Do Cats Have Beliefs?

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§1   Cat Minds?

In our dealings with our pets, and larger animals in general, at least most of us see them as conscious beings. We say "the cat *feels* pain" ascribing sensation. We notice "My cat *wants* to get in the kitchen because *she thinks* there is some cheese left" ascribing beliefs and desires. Explanations likes these can be employed on a variety of occasions, and usually we are content with what they say. We seem to understand *why* our cat is doing what she does. On the other hand the employment of human categories to animals seems to be problematic. Reflecting on the details of human beliefs, for example, casts serious doubt on whether the cat is able to believe anything at all. Clever as they are none of my cats has the concept of *kitchen*, because a kitchen is – roughly – a functional part of an artificial dwelling (a house). Since cats do not built houses and do not prepare their food, the place the cat is walking into cannot be conceptualized by the cat as *kitchen*. Even the concept of *cheese* in its generality (made out of goat or cow milk, or camel milk …) is beyond the cat. So when we say what our cat believes and wishes we use our concept, in fact express a belief that a human being might have in a similar situation. What, then, does the cat have? Does a cat have beliefs? Or at least something like beliefs? And this leads to the further question: Do cats have something like concepts they employ in whatever it is they have which is similar to beliefs?

This chapter tries to reflect on methodological issues when investigating animal minds (focussing here on a mammal like a cat). From the philosopher's perspective the most pressing problem is how to talk about cat minds. Can we just employ the vocabulary of human psychology? If not, exploring cat minds contains the non-trivial task of introducing a terminology that allows to see the distinctness of cat and animal minds *and* to see the connection to the human case. Dealing with that problem can by a genuine job for a philosopher of (animal) mind in cognitive science.

§2   How To Explore the Cats Mind?

Which is the science to study cat minds? There is no single of the empirical sciences that covers all ingredients of a theory of (cat) minds. We need behavioural concepts as well as neurophysiological evidence. We need evolutionary considerations as well as simulation. *Cognitive Science* is defined as such an interdisciplinary research programme. Including philosophy of mind, psychology, neurophysiology, information science, artificial intelligence, and cognitive linguistics the treatment of some topic has to reach an equilibrium between our intuitions and a phenomenological approach (describing our own experience), philosophical conceptual analysis and various empirical approaches and model building. Equilibrium means in *this* context that we have to reach a *coherent model* which incorporates as much of our intuitions concerning cat consciousness and integrates at the same time

the findings of the different co-operating sciences. Taking this approach to animals defines the sub-field of *Cognitive Ethology* (the study of intelligent animal behaviour focussing on the involved cognitive abilities). In following this approach none of the participating sub-approaches is favoured. There can be various trade-offs in case of conflict. Investigating cat consciousness seems to be especially difficult since one can ask whether our usual concepts of human cognition should be applied to cats or whether our phenomenology (telling of our mental lives) can be used at all as a heuristic device. On the other hand the treatment of cat consciousness might be a test case of various trade-offs and checks between, say, philosophical definitions of mental terms as to be applied to cats, neurophysiology, our reflected intuitions and ethological model building based on a computational theory of cat minds. For example – and in contrast to cats – the intuitive intentional description of a bug (e,g, "the bug *believes* there is a wall ahead") is given up as unwarranted anthropomorphic given that the bugs behaviour can be simulated by a little robot, which certainly is no intentional system. The neurophysiological guideline to look for human like neurophysiological structure excludes non-vertebrates as candidate for awareness but is disregarded with respect to cephalopods since they exhibit intelligent behaviour (e.g. in a maze). Our mental terms as applied to humans and tied to the human phenomenology set the agenda for looking for cat cognitive abilities, but caution is required: the computer theorist Turing recognised that the question „Can machines think?" will be decided immediately if one were to start from the then existing understanding of the two terms. If "thinking" is defined as a genuine human faculty and "machines" as something like a steam engine the question is answered by definition. Something like that applies here. Consciousness as we know it from the human case has a highly complex structure. Especially it can be argued that consciousness in the human case is identical or inseparable from self-awareness. Philosophers from the mentalist tradition (Immanuel Kant, Neo-Kantianism), the phenomenological movement (Edmund Husserl, Jean Paul Sartre and others) and some analytical philosophers (like Roderick Chisholm) have tried to capture how being conscious involves being aware of being conscious, being immediately aware of oneself (as being conscious), being aware of being the agent of the acts of consciousness – and so on. It should be clear from these hints that human consciousness is a very complex structure the explication of which in philosophy employs a fine grained model. Once you look at this complexity which has to be preserved whatever theory or approach you favour, I take it to be absurd to ascribe this structure to even highly developed mammals like cats. This, however, does not turn the cat into a zombie like being. We cannot put ourselves in a state of mind which corresponds to some kind of consciousness below human consciousness. We cannot get into the cats mind ourselves. Whether there is something like cat consciousness cannot be decided phenomenologically (from a first person perspective). We assume that there could be something like that to leave the question of cat consciousness open. The evidence supports the thesis that vertebrates (and cephalopods) at least show some kind of awareness whereas it seems dubious whether insects do. So whereas in the human case consciousness is equivalent to self-awareness there may be a level of awareness (compared to the human case

