to our terminology. For the distinction between general and singular metarepresentations does not match the close distinction between *de dicto* and *de re* readings of pretence reports. This not only because the latter is a distinction concerning language, notably the way a reporter reports someone's intentional states, not intentional states themselves—a point often stressed in the literature, cf. e.g. Bonomi (1995)—but also because if there were anything like a genuinely *de re* metarepresentation, unlike a singular metarepresentation this might well be causally inert (cf. e.g. Oedipus' belief *of* his mother that she has married him). Moreover, the distinction between general and singular metarepresentations has to do with a difference in their *content*—a general versus a singular content. Note finally that this distinction can be drawn independently of assessing a further issue regarding whether a singular metarepresentation simply contains its primary object, that is, the first-order representation it is about, or it also, or rather, contains a non-conceptual content picking up that very first-order representation. For positions maintaining these latter options cf. respectively Schiffer (1978) and Fodor (2007). This issue is relevant when one addresses the question of whether a singular metarepresentation also has a perspectival nature. Perspectivality indeed comes into the fore when, unbenownst to a person, two singular metarepresentations may be about the very same representation, so that that very subject may endorse the first while rejecting the second metarepresentation. (Here we simply have at a second-order level the well-known problem Frege (1892) originally raised for first-order representations, or thoughts). For the purposes of this paper, however, this question can be put aside (but see footnote 17 below).

Thus, in holding that a collating mind, or a pretending mind for that matter, is not metarepresentational, Pernereans probably miss the distinction between *general* and *singular* metarepresentations, which is the mere application to representations of representations of a distinction to be normally made with respect to simple representations. In actual fact, Pernereans merely compare what in our terminology are *general* metarepresentations with representations caused by other representations and claim that only the former are genuine metarepresentations—cf. Suddendorf and Whiten (2001:630) and Perner (1991:37–38) himself. Now, we agree that being caused by a representation is not sufficient for something to be a metarepresentation. But a *singular* metarepresentation is not something which is merely caused by a representation; as we said, it is something which contains the very representation in its content, is—*inter alia*—*about* that representation.[16] Now, both the *strong* metarepresentational account of pretence traditionally attributed to Leslie and the *weak* metarepresentational account also ascribable to Leslie, which adopts the 'pretence-requires-belief'- form, involve *general* metarepresentations: they respectively take that pretence is or involves a metarepresentation of the form "*S* pretends that a (certain) *representation* is *F*", a representation which has another representation *qua* representation in its own content. In contrast our even weaker, or better minimal, metarepresentational account, which is still of the 'pretence-requires-belief'- kind, simply involves *singular* metarepresentations: a collating mind, or a pretending mind, requires children to mobilise metarepresentations, but only in the *singular* sense: "*S* pretends that *this*—which is a representation—is *F*".[17]

Let us reiterate this point in other terms. By speaking of an even weaker, or minimal, metarepresentational account of pretence, we do not mean that our account is not metarepresentational, but simply that pretence involves metarepresentations which are not conceived as representational by their subjects. That is to say, the content of their metarepresentations contains representations, but not *qua* representations: it is not conceptual with respect to those representations. Pretending subjects have to be aware that their real representations are distinct from their imaginary representations.

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[16] One—typically, a naturalist about aboutness—might maintain that being in a causal relation with a certain object is a necessary condition of aboutness. Yet even strict naturalists would agree that it cannot be a *sufficient* condition of aboutness—as, for example, Fodor (1990:91) says: thoughts may be caused "in all sorts of ways", and yet all these ways do not make those thoughts be about those causes.

[17] Following Leslie (1997:416), one might still rejoin that in order for pretence to involve metarepresentations, their reports must be opaque (for any pair of such reports which merely differ in coreferential expressions figuring in their embedded sentences, these sentences cannot be substituted in such reports *salva veritate*), and reports of *singular* metarepresentations are not such. To begin with, it is not clear in which sense the reports that pretence would involve are opaque. Perhaps the singular terms "the banana" and "the telephone" are not substitutable *salva veritate*; but this does not depend on the fact that they occur as embedded in reports different only in ordinarily coreferential expressions figuring in their embedded sentences. For there is no such fact—the reports "Mummy pretends that the banana rings" and "Mummy pretends that the telephone rings" are not such since "the banana" and "the telephone" do not ordinarily corefer. It depends rather on the fact that such terms occur in the expression of the primary representation and in what reports the metarepresentation respectively as standing for distinct objects—the real object and the imaginary object. But even putting this problem aside, it is still the case that certainly reports of *general* metarepresentations are ordinarily taken to be opaque, yet what has still to be proved is that pretence must involve *such* reports.

