

## **The Philosopher on the Merry-Go-Round: The Nonconceptualist Meets the Animal Psychologist**

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Abstract: Nonconceptualist philosophers argue that thanks to evolutionary continuities between animals and humans, the nonconceptual contents possessed by nonhuman animals have remained throughout the evolutionary development of our species as a basic trait of our minds too. My claim in this paper is that arguing that nonhuman animals have nonconceptual contents in order to defend the presence of the latter in humans, would still leave open the question of how these nonconceptual contents are used by linguistic creatures. But this would bring the nonconceptualist to the exact point where she started: trying to show that there are mental contents that can appear in beliefs and/or in reasoning processes that are not conceptual or linguistic, turning the continuity argument useless for her purposes.

### **I. Riding the Carousel**

There is a well-known debate going on in the philosophy of mind between conceptualism and nonconceptualism. The main tenet of conceptualism is that the contents of someone's mental states can only come to hand if such individual has a repertoire of other mental contents that "brings into light" the content of the original mental state. It also claims that one can only have beliefs if one can give reasons for having those beliefs. Only mental contents that can be part of a reasoning process can be part of what one is aware of and what one can use to grasp the contents of other mental states. They think that

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the only contents capable of doing all this are conceptual contents. So, what they claim is that only conceptual contents allow us to have explicit reasons to endorse our beliefs and only conceptual contents and the reasons they appear in can be consciously accessible to an individual. (For a classical conceptualist argument see Sellars, 1956; for more recent arguments see Brewer, 2005 and McDowell, 1994.)

There is a nonconceptualist position that contests this view. Its main tenet is that there are ways of representing the world that do not require one to deploy one's conceptual repertoire at all. According to the nonconceptualist there are genuine mental contents, i.e., representational, that can play a role in strings of reasoning and that can still be contentful without being themselves conceptual nor relying in any other conceptual contents (available or not to a creature).

Having set up the problem in such a coarse fashion, let's analyze more carefully one of the nonconceptualist main arguments: the continuity argument.

#### *1.a. Playing around with animals*

There is a huge number of arguments nonconceptualism has come up with to justify the existence of nonconceptual contents. They usually try to show the necessity of nonconceptual contents given certain phenomena the conceptualist position cannot account for. A famous one is the belief independency argument, according to which certain empirical beliefs are conceptually impenetrable. Examples of this argument are the Müller-Lyer illusion or the waterfall illusion (Crane 1988). By far one of the most recurrent arguments is the one of fineness of grain. According to it, there is more information contained in nonconceptual contents than a concept can grasp, so it is due to our perceptual discriminatory abilities and the richness of our perceptual life that such nonconceptual contents must be available. (Just to mention some of them: Dretske, 1981; Peacocke, 1992, 2001b; Tye, 2005, 2006.) Kelly (2001) has come up recently with a situation-dependent argument, according to which the situation of a property can only be grasped nonconceptually, v. gr., the blue in a cotton sweater and the same hue of blue in a plastic cup aren't the same. Another invoked defense of nonconceptual

contents is that we need to explain acquisition of concepts and the best way of doing it is via nonconceptual contents. (Everywhere in the literature, but most explicitly in Roskies, 2008. However see Sellars, 1956 for a defense of conceptualism and at the same time a rejection of nativism.) Finally, another argument in favor of nonconceptual contents is the one of subpersonal processing. According to it, nonconceptual contents are the kind of contents that we use to process information before it gets onto the personal level. (The classic position here is Evans, 1982. See Bermúdez, 1995.)

