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Do you mind?

(Commentary to Jill Byrnit: Primate theory of mind: A state-of-the-art review)

Byrnit's article is a very thorough presentation of empirical research done so far as to the subject "Theory of Mind" (TOM). "Do Apes and very small children know that other individuals know like themselves, and that these other individuals may not know the same, as they do themselves?" In the concluding remarks (p 40f) one can read: (italics by me)

"...by now it seems clear that with neither non-human primates nor human children viewing theory of mind as a cognitive entity that is either present or absent is not a particularly productive approach. Rather, theory of mind is better seen as a complex conglomerate in terms of which individual understands all other mental states in other individuals. This may happen at different levels of abstraction and may take different avenues in different primate species concerning what kind of mental states "theories" we entertain...

Maybe this and the other very prudent conclusions in the article are a symptom of a problem in this line of research. A symptom pointing to the fact that TOM is too poorly philosophically based. The researchers ought possibly to be better at telling problems needing empirical investigation from problems that need philosophical clarification. It seems as if problems with the latter are teasing the empirical endeavours.

However, this is a point of view we are to follow here. More specifically, we shall look closer at the questions: "What is the relation between behaviour and mind?" and "What are the relations between sensation, reaction, perception, knowledge, and action?" Throughout the empirical investigations one finds implicit assumptions about these questions that are very disputable but nevertheless not disputed at all.

Behaviour and mind

"Povinelli et al....cannot rule out the possibility that subjects are reacting to observable cues rather than to mental states. (p. 27, italics mine)

"...Woodruff & Premack's ...chimpanzee subjects begin to miscredit the competitive

trainer, suggesting that they learned to respond differently towards the two types of trainers on the basis of behavioural cues, not on differences in their intention. (p. 27, italics mine).

Notice, that here on page 27 it is implicitly assumed, that it makes sense to make a distinction between "behavioural cues" and "intention", and that the first mentioned is regarded as "observable cues", and that these cues are seen as something else than "mental states".

If we for a moment regard mature perception in humans, this distinction is very troublesome. I once showed empirically that we human beings are much better at observing intentions/mental states than sheer movement in time and space. It is very much easier for us to perceive what a fellow man is up to than how his corpus is moving. (Schultz, 1988).

Koffka (1936, pp 30ff) once argued that there is no difference between a description of behaviour and a description of mind; it is one and the same thing. If you look at a mouse hiding because a cat is chasing it, you may say that the mouse behaves in a way that makes it difficult for the cat to catch it; but you may as well say that the mouse "intends" to avoid contact with the cat. Even the strictest attempt to avoid mind-concepts in descriptions of behaviour has never succeeded, as From (1953, p 21) like many others correctly has pointed out. It is actually when a moving object is perceived to have a mind that the motion is called "behaviour". We do not say that a stone falling from a cliff is "behaving"; it is just moving because its motion is not an expression of mind. Therefore "behaviour" is by definition "intended movement"

For this reason the expression "responding on a basis of behavioural cues" means exactly the same as "responding on differences in their intentions" if we are dealing with mature perception in humans.

This is of course not the case. We are dealing with perception in apes and premature perception in humans. Therefore the seemingly two synonymous expressions may carry differences in meaning after all. That depends on how you conceive on the relation between sensation, reaction, perception, knowledge, and action.

Sensation, reaction, perception, knowledge and action

The relation between these five phenomena can be described like this: "Knowledge" is in efferent direction filtering and

structuring the stream of afferent impact coming from “sensations”, and because of this gatekeeper-effort it is possible to “perceive”. Without a pre-existing knowledge that actively meets the impact from the world on the sense-organs, it is impossible to perceive. It is not correct to think that “perceptions” are conglomerations of “sensational” cues that passively flow in afferent direction into a “mind-container”. That it is not correct is argued by Popper (1972, p 61), Thing Mortensen (1972) Mammen (1983) and a lot of other people including myself (Schultz, 1988, p 19). The problematic “container-viewpoint”, as Popper ironically calls it, is an unfortunate inheritance from Locke (1690) that nevertheless affects parts of mainstream psychology, and I think that the research in TOM discussed in the article is somewhat haunted by this ghost as well.