In order for such an awareness to have those representations in its content, however, those subjects do not need to conceive these representations as representations. This is by no means surprising. For it is just another case in which one knows that a is not b, without mobilising the concepts under which a and b respectively fall.

Incidentally, once we have this distinction between *singular* and *general* metarepresentations at our disposal, we can easily reinterpret some of the other things that Perner goes on to say. On the one hand, Perner (1999:9) claims that a young child merely entertaining multiple models is simply a situation theorist. When (s)he will be 4-year-old, (s)he will become a representation theorist, really capable of having metarepresentations. For in entertaining different representational models, the young child simply focuses distinct situations—a real one and an imaginary one—insofar as (s)he does not know that what (s)he actually mobilises are distinct representations of those situations. Now, let us put aside the issue of whether it is appropriate to describe this child as focusing in such models different *situations*, a real and an imaginary one.[18] Our point is that, regardless of the way the young child effectively conceptualises what (s)he is entertaining, (s)he acknowledges *of* the two 'things' that (s)he is entertaining that they are differently located. As has already been stated, this is enough for his/her mind to be metarepresentational, even if only at the *singular* level: the child acknowledges that *this*—which is a representation of the 'real' model—is not be ranked with *that*—which is a representation of the 'imaginary' model.

Up to now, we have shown that, by appealing to *singular* metarepresentations, our account of pretence is either stronger than the 'collating mind'- account, insofar this is not metarepresentational at all, or it forces that account to collapse onto itself. By the same token, we can now see how our account distinguishes itself from another amendment of Perner's original position this time made by Perner himself.

In point of fact, Perner is not foreign to the idea that there must be something over and above the mere mobilisation of distinct representational models in order for someone to pretend. He himself points out that a certain awareness of the models' being distinct is important (1991:9, 54, 66). Thus, Perner appears to be aware that even simultaneously entertaining distinct representations in different models is not sufficient for pretending. In his view (1991:66), this means that the two models have to be integrated into a single all-encompassing model, the pretend-reality model. This model nests both the pretend and the reality model. In Recanati's (2000:83–84) interpretation of the situation at stake, this integration manages to account for the aforementioned ability of a pretending subject not to be confused by (s)he possibly mobilising contradictory representations (actually, in different models). For the representation belonging to the pretend model presents a state of affairs included in a *hyperinsulated* world, namely, that state of affairs is a persistent

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[18] For the different representational models can easily contain both true and false representations with respect to the world of the model. Hence, it may well be the case that by means of a representation in a model the representing subject focuses *no* situation, for insofar as the representation is false with respect to the world of the model, that world contains no corresponding situation. This point probably escapes Perner as the way he construes his models leads him to think that models only contain representations that are true with respect to the world of the model (cf. fn. 1).

state that does not hold in the world of the integrating model. Consequently, representing in the pretend model that, for example, this is a telephone means representing a state of affairs that does not hold in the world of the integrating model, which can therefore contain also the contradictory representation.

However, nesting the pretend model in another model amounts to attributing to pretence the 'Cartesian' metarepresentational feature that obtains in the 'pretence-requires-(second-order)belief'- account. For such nesting precisely occurs when, from outside a fiction, we speak of that very fiction when we say "In fiction F, p"— typically, but not necessarily, from the perspective of reality (sometimes even from the perspective of another fiction, as it happens whenever we are dealing with a 'story-within-a-story' mechanism). But in order to do that, we need precisely the notion of fiction which is required so as to have a 'Cartesian' metarepresentational conception of pretence. But this is tantamount to saying that Perner's amendment requires *general* metarepresentations. In this respect it turns out that, *pace* Perner, his amended conception precisely merges at least into the weak form in which the Leslian account can be reconstructed, the form of the 'pretence-requires-(second-order)-belief'- kind that makes pretence appeal to *general* metarepresentations. Yet as we said above, once an even weaker metarepresentationalist account appealing to mere *singular* metarepresentations is available, there is no longer need to pursue this amendment.