Despite all of these and other insightful arguments for defending the legitimate role of nonconceptual contents, philosophers also appeal with regular frequency to what has been called the continuity argument. According to Peacocke, one of the most conspicuous defenders of nonconceptual contents, the crucial arguments against conceptualism stem from animal perception. Toribio (2007) considers that the “canonical formulation” of the continuity argument is the following:

The most fundamental reason [for recruiting nonconceptual contents]—the one on which other reasons must rely if the conceptualist presses hard—lies in the need to describe correctly the overlap between human perception and that of some of the nonlinguistic animals. While being reluctant to attribute concepts to the lower animals, many of us would also want to insist that the property of (say) representing a flat brown surface as being at a certain distance from one can be common to the perceptions of humans and of lower animals. The overlap of content is not just a matter of analogy, of mere quasi-subjectivity in the animal case. It is literally the same representational property that the two experiences possess, even if the human experience also has richer representational contents in addition. If the lower animals do not have states with conceptual content, but some of their perceptual states have contents in common with human perceptions, it follows that some perceptual representational content is nonconceptual.” (Peacocke 2001a, p. 613-614)

I allowed myself to quote such a long paragraph because I disagree with almost every single line of it. My aim in this paper is to show how this way of reasoning about animals (and humans!) isn’t appropriate. Just to be explicit:

- a. I don't think that the overlap in animal and human perception is any kind of fundamental reason against conceptualism.
- b. I'm not reluctant to attribute concepts to other animals.
- c. I do agree that representing a flat brown surface as being at a certain distance from one can be common between us and other animals.
- d. I don't believe there are *exactly* the same representational properties between human and animal experiences.

I will not say anything concerning (b) or (c) in this paper. Instead, I will focus explicitly on (a) and to a less extent to (d). Briefly, I think that appealing to animal minds actually isn't very useful to the nonconceptualist enterprise. The reason is that even there was something like nonconceptual animal contents, and even if the latter were preserved evolutionarily in humans, they would be in a "pool of mental entities" entangled with conceptual contents too. And since the notion of concept as is understood by the conceptualist is almost merged with linguistic abilities, we can say that the problem is that for linguistic creatures nonconceptual contents are surrounded by linguistic-conceptual contents. So the questions the nonconceptualist should be asking are if the nonconceptual contents *in that precise human pool* can be singled out, if they can do something by themselves or if they can do things their linguistic-conceptual rivals can't. But if these are the relevant questions (and the conceptualist would only take these to be the relevant questions), then appealing to the way nonlinguistic animal minds work is actually irrelevant. This is why I think the nonconceptualist is just taking a useless trip in the carousel when appealing to animal cognition.

In the following sections I will analyze a particular case of the animal mind literature: Theory of Mind. I will try to show how the logic of ascription and explanation of an animal mental ability drives us into language, higher-order mental capacities and abstract concepts when dealing with the same ability in human beings. But before going through it, a disclaimer.

*I.b. Caveats*

I just want to leave clear what are my tenets and what aren't. I don't share the assumption that concepts and language should be identified, at least not regarding nonhuman animal minds. Just as Colin Allen says, "the close connection of language to concepts in humans has seduced many into thinking that the two notions of language and concept cannot be disentangle." (1999, p. 39) The notion of concept, I believe, can be coined completely aside from language. Of course, from this it follows that I don't share the assumption of the debate according to which animals don't have concepts. In particular, I don't think animal concepts should meet all the philosophy of language requirements they are usually supposed to meet. (See Gunther, 2003; McAninch et al., Forthcoming)

It's important to say too that this is no attempt to defend the conceptualist view. I'm just claiming that nonconceptualism shouldn't mess up with animals, so it will have to trust the rest of its artillery. So, even though I think the whole debate is interesting, I think it should stay in its epistemological framework since the appeal to the animal psychology literature may actually turn up useless.

Finally, I should just mention that general research on animals, both for the sake of it and for understanding humans better, is a completely legitimate task. My claim is much more moderate since I'm just claiming that the philosopher should refrain from appealing to animal minds *in the restricted case of defending the existence and workings of nonconceptual contents in human minds*.

Once done with my personal disclaimer, let's try to read monkey minds when they are doing mind-reading.