somewhere below non-articulated explicit awareness) in organisms which have phenomenal states and distinguish themselves (in different degrees) from their environment and their flock. One may speculate to think of this awareness in cats to be somewhat like the right hemisphere thinking in average humans; there has to be something functional similar to an "I think" lacking although the step to an explicit self-awareness. In general it might turn out a fruitful attempt to start with human cognitive faculty x and see whether animals have *something like x*. From this *something like* way of rendering things a appropriate terminology of cat ethology can take off. Belief is the example chosen in this chapter.

§3   Concepts, Cat Concepts And Systematic Recognition

In philosophy one might ask first what concepts are. Are they abstract entities, symbols in the mind, patterns of behaviour or what? Does being in possession of a concept mean to have some mental representation, to manipulate some symbols or to show a systematic pattern of behaviour? These are important questions, but more important are the properties philosophers think concepts have. We start here with an elaborated theory of concepts – a clear concept of concept so to say – and then consider whether it makes sense to describe cat's discriminatory abilities as possession of concepts. Concepts are:

- *fine grained* ("the older brother" is distinct from "the first son" even if they are the same person)
- come in a *system* (a "kitchen" is defined relative to "cooking" and "house" – and so forth)
- are *socially acquired and employed* in conditions of fit (we learn concepts from our parents and teachers, and we criticize people who misuse a word, say "kitchen" applied to your living room)
- some might be causally rooted (i.e. fixed to some sensory input like a coloured surface, for example the concept of *redness*)

Cat behaviour can neither be interpreted in a fine grained fashion (the cat does not care about her owner being the older brother or the first son) nor is their employment of a supposed concept rooted in *social* behaviour patterns. Language would allow for fine grained belief ascription and the use of language shows command of the subjective/objective contrast essential to the concept of a belief or judgement, since to know that you have a *belief* means to know that beliefs can be true or false. Unfortunately cats do not have language in the strict sense in which human languages are languages. Having a *system* of beliefs means to keep this system coherent, so it requires the possession of meta-representations and *rationality* – things way beyond the cat's mind (the cat does not explicitly consider the question of her beliefs about the position of the cheese run into conflict with her other beliefs about the kitchen).