Probably in order to avoid this (for him) unwelcome metarepresentationalist result, Perner retreats to the weaker thesis that the integrating model is not strictly speaking required to account for *all* forms of pretence, but just for a more mature one that appears in children's development immediately after they are 18 months old (1999:66–68).

Yet once we have both *singular* and *general* metarepresentations, we can easily deal with the situation at issue. The young pretending child is as metarepresentationalist as the older one; simply, whereas the first entertains mere *singular* metarepresentations, the second is led progressively to entertain *general* metarepresentations that involve representational notions (such as the notion of fiction) in their content. Hence, accounting for a pretending subject's ability not to contradict him/herself by appealing *à la* Perner to an integrating model actually involves being even more metarepresentationalist with respect to pretence than we are in our way of accounting for the same data.

In other words, once one distinguishes between the two aforementioned forms of the 'pretence-requires-belief'- approach: a weak 'Cartesian' (involving *general* metarepresentations) and an even weaker 'non-Cartesian' (involving *singular* metarepresentations) approach, one can then maintain that pretence is basically 'non-Cartesianly' metarepresentational while allowing for *some* pretence to be 'Cartesianly' metarepresentational. The latter is the more mature pretence which older children are already able to entertain, once they master—explicitly or implicitly—the very notion of pretence. Thus, the basic forms of pretence such as those recalled at the very outset of this paper—to sum up, (a) playing at being someone else or at having different features; (b) pretending that objects are either different things or have different features from those they actually have; (c) pretending that there are objects or individuals that in actual fact do not exist—do

not involve ascribing to someone the very ability to pretend, for this would imply to have a representation that represents that *there is a representation* in a fictional model, namely to have a general metarepresentation.

In this respect, it may be correct that one needs to be able to tell more articulated forms of pretence from a simpler one, as various authors have maintained (see Sect. 4). In particular, it may well be the case that one has to be able to tell pretence mobilised by 31- to 36-month-old children—*cooperative social pretend play*—and pretence mobilised by 37- to 48-month-old children—*complex social pretend play* involving metacommunication, hence the explicit ability of saying things like "S pretends that p"—from the early form of pretence emerging at 18 months; see Howes et al. (1992). Nonetheless, it would be incorrect to conclude that only the latter forms of pretence involve metarepresentations, as Jarrolds et al. (1994:457–458, 463–465) are tempted to do (see the aforementioned section). Rather, this distinction can be interpreted as showing that while the early form of pretence is of the 'pretence-requires-belief', kind in that it involves metarepresentations only in the extremely weak, *singular*, sense we have appealed to, the later form of pretence is also of the 'pretence-requires-belief' kind yet it involves *general* metarepresentations—for example, those involving ascriptions of pretence to others as well as to the pretender him/herself—as in the account ascribable, even if not (after Perner) commonly ascribed, to Leslie.

6 Pretence and simulation

Let us recapitulate our conclusions so far. We started out by seeing that the two positions commonly versus non-commonly ascribed to Leslie, the strong position according to which pretence is metarepresentational and the weak position according to which pretence merely requires metarepresentation, are justly criticised by a host of authors. Essentially, those criticisms appeal to the idea that pretence is to be accounted for by simply invoking multiple models containing different first-order representations. Yet this does not mean that the idea that pretence has to do with metarepresentation is incorrect. For there is an even weaker way to defend the claim that pretence requires metarepresentation, according to which pretence requires merely acknowledging that representations of fictional worlds are to be mentally located differently from representations of reality.