## **II. Theory of Mind in Primates**

We have to ask if the nonconceptualist continuity argument has any plausibility considering what we know so far about nonhuman animal minds. However, the most obvious and direct question, i.e., Do nonhuman animals have

nonconceptual contents? is really hard to answer. On the one hand, for the conceptualist philosopher the answer might be irrelevant since she usually doesn't deny that other animals can have subpersonal states with some kind of content. Their worry is mainly that the content of those states is idle unless it forms part of what Sellars called the space of reasons, namely, among other things, to be part of inferential reasoning and to depend on a good deal of concepts. On the other hand, the nonconceptualist philosopher considers that the answer to the question is affirmative almost by the mere definition of the problem. Now, in a more empirical landscape, for the psychologist the terms used by the philosopher are very odd, and they usually prefer to frame the problem in other terms<sup>1</sup>, namely, either as the possession or non-possession of concepts (as opposed to mere perceptions) or in a behavioristic/mentalistic opposition. However, I think that despite the difficulty to answer the question just as it is formulated there is at least one interesting way to deal with it from an empirical standpoint.

One way to show that the nonconceptualist argument actually follows is showing that other features of the mental repertoire present in animals are actually present in humans too. Even though you avoid talking about nonconceptual contents, at least you can come up with a general argument of how mental features present in animals are 'inherited' into human minds. If we take the continuity argument to be of the form *if X is a mental feature of animal minds, then X ought to be a mental feature of human minds*, then the nonconceptualist can embrace certain hope.<sup>2</sup> Here, of course, certain nuances have to be done. First, it's important to notice that the consequent of the conditional makes a modal claim. Second, that in order the modal claim to follow, X has to be a sufficiently widespread trait across nonhuman species. This requirement is to guarantee that X is a somewhat basic mental feature of the animal kingdom or at least of some classes within it and not just a feature

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<sup>1</sup> I think it's actually a different problem, but since the language they use is similar, we can use the empirical research to help find a way out of the philosophical labyrinth.

<sup>2</sup> I say she can embrace just "certain" hope since she will still have to deal with the problem of determining if the empirical evidence in animal psychology is in some sense proof of existence of *nonconceptual contents per se* in animals.

of a particular species.<sup>3</sup> Given these requirements, I propose to take Theory of Mind (ToM) as an exemplar of an empirical study where the presence of one mental feature is continuous, at least in some sense, between nonhuman and human animals.

Using ToM I will try to show how despite recent proof of presence of it in different primates, there are still obvious gaps between human and nonhuman mental abilities which are usually bridged with language. Before I start this endeavor it's important to explain why I chose ToM for my argument. First of all because we know what it is to have a ToM just by introspection of how we attribute intentional states to other creatures. Also because there is a good amount of empirical research both in humans children and nonhuman animals (especially primates but there is some evidence in birds too). What is crucial is that the debate of ToM within the animal psychology literature does not involve (at least explicitly) any talk about concepts. If the presence or not of conceptual or nonconceptual contents both in humans and in nonhumans is what is at stake, the analysis could seem biased if relying directly in the animal literature on concept possession. Since what I'm interested in is to show how the *general form* of the continuity argument cannot serve to the nonconceptualist purposes, then ToM can do the work, despite there is no explicit talk about concepts.

Finally, I just want to pinpoint that the order of the proofs are irrelevant for my purposes. When appealing to the continuity argument, the nonconceptualist is trying to show that *X is present in humans, because it is present in animals*. The research in ToM starts from the assumption that we know for sure that we have ToM and then asks whether animals (and children) have it or not, and in case they do in which way. As we'll see in the following section, this asymmetry isn't a relevant issue since—again—I'm just interested in showing that the general form of the nonconceptualist argument is useless for her interests.

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<sup>3</sup> My analysis of Theory of Mind in primates isn't as wide as I would like, but it considers at least two different species and, even though I won't say anything in this paper, similar results have been found in scrub jays, which not only is a third species, but a different class.