Therefore cats possess no concepts in the sense we speak of human concept possession, especially no theoretical concepts (like *electron*, but even not ones like *kitchen*). They possess *systematic discriminatory abilities* which are the precursors of concepts. Discriminating a mouse is not having the concept *mouse*. Cats may have something like our sensory channels and therefore somewhat similar

causally rooted discriminations (say, seeing red bricks). They might possess the core of what makes an observational concept (like *red*) in humans. We humans identify such a supposed representation by the intersubjectively shared distal stimulus (say a red brick). In animals the existence of such a representation can be supposed given their discriminatory abilities and the way their brain resembles ours. Elaborated discriminatory abilities consist in: (a) self-monitoring with error-detection (e.g. observed in pigs), which involves (b) an internal representation of what is discriminated and memory of how it has been done, so that this results (c) in an improvement of discriminatory abilities. So a cat has systematic abilities in discrimination if it can be trained to classify some objects into a group, and shows error-correction behaviour once it observes it has put some object into the wrong group. As said, pigs can do that – maybe you try this with your cat. Even if we do not call the involved mental representations and nodes in the cat's categorisation scheme "concepts" – avoiding to blur important differences – they are something like *schemata*, precursors of concepts unfortunately being isolated instead of systematic.

§4   Belief Like States in Cats

Looking for intentional/propositional attitudes like beliefs and wishes in cats seems as obvious as looking for sensation or awareness in general, but is confronted with a situation like the one with respect to concepts. We have a highly complex model of propositional attitudes in the human case, which involves capacities that make it highly unlikely that animals have beliefs and desires *in that sense*. I divide the discussion into several reflections:

(a) Real intentionality or intentional stance?

(b) Why belief and desire like states at all?

(c) Belief like states are not beliefs?

(d) Can there be a theory of belief like states?

(ad a)

The *intentional stance* can be adopted towards systems that do not have intentionality, but which can be described for some purpose as having it. In these cases the intentional idiom is employed only as a place holder for an explanation to come at the design or physical level of the system. You can talk about an ant in intentional terms: "The ant *wants* to get to the food and confronted with the *choice* between two paths *it believes* the right path to be the better." There is, however, a sufficient explanation at the *design level* of the ant, since ants are rigidly controlled by olfactory input: An ant looks for food that gives more energy than needed to get it, and confronted with two paths the shorter one will have, after a while of use by co-working ants, more ant scent, so the ant takes it. There might be animals in case of which the intentional description is the most simple or even the only one we have so far. Reduction to the design level might be possible in the future only. And furthermore there is a crucial distinction between build-in intentionality (i.e. control of behaviour by some computational level that the system need not be aware of) and intentionality coupled with awareness of the inten-

tional state. So we may to be able to interpret the cat in intentional terms, and maybe the cat is a computationally controlled systems, but that does not settle the question whether the cat *experiences* states with different *intentional content*. Humans do, since they can represent their intentional states in language. Complete reduction is wrong headed in case of such systems that describe themselves *as* intentional, even if we could revolutionise the intentional idiom. So – is it *like something* for the cat to be in the state *we* describe as "belief" or "desire"? The merely instrumentalist attitude akin to the intentional stance is not – apart from being a heuristic – an option for a realist cognitive science not only including ethology but also neurophysiology and phenomenology.

(ad b)

Sentience, which we ascribe at least to vertebrates, must be connected to states of 'recognising' and 'doing' since otherwise there would be no point in having it. Feeling a pain makes sense only if you can have a belief about its cause and develop a wish to avoid it. These states of 'recognising' and 'doing' need not be beliefs and desires in the full human sense, but we often can explain cats using belief/desire-psychology, so the states they have have a similar role like beliefs and desires. Otherwise explanatory power within cognitive ethology would be lost. Desire like attitudes regulate behaviour within an *experienced* situation, so it would be queer if it was nothing like to have them.