Thing Mortensen (1972) has criticized psychologists for shuffling the concepts of “reaction” and “perception” in a sloppy way. If a readiness in an organism is a predetermined way of answering an impact of a certain stimulus, you may very well call this answer a “reaction”. In principle it is then comparable to switch-on/off gadgets on our electrical machinery. However, if the readiness in the organism is an ability to gain insight in some of the realities in the world, and to choose an action based on this insight, you must not conceive this action as a re-action as it is an action proper. A readiness to gain insight in some of the realities in the world by gate-keeper-selection of impacting stimulation is exactly what we mean by “perception”. Therefore, Thing Mortensen argues, the concepts of “action” and “perception” belong together, and in using these concepts you are presupposing knowledge. The concept of “reaction”, on the other hand, belongs to a notion of “answering a stimulation with a predetermined readiness”, and this has nothing to do with knowledge.

As long as a living organism reacts on incoming cues, it has no knowledge and of course therefore no TOM, it is not until living organisms choose an action in accordance with a perception that the knowledge on which this perception is based may include TOM; but it may also be an action based on a less advanced knowledge that does not include TOM.

Three, not just two categories

To discuss whether an ape/child is responding on the basis of behavioural cues or on the basis of perception of another individual's intentions is thus a discussion that is philosophically blurred because one needs three categories in order to attack the problem; namely: 1) Is the ape's response a reaction based on predetermined readiness 2) is the ape's response rather an action based on knowledge without TOM, or 3) is the ape's response an action based on knowledge with TOM? In order to understand the theoretical issues in TOM-research, one has especially to understand the second mentioned possibility proper, and not reduce it to the first one. It is important because perception without TOM may be as old as mammal life or even older, whereas perception with TOM very likely is to be found only in life approaching the human

summit, and in order to understand issues on the borderline between ordinary mammal perception and human perception, one must not understand ordinary mammal life as life without knowledge.

An important trajectory towards TOM may of course be the ability of joint attention. In the article (p 30) it is said “the participants involved must be *aware* of their shared attention” (My italics). What does “aware” mean in this context? Is it just “knowledge” or is it “knowledge of knowledge”? The conscious/unconscious problem has to be confronted.

Conscious/unconscious

If Freud (1917) was not the first one to recognize that “knowledge, you do not know you have” is knowledge proper and not sheer predetermined readiness without knowledge, he was still the one who succeeded in getting it broadly accepted through the concept of “unconscious(ness)”.

One does not have to like this concept. I for one do not. The difference between an anaesthetized mammal (say; a dog) and a mammal that is awake is a difference between living on predetermined readiness alone and living on this under guidance by knowledge. A dog waking up from anaesthetization is getting its usual knowledge back, and it is natural to call this process “gaining consciousness”, not to call it “gaining unconsciousness”. Nevertheless, Freud's description of the unconscious mind is in many ways a description of basic mammal-like knowledge that we humans share with our mammalian relatives. I prefer to call it “knowledge that is not reflected”. (Schultz, 1988, ch 12) Thereby I avoid the term “unconscious” to denote mammalian perception.

If I am out hunting with my dog, I am sure that this animal-friend of mine is conscious of our situation; but is it also “aware” of it?

If “awareness” is a concept meaning “highly focused perception”, you may very well say that my dog is aware of our joint venture. If the concept, on the other hand, means that “the perception that took place a moment ago” is focused through memory in such a way that one so to speak looks upon the perception one just had, it is highly unlikely that my dog is “aware”. It is this kind of looking at one's own perceptions that we usually call reflections or phenomenological perceptions, and often this summit in perceptual life is considered the one and only qualified to be “conscious”.

The concepts “awareness” and “consciousness” both carry the problem that they may mean at least two quite opposite things. Sometimes it means to be perceptual engulfed, and sometimes it means to be reflective about perceptions you just had and therefore in a way not very engulfed at all.

What then does it mean to be aware of joint attention?

Functionality and intentionality

Pre-existing readiness to meet the world is of course always qualified through evolution, whether this readiness is an ability to react automatically or to choose an action due to knowledge.

There are purposes in all life utterances and therefore they are always functional. Life-forms that only manage to react automatically may be “programmed” to “move quickly when changes occur in light/shadow sensations”. Let us say that such changes in a given situation are due to the fact that a person tries to kill a fly.

Ontologically speaking, there is in the real world a person who intends to kill a fly. Epistemologically speaking, the intending person knows this whereas the chased fly does not.

Furthermore, there are two epistemological possibilities for the person: 1) The person may be perceptually engulfed in chasing that damned fly disturbing his sleep, or 2) the person may reflect the fact that “here I am in the middle of the night chasing a fly”.

Which of these two possibilities is the one that deserves to be denoted “awareness”?