*II.a. A Short History of ToM*

As defined by Premack & Woodruff (1978), an individual has a ToM when “the individual imputes mental states to himself and to others (either conspecifics or to other species as well).” (p. 515) According to them, having a ToM amounts to two main abilities: imputing not directly observable states and using such system to make predictions, specifically about the behavior of other organisms. Their main concern was regarding the presence or not of a ToM in chimpanzees (*pan troglodytes*), but the question might be asked for any other species. By the time they reported their first experiments, they considered some questions were too complex to be answered. Questions like: Is chimpanzee ToM a good or a bad theory? Do they have a complete ToM or just a partial one (in comparison with human ToM)? Do their ToM works in the same ways as ours? Given the complications of their time, they restrict themselves to a yes or no question: Chimpanzees have or have not a ToM? In their seminal paper although clearly stating their reserves about their results (for example, regarding whether her chimp understood the intentions of an actor in a short film or if she was just choosing biased by her feeling towards the trainers that appeared in the movie), Premack and Woodruff concluded that “the ape could only be a mentalist [since] he is not intelligent enough to be a behaviorist.” (p. 526)

Probably by the end of the seventies Premack’s question was pertinent to make, and the research program it triggered is proof enough of it. However, it prevented at the same time a more subtle analysis of the kind of ToM that might be or not present in primates.<sup>4</sup> The worries regarding a discreet interpretation of ToM in chimpanzees seems pretty natural. (See Tomasello et al., 2003b.) There is a huge risk of anthropomorphizing if we impose the view that the only kind of ToM primates can have is *the* ToM we have. Considering that they should be able to interpret others’ intentional states in every single way we do in order to entitle them with a ToM is a very sloppy move. We rather have to interpret the generic label “theory of mind” as a wide range of processes of social cognition. For this main reason the research during the last

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<sup>4</sup> As announced, I will restrict the following analysis to primate studies; however, interesting research of ToM has been done within the avian domain. As tokens of it, see Clayton et al., 2007; Emery, 2004; and Emery & Clayton, 2001.



decade has more precise goals and, thanks to more subtle experiments, scientists are now more likely to determine if primates have at least some kind of ToM.

Despite some negative results during the nineties (most of them by Daniel Povinelli's lab at the University of Louisiana (Povinelli, 2000), but also by Tomasello at the Max Planck Institute in Leipzig (Tomasello & Call, 1997)), there are now two different groups claiming that primates do know others' mental states. Nevertheless, both labs make their claims with certain reserves. The first one, at the Max Planck Institute in Leipzig, claims that chimpanzees can know what other subjects (humans or not) see and what not, but they don't know what others believe. The second one, at Yale, claims that Rhesus monkeys (*macaca mulatta*) exhibit a ToM only within certain contexts, more specifically, when monkeys are in a competing scenario. Let's examine each lab's proposal at a time.

*II.b. The Leipzig Group: Chimpanzees know what others see but not what they believe*

The main claim of the Leipzig group is that chimpanzees understand others in terms of a perception-goal psychology, as opposed to a human-like belief-desire psychology. (Call & Tomasello, 2008, p. 187) Whereas Povinelli and colleagues (Povinelli & Vonk, 2004) insist that chimpanzees understand only surface-level behavior, Tomasello's group try to claim that even though chimpanzees aren't able to understand others' beliefs (v. gr., they don't pass the traditional false belief task), all the same they are able to know others' perceptions and goals.

Call & Tomasello (2008) present different kinds of studies where understanding the experimenter's intentions is required for explaining the behavior of the animals. They reject the possibility of a behavioristic explanation basically because too many different kinds of explanations would be required for each type of experiment (getting/finding food; reacting to partner's reactions; imitation). So many diverse explanations, they assume, show more an ad hoc strategy than a real explanation. After all, Povinelli's claim would require a good

variety of explanations in order to hold, but, recall Premack's conclusion: apes aren't smart enough for being behaviorists.

The same story is told to us regarding the understanding of seeing. Tomasello & Call (2006) count up to 12 different behavioristic explanations (almost all by Povinelli) in order to account for chimpanzees understanding what other humans and chimpanzees are able or not to see. They simply go for a more parsimonious explanation and conclude that regarding what others can see chimpanzees definitely have a ToM.