This 'watered-down' metarepresentationalist position on pretence is full of interesting suggestions for the debate about the nature of folk psychology, that is the strong human propensity to interpret behaviour in terms of mental states such as beliefs, desires, etc. The contemporary debate on this subject is dominated by two theoretical approaches, 'theory theories' and 'simulation theories', that distinguish themselves in defending versus criticising a metarepresentationalist approach on folk psychology—see, for example, Davies and Stone (1995a, b). According to the theory theories, to interpret behaviour we use a body of psychological knowledge. Indeed, theory theories share the idea that mentalising is a genuinely metarepresentational activity based on the possession and exploitation of genuine psychological knowledge. This crucial point is rejected

by those who consider *simulation* to underlie naive psychology. To predict and explain behaviour, we put ourselves in the other person's shoes and look at what would happen in that (possibly counterfactual) situation. This process only involves the contribution of the decision-making mechanism, namely, the cognitive system by which we plan and organise complex behaviour. In the well-established model proposed by Stich and Nichols (1995), during psychological interpretation the decision-making mechanism works off-line, taking a *pretended* situation as input and organising the action plan without necessarily performing it. Simply put, in order to predict what John, who is looking at a roaring lion will do, we imaginatively adopt his point of view, by pretending that we are John standing in front of a roaring lion. Whatever pretended decision is taken, it is attributed to the simulated person. In this theoretical framework, at least in its radical versions, metarepresentations are a sort of lexical labels attached to simulation outputs (see Gordon 1995b:61).

Now, if our minimal version of metarepresentionalism about pretence is correct, it turns out that, as they take pretence to be at the core of psychological interpretation, simulation theories are committed to the thesis that folk psychology is a genuinely metarepresentational activity. We are not committed here to the thesis that theory theories completely collapse into simulation theories. Rather, we are suggesting that these two approaches to folk psychology are less diverse than they are generally presented.

The moderate simulation theory as proposed by Alvin Goldman is a case in point. For he claims that in simulating someone else, we discover in ourselves the mental states that we then attribute to the other person. Insofar as this simulation involves pretending to be someone else, and we granted that—in some very weak sense at least—pretence involves metarepresentations, one such moderate simulation theory turns out to be a particular version of a theory theory.[19]

Nevertheless, a simulation theorist may retort that a metarpresentationalist account of simulationist aproach is not compulsory. This is paradigmatically the case with Gordon (1995a, b), who defends a radical simulation theory. According to Gordon, during simulation we do not *pretend* to be the other person in the sense of imagining to move in another's mind. Rather, we *project* ourselves into the other person's situation (1995a:63) in a very strong sense. In simulating Mary's situation, I do not imagine to move in Mary's mind, but I transform myself into Mary. "I" changes its referent: the identity "I = Mary" is established. Thanks to this referential shift of the personal pronoun, any introspective step is removed: we do not first attribute a mental state to ourselves and then transfer it to the other person

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[19] Even though in his well-articulated theory (2006) Goldman proposes a way to minimise the role of first-person psychological knowledge, he agrees that he is defending a hybrid approach, in which simulation co-occurs with metarepresentational processes. In point of fact, Goldman thus defends his metarepresentationalist version of a simulation theory by also appealing to introspection. Yet this is not essential. A simulation theorist may be both metarepresentationalist and non-introspectionist, as Fuller (1995) and Heal (1995) claim.

(Mary). Since we become Mary during the simulation time, no transfer is needed (1995b:55).[20]

Compared with moderate approaches, that of Gordon is a good candidate for a non-metarepresentational theory. Granted, it is controversial. At some points he seems to suggest that we are really transformed into the other person ("I shift spatiotemporal perspectives", 1995a:64), while at others he explicitly talks about pretending (1995:65). Let us concede that Gordon's approach is not committed to pretence.[21] If simulation does not involve pretence, one is not entitled to say that, insofar as pretence requires metarepresentational abilities, simulation is itself a metarepresentational process. There is however a high price to be paid. What does it mean to become the other person during simulation? In Gordon's approach, a simulating person as described in his papers seems to us to be a hallucinating person who changes personality and becomes someone else. Someone who recenters his egocentric map and not only becomes in imagination the referent of the first person pronoun "I", but also begins to live in a new 'now' and 'here' (see note 20 below), is not significantly different from a hallucinating person: he is someone who forgets both his personality traits and his real spatio-temporal coordinates in order to assume some new identity. As a consequence we human beings, who exercise folk psychology all the day long, would always be victims of hallucinations. For example, in an ordinary day we would be able to hallucinate three times to be our friend Michele, a number of times to be someone of our relatives, one time to be Charlie Chaplin, one time to be Penelope Cruz, and so on. Now, even a good actor using the Stanislavskij method does not really change his personality as a simulating person would do. In short, it seems that in reducing simulation to a hallucinatory practice, the radical simulation theorist is stretching the notion of simulation too far; the burden of proof is on him/her to show that his/her theory is really a simulation theory.