Epistemologically speaking, the fly does not know that someone tries to kill it; but it is sensing a change in illumination and this always triggers fast movement. The fly might have had a more pleasant and efficient life if it could tell the difference between an approaching person who intends to offer some sugar and a person who intends to kill; but, alas, this distinctive relation to the world is not possible on the reaction level. The fly on this level just reacts on movements in the surroundings, not on intentions.

When life-forms, however, develop and in due time become animals with knowledge, the ability to perceive functionality in other individuals will be a very important thing to be able to perceive.

Usually we call purpose in life-utterances that is not known by the actor for “functionality” whereas purpose known and maybe even planned by the actor is called “intentionality”. Very early in evolution the ability to perceive and thereby directly observe functionality in others becomes a very important thing whereas the ability to tell functionality and intentionality apart is of no big importance. If a stinging jelly-fish is chasing you during summer-bathing in the sea, it is important that you immediately observe the purpose in the behaviour of the chasing animal whereas it is not very important for you to know, whether the dangerous animal knows what it is doing or not.

Levels in TOM

Precisely the fact that perception of purpose in other individual’s behaviour is important and therefore presumably already present very early in mammal life, and that the ability to distinguish between functional purpose and intentional purpose is of no importance in pre-human life, the task of

defining exactly what should be meant by TOM is not an easy one.

A “behavioural cue” in a life-utterance observed by a higher mammal, not least a primate, is of course a percept of the purpose in that utterance. In talking about higher mammal perception “to observe a behavioural cue” and “to observe functionality” is one and the same thing. Adding the fact that functionality and intentionality do not have to be distinguished in this context, we can conclude that the expressions “behavioural cue observed in others” and “intention observed in others” are synonymous; they simply point to the same thing, just as they do when we consider mature human perception, such as initially pointed out.

If you have a dog and intend to go for a walk you know how easily the dog observes it. It has, however, not the capacity to know whether this intention of yours is sheer functionality or it is planned intentionality. Nevertheless; it reads your purposes to some extent.

Knowing that another individual has purposes is thus not to know the level on which this purpose is expressed. Interestingly, small children at the age-level examined in TOM-research usually have difficulties in understanding that pets do not match their own level. I once observed a boy aged three years explaining to a frightened cat that a loud noise coming from outside the house was harmless. It looked as if he no doubt correctly regarded the cat as an individual with a mind but nevertheless incorrectly overestimated the level of this mind.

I do not think that an ant knows anything. This creature is probably living on reaction-level where it is only sensing but lacks perception/action/knowledge. Therefore it does not know anything about the purpose of an approaching anteater. It neither under- nor overestimates the mind of its enemy because it lacks entirely the ability to estimate anything.

What about the anteater? As a primitive mammal it probably perceives small bits of realities in the world; it chooses actions accordingly and it knows something. When such a creature perceives functionality in others it probably takes place on a level preventing estimation.

If it is so, we are dealing with a level in life where mind can be perceived but not compared to the perceiver’s by the perceiver. Is this level enough to give some TOM-credit?

Comparing the perceived mind with the perceiver’s by the perceiver can be done by the mature human mind. We have already mentioned that children tend to overestimate the mind of their pets.

Maybe estimation of other minds has to do with caring, such as also touched upon in the article. Perhaps there is some truth in the notion that when people care about others, they tend to overestimate whereas not to care means to underestimate. If so, ability to perceive as well as estimate another individual’s mind has probably to do with long periods of parental care in social, animal life, such as also suggested in the article.

Still, one has to be cautious here. There may be an intermediate level between 1) perceiving other minds and 2) perceiving and estimating other minds. This level could be defined by an ability to project own mind-capacities upon

others. The before mentioned child aged three who overestimated the mind-capacities of his cat might of course do so because he cares for the cat but he may also do so because he believes other mind-capacities to be like his own. If that is the case, he knows that the cat does not yet know what he knows, therefore he is telling the cat what he knows; but he wrongly thinks that the mind-capacities of the cat to learn by information is on level with his own. There may thus be these levels in the “complex conglomerate” (p 41) we call TOM.

- ability to perceive purpose in other minds
- ability to perceive difference in knowledge between own mind and the other and projecting own mind-capacities into the other
- ability to perceive differences in mind-capacities between own mind and others
- ability to perceive the difference between functionality- and intentionality-purposes

These are the levels springing out of the speculative considerations offered here in this comment. I think that they can be used to substantiate the following questions:

- Is it correct that the TOM-research tradition is bothered by a distinction between “observables/behavioural cues” and “mind/intention” that does not make sense?
- Is it correct that the TOM-research tradition is blurred in its definition of “awareness”?
- Is it correct that the TOM-research tradition in general might profit from a better theoretical foundation?

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