Despite all the positive findings of chimpanzees understanding goals, intentions, perceptions, and even knowledge, there is no current evidence that they understand false beliefs. They systematically fail in tasks where they have to predict other's behavior from what the latter believes but it's not the case anymore. Even though they actually can tell the difference between what a subject knows and what she is ignorant of, they are not able to predict the behavior of ignorant subjects. (Kaminski et al., 2008)

As Tomasello and Call put it, the answer to Premack and Woodruff's question is a yes and no. Yes, chimpanzees can act according to indirectly observable facts, i.e., mental states of others, and they can make some predictions of others' behavior. However, they systematically fail to pass the false belief task and apparently, recent discoveries show that they don't do so well in other sensory channels like audition. (Bräuer et al., 2008) This, of course, could be due to inappropriate task conditions, but also to a natural incapability. This is just a hypothesis of mine, but probably in order to predict someone else's behavior while ascribing a false belief to her, requires a good deal of conditional thinking, which in a propositional way of putting it would amount to: "*Even X is in Y, if S doesn't know that X is in Y, and S beliefs instead that it is in Z, then S would act as if X were in Z.*" Also it might be needed a sophisticated way to differentiate between self-ascription and alio-ascription of intentional states. Even though chimpanzees can differentiate between knowing-states and not-knowing-states, so far experiments show that they lack something in order to ascribe a false belief instead of just ignorance of a fact.

*II.c. The Yale Group: Macaques know what others see, but only when competing*

During the nineties Povinelli and Eddy (1996) published a long study where they try to show that young chimpanzees are not sensible to what others see. They trained chimpanzees to beg for food. When presented with two experimenters, one that could see them and one that couldn't, their working hypothesis was that if chimpanzees know what others can see and what not, they would gesture only to the experimenter that was seeing them. They actually gestured more frequently to experimenters that were clearly seeing them and not to experimenters that were clearly looking away. But they act randomly among experimenters with a blindfold, or covering their eyes with their hands, or with a bucket in their heads. They even gestured randomly with experimenters whose back was turned but were looking over their shoulders. Similar results were found for experimenters showing where hidden food was. They simply didn't get what the experimenter wanted to tell them. The kernel of their conclusions was that these apes have perceptual access to others' actions based mainly on body orientation, disregarding face and eyes, let alone psychological processes.

Despite the apparent conclusiveness of these experiments, they have been recently contested. First, through experiments ran by Brian Hare (Hare et al., 2000; Hare, 2001). His model placed a subordinate and a dominant chimpanzee into rooms at opposite sides of a third room. Both can see each other, but the subordinate chimpanzee was able to see a piece of food that was behind a barrier that prevented the dominant to see it. The subordinate systematically reached for the food that was "hidden" from the dominant. Apparently, within a competitive paradigm chimpanzees in fact are able to know what others are seeing, unlike to what happened within a cooperative context like in the one Povinelli was running his experiments. (See Tomasello et al. 2003a and Bräuer et al., 2007 for more results.)

Now let's travel from Germany to Connecticut. At Yale University, Laure Santos' lab showed that other primates, Rhesus monkeys in this case, can have a ToM too. Using a similar research paradigm to the one used by Brian Hare in the Leipzig Group at the beginning of the century, Santos' team showed that

macaques can display behavior based on the possession of a ToM *within a competitive context*.

Laurie Santos team in Cayo Santiago, Puerto Rico, ran a series of experiments where Rhesus monkeys show the exact abilities Povinelli denied chimpanzees. There are two main differences, though, in the experiments settings. Santos' subjects were free-ranging non-trained macaques, whose way of living has been preserved in the most natural possible way. In addition to the extraordinary ethological conditions, the rivalry context is a very important change to Povinelli's paradigm. Whereas Povinelli's chimpanzees were supposed to read the experimenter's mind in a cooperative context, Santos' macaques actually had to compete with experimenters for food.