At this point, a possible way to make sense of radical simulative hypotheses and look for a properly non-metarepresentational approach requires to dig down deep to the neurological level. In recent years, the debate on the role of simulation in folk psychology has been greatly influenced by the discovery of mirror neurons—see

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[20] It is interesting to quote Gordon: "To simulate Mr Tees (i.e. someone who has missed his flight) in his situation requires an egocentric shift, a recentering of my egocentric map on Mr Tees. He becomes in my imagination the referent of the first person pronoun 'I', and the time and place of his missing the plane become the referent of 'now' and 'here'. And I, Gordon, *cease* to be the referent of the first person pronoun: what is imagined is not the truth of the counter-identical 'RMG is Mr Tees'. Such recentering is the prelude to transforming myself in imagination into Mr Tees much as actors become the characters they play. Although some actors ('method' actors, for example) occasionally step back from the role they are playing and ask 'What would I, *myself* do, think, and feel in this situation?', and then transfer their answer (with or without adjustments) to the character, the typical stance of modern actors is that of being, not actors pretending to be characters in a play, but the characters themselves." (1995b: 55; italics in the original text). This idea has famous predecessors. See for instance this passage by Wollheim, in which he accounts for a form of imagination enabling one to understand a picture pictorially: "What then happens is that the suitable spectator, the suitable *external* spectator we might say, starts to identify with the internal spectator: that is, to imagine him, the internal spectator, centrally, or from the inside, interacting with the represented scene as the repertoire assigned to him allows or constrains him to." (1998:225).

[21] The real problem with Gordon's account is another, which has to do with his behaviouristic stance: see Meini (2007).

Rizzolatti and Gentilucci (1988). Originally found in the premotor cortex of macaques' brains, mirror neurons are cells with particular properties. They discharge not only when the animal performs an action, but also when it sees similar actions being performed by another individual, typically a conspecific or a human being. More recently, clusters of cells with mirror properties have been discovered in human beings, both in the premotor cortex and in other regions of the brain—see for example, Fadiga et al. (1995), Iacoboni et al. (2005).

Clearly, neurons that reproduce in the interpreter's brain the action of another agent are simulative cells. Indeed, many cognitive scientists take mirror neurons as neurological evidence for simulation theory. In particular, in an influential paper Gallese—one of the neurophysiologists of the Parma group that originally discovered mirror neurons—and Goldman (1998) proposed that the simulative activity of mirror neurons triggered when we see someone acting toward a goal is the cue to individuate the goal itself.

Now, Gordon's theory fits very well these neurological data. According to Gordon, during simulation we become someone else and let our decision-making mechanism run in a neutral space. For example, after seeing John who looks at a barking mastiff we become John and take a behavioural decision without accessing our mental states. It is easy to describe the very same psychological process at a neural level: I see John facing a barking mastiff; my mirror neurons discharge and I enter a simulative we-centric space (Gallese 2003). In this space I/John decide(s) to run away.

The idea of grounding Gordon's non-pretence-involving notion of simulation on the activity of mirror neurons seems promising precisely in order to distinguish simulation from hallucination. In simulation, but presumably not in hallucination, mirror neurons are activated. In this case, Gordon could rely on a notion of simulation which is independent of pretence without facing the problem of assimilating simulation to other mental activities. Now, putting well to one side the fact that it would be advisable to carry out brain imagery studies of hallucinatory states, it unfortunately remains the case that neural, non-pretence-involving, simulation is hardly rich enough to constitute the basis of mindreading in a simulation theory approach. Let us conclude this paper with a few remarks on this point.

When performing an action, we are typically moved by several intentions, such as motor and prior intentions, not to speak of communicative and social intentions. Concerning the first two, a prior intention is a non-basic goal, such as opening the fridge to take a beer and drink it. To reach that goal, we form different basic, motor intentions, such as to grasp the fridge handle by opening the right hand and then closing it. More importantly for us, the same motor intention can be involved in different non basic intentions, as showed by Jacob and Jeannerod (2005).