(ad c)

Beliefs are fine grained (i.e. involve fine grained concepts). So beliefs require language, which is able to supply words with fine grained meanings, to their expression. Beliefs form a system that has to be coherent. Individual acquired new beliefs are not put in a belief bag, but have to be integrated coherently into your belief system. Therefore individual beliefs have to be represented as being believed ("I believe A", "I believe B", "So I believe A&B"). So having beliefs requires higher order beliefs and so requires having the *concept of belief*. Beliefs (as opposed to knowledge) live from a distinction between mere belief and true belief (i.e. they involve the concept of *truth* and the concept of mere belief). Higher order beliefs represent lower order beliefs using the concepts of belief and truth. Cats do not represent in language. So cats do not represent beliefs – at least as far as their awareness goes. There might be a tacit level of information representation that supports ascribing something like beliefs to cats. After all, applying belief/desire-psychology to my cats seems to be successful. In that case the logic rests on the side of the ascriber, who is human, of course, and is merely built in on the side of the cat (assuming a kind of computational level in the animal). *Belief like* states ("BL-states" for short) are not part of the accessible mind of such an animal, say my cat. The cat might have a content of awareness that as a sensation is tied to some BL-state, feeling "Wow!" in the BL-state with a content like "That smells real good! I wanna take a look there". We have no access to this representation. It cannot be like an articulated sentence, but the state a cat is in when expecting food is a state different from the one chasing a mouse. Maybe these states are not just experiential states, their content might be more structured. So we should say that those animals like cats which require an

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intentional description or the behaviour of which requires some kind of belief/desire-psychology have belief like states or desire like states.

(ad d)

A theory of belief like states would have to work itself bottom up towards belief. It would explain features of BL-states that serve their purpose without making them full-blooded beliefs. Building blocks of such a theory can be found in Jonathan Bennett's theory of *registration*: Registrations are more simple than beliefs, goals are more simple than desires, despite there being a structure similar to belief/desire-psychology. A system A registers p [where p may be some state of affairs like the cheese being in the kitchen], if A is in a sensory state which is similar to a p-operative state, a state being p-operative if a behaviour because of p was not accidental. Registering need not be transparent to A (even a Cruise Missile can register p), but given assumptions about what A registers we can suppose what goals A has. Registering does not require language nor does pure registering require awareness. Certainly my cats register what is going on in the kitchen. We approach belief like states when registering is supplemented with further faculties, for example being able to *learn* given conditional registrations or being a system that *strives* for new information to extend its behavioural repertoire. Developing such an account might give us BL-states which are not beliefs but serve their explanatory power in the animal case and allow for BL-phenomenology.

Thus we may be in a good position to claim that cats have belief like states. The hard work to be done is to develop a systematic account of these states in their differences but functional similarity to human beliefs. Do cats have beliefs? Strictly speaking "no", but in a sense "yes, they have".

§5   Playing with Cats

Tool use and playing in animals are important for cognitive ethology since investigating them might be another methodological option. Colin Allen and Marc Bekoff have investigated play and anti-predatory behaviour to search for animal consciousness. Whereas here we followed the lead of human capacities and looked whether they can be found in the animal kingdom taking them in isolation, it might be a helpful (heuristic) contrast to look at complex behaviour. The cats has to do several operations at the same time when playing with the little red ball. In complex behaviour several faculties work in co-operation. The cat smells, sees signals and starts a behaviour using some object at the same time. The achievement of co-ordination itself might be evidence of awareness. There is a job to do for a central agent co-ordinating input/output-relations and focusing attention on the spot if necessary. Play seems even to involve higher order states, so there could even be a compartmentalized module of higher order representation involved in some activities (like the cat knowing in some sense that the other cats is about to attack in a playful, non-serious manner), but not present for general purposes! There might be non-cognitivistic explanations of cat behaviours or explanations that do not involve cat awareness but an appeal to the cat being aware of what it was doing might be the best explanation why it did what it did. Similar Donald Griffin acknowledges that individual behaviours

might be explainable by referring to unconscious mechanisms, but claims that in face of all the evidence it would be simpler to assume animal consciousness, thus appealing to *simplicity*. Adding to this that misunderstandings stemming from a misuse of concepts covering human capacities can be avoided – as hinted at in this chapter – the burden of proof shifts to those trying to explain away supposed cat awareness.

Suggested Readings

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