The main assumption of the experiments is that monkeys will be motivated to take food when being undetected. This means that monkeys are able not only to follow gaze but to know the mental states of those whose gaze they are following. Success in this situation involves more than mere gaze following; subjects must spontaneously use information about the direction of an individual's gaze to make a task-relevant decision. (Flombaum & Santos, 2005) Just as an example of the six different experiments reported, in one of them monkeys stole a grape from a platform that was out of sight from one experimenter and not from the one that was in the visual field of the other experimenter. They did this even when the experimenters' bodies were in a 90° position towards the monkey, that is, when their bodies weren't facing towards the monkey. (Flombaum & Santos, 2005, p. 447-8) In this competitive context monkeys can even tell if the experimenters are looking or not when their eye gaze is occluded by an opaque barrier of different sizes. (Flombaum & Santos, 2005, p. 448-9)

In a follow up of this experiment, Santos' team showed that macaques are able not only to detect what others can and cannot see, but also what they can or cannot hear, and even relate it with visual information. (Santos et al., 2006) The experiment consisted in showing macaques two recipients each of them with a grape inside. Visually they were identical, but one of them have working jingle bells attached to it and the other one have noiseless jingle bells attached. The experimenter showed the recipients and then hides his face between his knees

avoiding eye contact with the subject. In an incredibly high amount of times, monkeys avoided the noisy recipient in order not to alert the experimenter (their competitor) and to be able to steal the grape. (By the way, the grape was sealed in the container, so they were actually unable to eat it once they reached the recipient. I wonder if after the experiments they gave them at least a nice reward!)

For discarding what they call the “fear hypothesis”, that is, that the macaques avoid the noisy container because they were afraid of the noise. So in a second experiment set up the same way, except that now the experimenter was actually looking at the monkey, the subjects approached the noisy container in a ratio of 2:1. Their hypothesis is that now that the macaques knew that the experimenter was already aware of their approach via visual contact, and then they don’t care anymore alerting him audibly.<sup>5</sup> Notice that they don’t explain why they approached the noisy container twice than to the noiseless one in this new setup. My guess is just that they were more curious and since they had nothing to lose regarding their competitor awareness, they gave it a try.

### **III. The Philosopher Rides the Merry-Go-Round**

So far I’ve just made clear what the philosophical debate is concerning nonconceptual contents and how a particular mental trait, ToM, works in some nonhuman animals. Now is when the nonconceptualist philosopher is ready to ride the merry-go-round (and literally, start going around). The point I want to make clear in this section is that without picking any standpoint in the evolutionary development debate, or in the nature-nurture debate or without trying to actually answer the question whether the difference between nonhuman animal and human minds is qualitative or quantitative (see Penn et

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<sup>5</sup> There has been recent disparity in the research regarding the auditory abilities of primates. Yale’s group claim is that macaques know what others can hear, while Leipzig’s group says chimpanzees don’t (Bräuer et al., 2008). The Leipzig’s group claim, however, is that in their experiment it was the experimenter who made the noise, so the subjects couldn’t infer that the dominant could also hear what themselves have heard, while in previous experiments by their group and the experiment ran by Santos’ team the noises are made by the subject himself. Whether this is the case or not is an empirical issue that should be determined in the following years.

al. 2008), there is the undeniable fact that humans can do many things animals can't. I just take to be true that our minds are much more complex than that of other animals. Almost any single mental ability present in animals is present in human beings too, perhaps with the notable exception of those representations dependent of particular sensory abilities: echolocation is the most perspicuous example, but also within perceptual senses we share with animals but that we have less developed. Take the memory studies in the aplysia. Definitely they are illuminating for understanding the nature of our own memory. ToM in primates is important to understand ToM in humans (especially children and impaired humans, like autistics; see Santos et al., 2007). The experiments with mirror neurons in monkeys have opened a whole new subject matter within neuroscience that can help us understand an enormous amount of things about the way we work. Nevertheless, the story is always more complicated with humans. The clearly more complex human brain, the culturalization processes, natural languages, abstract reasoning, and a long etcetera, impede easy extrapolations from the animal kingdom to our own species. At least these extrapolations cannot be done without extreme care and with several "tunings". (See Steel, 2008 for an attempt of explaining these tunings.)