Consider Dr. Jekyll and Mr. Hyde. Dr. Jekyll is a serious surgeon who anaesthetises his patients before performing surgical operations, while Mr. Hyde is a sadist who does not anaesthetise his patients before performing exactly the same actions. Now, it turns out that Dr. Jekyll *is* Mr. Hyde. Dr. Jekyll (*alias* Mr. Hyde) may execute twice the same motor sequence on two different persons (one

anaesthetised, the other simply paralysed). Clearly, Dr Jekyll's prior[22] intention differs from Mr. Hyde's: whereas the former intends to cure the patient of his disease, the latter intends to take delight in his victim's pain. However, the two motor intentions are identical. As a consequence, anyone watching the two surgical operations would not notice any difference. Now, this raises a problem for the non-metarepresentational account of simulation based on mirror neurons. At a neurological level, we can say that simulative neurons in the brain of an observer watching the action cannot distinguish between two quite different actions by the agent because the superficial behaviour is identical in the two situations. But if an observer is simulating an agent, his/her simulation should match such different actions, not that very same superficial behaviour.

Clearly, in naïve psychological reasoning the attribution of prior intentions are crucially involved. When attributing a motor intention, we are 'naive behaviourists', delivering basic interpretations which are far for being satisfactory explanations of our actions. Then a supporter of the 'mirror neurons'- account of simulation may arise an important question: do mirror neurons code only basic motor intentions, or can they identify more complex prior intentions? Until recently, no study did focus on this question, leaving it open to philosopher's skeptical doubts. Nevertheless, recent empirical data on both macaques—Fogassi et al. (2005)—and humans—Iacoboni et al. (2005)—suggest that simulative processes carried on at the neural level by mirror neurons can code the *prior* intention, that is, the psychological intention which causes the motor act. The rationale of the experiments was the following: if mirror neurons only coded the 'immediate' *motor* intention, then they would not be influenced by the context of an action. If we pick up a mug, our motor intention is to take hold of it, independently of our prior intention (to drink tea or to clean up afterwards). On the contrary, if mirror neurons coded prior intentions, then they would be influenced by the context, because—as Jacob and Jeannerod's example shows—the same motor act can be performed with two psychological goals. Now, Iacoboni et al. (2005) have shown that the context of an action modulates the neural activity: mirror neurons increase their activity when someone sees a hand picking up a mug from a table with objects (the mug, a teapot, some cookies etc.) arranged as just before tea in contrast with a context where the same objects are arranged after tea has been taken.

Thus, it may be true that in certain simple situations there is at least a one-to-one correspondence between prior intentions and neurons' firings. Nevertheless, one could first remark that such covariations do not rule out a non mentalistic alternative. As pointed out by a simulation theorist such as Goldman, a more parsimonious interpretation would suggest that mirror neurons activity "did not constitute the attribution of an *intention*, but only the prediction of an *action*. Since an action is not a mental state, predicting an action would not qualify as mindreading." (2009: 240; italic by the author) Moreover, when prior intentions are more sophisticated—as in the previous example of social intentions pointed out by Jacob and Jeannerod—it is doubtful that neural activity matches the complexity of

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[22] In reality, Jacob and Jeannerod talk about "social intentions", but we can equally refer to prior intentions.

prior intentions. So, it remains that at least in complex cases, simulating someone else's different actions is too fine-grained in order for it to be accounted for in terms of mirror neurons' firings.

We cannot enter here into the complex debate on the level of analysis reached by mirror neurons activity—prior vs. motor intention; but see (Meini 2007; Goldman 2009; Jacob 2009). In agreement with these kinds of argument, it seems to us that what mirror neurons do is a too basic level of simulation, unable to deliver genuine psychological interpretation. Thus, with regards to our thesis, it seems to us that the situation could be described as follows. It may be true that there is a notion of simulation which is not pretence-involving and that it can be based on a certain kind of neural activity—specifically, on mirror neurons' activity. Nonetheless, neural simulation, which is the most interesting notion of simulation with a view to defending a genuine, simulation theory—i.e. a simulation theory not committed to metarepresentational competence - can hardly ground even some ordinary aspects of naïve psychological competence, let apart the richness of full-blown human mindreading. Thus, if one wants to mobilise a notion of simulation to account for mindreading, it must be a notion which involves pretence; hence, if we are right, a—definitely weak, or minimal—form of metarepresentation.[23]

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