Now, if the previous paragraph makes any sense at all, then the *easy* move of the nonconceptualist turns out to be a much more complex one. So far so good, the nonconceptualist can say. "We didn't think it was going to be easy or automatic, but the way animals cope with the world makes it clear that nonconceptual contents are present in them, and, therefore, in us." Even though this was true the nonconceptualist still has a major problem. And this is that his claim leaves him in the same starting point after appealing to animal minds. Briefly, I'm just trying to say: "if you're a nonconceptualist, keep trying from your armchair, since animal minds will bring you back there anyway." Let's take a step at a time.

### *III.a. Differences between ToMs*

Regardless of the results about the presence of ToM in nonhuman animals, we shouldn't swallow the bait so easily. It is true that the setups of the

experiments have improved a lot since Premack and Woodruff launched their seminal paper. It is also true that it is hard to evaluate the results in a mere behavioristic manner. Control experiments are ran to rule out at least the most obvious behavioristic interpretations, and the surprising results definitely point towards sophisticated animal minds.<sup>6</sup> All the same, there are relevant differences in how humans and primates deploy their ToMs.

First of all, it is extremely important to notice that the human ability to infer others' beliefs and desires is in a very important way non-contextual. We are not only able to understand what others have in mind when competing against them, but also when we are in a friendly situation. But, of course, that alone could be interpreted as just a proof of human ambition and desire to always obtain benefits from others. However, we are also capable of doing mind-reading in *neutral* situations. When playing with kids, in the bus, in a shopping mall, with our families and friends, etc. There is no need an action to be in neither our detriment nor our benefit our ToM to act. Let's say that our ability to know what others have in mind has overcome jeopardy situations.

Second, human ToM has overcome mere perceptual cues. We not only know what others have perceived (as Tomasello's results show), but we are able to attribute beliefs (either true or false), knowledge, and even the justification others have for entertaining their beliefs (we can understand why people believe what they do). This powerful ToM of ours sometimes leads us to "over-intentionalize" the world. We adjudicate intentional states not only to animals that can entertain them, but to non-mentalist living organisms like plants, or even to natural forces and objects like the Sun, the wind or the tides. So be it.

Finally, it's important to say that despite the amazing upshots of the research in the last decade concerning primates' ToM, they still do more or less in the tasks. It's true that running an experiment where you can't explain your subjects what their actual task is can explain some of the negative results, for example, in the false belief task. However, it's clear that an adult human in principle shouldn't fail at such a task, while primates have a nice error margin.

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<sup>6</sup> For some of these control experiments and the explanation of why a mere behavioristic explanation can be ruled out see Tomasello & Call, 2006; Santos et al., 2007. For the opposite position in primates see Povinelli & Vonk, 2004 and for a slightly more general discussion in the animal kingdom see Penn et al., 2008 and Penn & Povinelli, Forthcoming.

This shouldn't amount to disregard the results or to refuse fully authentic mental abilities to nonhuman animals, but it definitely shows considerable differences between animals and humans.

### *III.b. Explaining the gap*

There are a lot of explanations of why our minds work the way they do, but one of the most recurrent candidates is language. Some examples within psychology can be traced to the primatologist groups I've been talking about. Tomasello and Call, for example, consider linguistic processes are required for understanding beliefs:

The understanding of beliefs requires a fully representational theory of mind in a way that the understanding of other mental states does not, and chimpanzees simply do not have this fully representational theory of mind. [...] Children's development of a fully representational theory of mind, including false beliefs, is dependent on several years of linguistic communication—and of course chimpanzees are not evolved for this. There is much evidence for the role of language in the development of false belief understanding, including the findings that deaf children who do not learn sign language in the normal way are much delayed in this task and that children who are given special training in certain kinds of linguistic discourse pass the task earlier than those who are not given such training. (Kaminski et al., 2008, p. 233)

Hare backs up this idea. He says that “by using linguistic responses one can clearly demonstrate that a child is sensitive to the information to which another individual has access and not simply basing her response on their own perspective or the behavior of the other individual.” (Hare, 2001, p. 272) Other important findings within children are Xu, 2002 (but see Egan et al. 2007) and Ganea et al. 2007, just to mention a couple more. Even researchers like



Povinelli accept that “many human cognitive abilities rely on linguaform representations.”<sup>7</sup> (Penn et al. 2008)

Within the philosophical domain something very similar happens. Even people committed with ascribing animals with complex minds capable of bearing concepts and having thoughts, at some point use language when required. Just to quote an example:

There are certain types of thinking for which a linguistic vehicle is essential—and by this I mean a public language rather than a private language of thought. [...] A linguistic vehicle is required for all types of thinking that involve intentional ascent, or what is sometimes called metarepresentation. [...] Concept mastery requires the possession of a language. (Bermúdez, 2003, p. ix)

Very different philosophers such as Peter Carruthers and Colin Allen, all the same recognize that language plays a major role in human mental dexterity. “Besides its obvious communicative functions, language also has a direct role to play in normal human cognition (in thinking and reasoning). [...] Natural language is the medium of non-domain-specific thought and inference.” (Carruthers, 2002, p. 657; 666) And Allen, attributing concepts to nonlinguistic creatures, recognizes that “languages provide a structure that has a vast number of degrees of freedom with respect to immediate perception. Linguistic representation is, then, the basis for the most fine-grained system of conceptual representation that we know.” (Allen, 1999, p. 39)

These long quoting paragraphs are just to flag the fact that human mental powerful abilities and animal mental limitations are frequently explained by some or other language hypothesis. Now is time to ask, How does this affect (or not) the continuity argument? I think it affects it severely.

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<sup>7</sup> In this paper they reject that language can be a necessary or sufficient condition to account for the cognitive differences between humans and the rest of the animal kingdom. However, they concede that certain abilities depend on having language.

#### IV. Getting off the Merry-Go-Round

By now it should be pretty clear what my claims are. The main issue is that the nonconceptualist use of the continuity argument, and hence, of the animal psychology literature, at best can drive her at her precise starting point. If we consider again what was stated in section I, the main issue at stake between the nonconceptualist and the conceptualist is if there can be mental contents available for inferences and conscious representations independent of the direct action of concepts present in the mental repertoire of human beings. To use Sellars' example, Can John distinguish the color of his green tie without knowing a lot of other concepts and without knowing what are the standard conditions in which green ties look green?

Now let's ask what would do for the nonconceptualist to show that nonhuman animals can have conscious representations without any (Fregean) concepts and without giving reasons for the (empirical) beliefs they have? Certainly that one can move around the world pretty well without concepts. However, if the continuity argument is right and animal mental traits are preserved through evolution into humans too, the nonconceptualist would still have to deal with the presence of language and other rational abilities in normal adult human beings.

The case of ToM showed that a basic human mental trait can be traced down to nonhuman animals, which imply that a basic lower-level mental feature like nonconceptual contents, if present in animals, could be expected to be found in adult humans too. However, it is clear from the experiments in primates that the kind of basic ToM they display is partial when compared to what we humans can deploy. The general way in which mental abilities in animals or pre-linguistic children are explained when possessed by adult humans is by their exponential improvement with language, higher-order reasoning, inferential abilities, possession of abstract concepts, etc. Following this general method of explaining how animal mental abilities *pass* to humans, nonconceptual contents—in case there are such things—should go through a similar process.

The problem for nonconceptualism (unlike other legitimate uses of the animal psychology) is that it appeals to animal minds precisely for understanding how human minds can work without concepts, but they still need to explain how

those precise nonconceptual contents work in a human linguistic-like mind. But, of course, the only reason they came up with the continuity argument in the first place was to find an *independent* argument for the existence of nonconceptual contents.

Given this embarrassing situation for nonconceptualists, what I've been trying to show is that despite all their efforts, appealing to animal minds would only bring them back to a position where they still have to argue for the possibility of using nonconceptual contents by adult humans *independently* of their conceptual, linguistic and reason-giving abilities. As I see the matter, the nonconceptualist that appeals to the presence of nonconceptual contents in nonhuman animals has only rode the merry-go-round, played with the animals a little bit, went in circles, and, when the game was over, she has to get back to where she started, leaving the animals back in the carousel and getting a little bit dizzy.

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