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ANIMAL MINDS:
CONCEPTUAL PROBLEMS

ABSTRACT. This essay is an expanded version of my Antrittsvorlesung ‘Können Tiere Denken?’ at the University of Zurich, 02.04.2007. A Spanish translation will appear as a monograph *La Mente de los Animales*. (Oviedo, KRK Ediciones) in 2008. The essay discusses the problems which concepts pose for the attribution of thoughts to (non-human) animals. It first locates these problem within a range of other issues concerning animal minds (sct. 1). It then distinguishes three positions: Davidsonian lingualism denies that non-linguistic animals have any thoughts or concepts; mentalism maintains that their thoughts differ from ours only in degree; an intermediate position maintains that animals can have thoughts of a simple kind (sct. 2). Next I argue that the topic of animal minds should be approached from a third-person perspective (sct. 3). The article opts for an intermediate position by considering those arguments for lingualism which trade on the connection between thoughts and concepts: the argument from the intensional nature of thought (sct. 4); the idea that thoughts involve concepts (scts. 5-8); the holistic argument from the logical connections created by concepts (sct. 9). I conclude that there is a kind of perceptual thought that does not require concepts and that concept-possession is not tied to language, but to the capacity of making discriminations that are subject to normative assessment. At the same time, even the ascription of simple thoughts to animals employs a rich idiom with conceptual connections that go beyond the phenomena to which it is applied (sct. 10). The original essay is followed by two post-scripts. The first conveys my more recent reflections on the ‘lingualist master-argument’ according to which thought requires concepts and that concepts require language. The second places the essay in a wider context, as regards both my own work and the current anthropological debate about how much we resemble our biological relatives.

KEYWORDS: Animal Minds, Lingualism Concepts, Normativity, Reasoning, Holism, Judgement.

1. Conceptual Problems and the Problem of Concepts

Concepts have a two-fold significance for animal minds. Like most philosophically interesting topics, animal mentality poses problems of a distinctively conceptual kind. What mentality, if any, one can attribute to non-human animals (henceforth “animals”) depends not just on empirical findings (whether observations in the field or experiments in the laboratory) and scientific theories, but also on what one makes of heavily contested concepts like that of a mind, of thought, of consciousness, of behavior, etc. The philosophical task in this area consists not in collecting new empirical data about animal behavior, its

neurological causes or its evolutionary origins, but in clarifying what it is to possess various mental properties, and hence under what conditions such properties can be ascribed to organisms. This is not to say that one needs a cast-iron precise definition of these properties in advance of empirical theory-building. But it is to say that such theory-building must be accompanied by conceptual reflection on the provisional understanding of mental concepts that inform specific lines of research, methods and conclusions (see Allen/Bekoff 1996, pp. 236-7).

Among the contested concepts that are important to the issue of animal minds, the concept of a concept occupies an important place. More specifically, concepts seem to pose a distinct obstacle to those theories that ascribe to animals a wealth of mental properties and capacities. On the one hand, many of these phenomena seem to involve or presuppose the possession of concepts, but on the other, concepts and conceptual capacities seem to be highly sophisticated features closely connected to language, and hence beyond the ken of animals. In this essay I want to discuss both *conceptual problems* in the field of animal minds, and the *problem of concepts* for animal minds.

Do at least some animals have minds which are comparable to those of humans? The question is both complex and vexed. It involves many different problems that have been treated from a variety of methodological perspectives, in subjects ranging from evolutionary biology and neurophysiology through ethology, psychology and linguistics to the philosophy of mind and language. Particularly baneful has been the intrusion of moral concerns. It is perfectly legitimate to discuss what implications the possession or lack of mentality should have for our treatment of animals, their treatment by ethologists included (see Bekoff/Jamieson 1991). What is illegitimate is to tailor one's view of animal minds to suit one's ethical (or unethical) prejudices. Alas, in many cases it is obvious that verdicts on animal minds are motivated neither by empirical observations nor by conceptual clarifications, but by a desire to affirm or deny that animals are worthy of various degrees of moral and legal consideration.

As one leaves behind the murky waters of applied ethics and animal welfare, other complications loom. The concept of a mind may be vague, but it is certainly wide-ranging. In dealing with the question of animal minds, we must therefore specify what mental phenomena and capacities are at issue. One possibility here is to simply provide a list, e.g. sensation, perception, memory, mental imagery, belief,

emotion, desire, intention, consciousness, self-consciousness, awareness of other minds, reason, etc. But it may also be possible to proceed in a more systematic fashion.

For one thing, we must distinguish cognitive capacities, namely capacities to gain information or knowledge, from conative capacities, that is, capacities to have evaluative attitudes of pursuit or avoidance. The popular term “animal cognition” is misleading in that it seems to refer exclusively to the former, when in fact most of the debate under that title is as much concerned with animal desires and intentions as it is with animal belief.

Both cognitive and conative states are what philosophers call intentional; that is to say, they have a particular object or content. One believes or knows that something is the case, one desires that something be the case, one intends to do something. In cases in which this content is expressed by a that-clause, it is common to use the (in my view misleading) term “propositional attitudes”. However, there are other mental phenomena which have no such object or content, whether propositional or other. This holds not just for sensations like pains or tickles, but also for relatively complex phenomena such as moods. One of the problems with concepts like experience and consciousness is that they seem to cover a variety of phenomena ranging from simple sensations through perception to full-blown propositional attitudes. It is one thing to be conscious in the sense of being capable of experiencing pain, which may simply be a mark of all sentient life. It is quite another thing to be capable of perceiving certain features of one’s environment, and possibly yet another thing to be capable of believing that such-and-such is the case.

I shall refer to these intentional states as thoughts rather than propositional attitudes. It is unclear whether they are attitudes towards entities. And even if they are, it would be sheer dogmatism to insist that loving Malcolm X or intending to climb a tree are in the final analysis attitudes towards propositions (see sct. 5 and fn. ??? below). In any event, the capacity for thought is a precondition for the capacity of reasoning. In both theoretical and practical reasoning, one moves from one or more thoughts, the premises, to another thought, the conclusion. Reasoning for its part must be distinguished from intelligence. Roughly speaking, intelligence is the ability to solve hitherto unencountered problems in a flexible way, notably one which is not predetermined by the genetic outfit of the species (similarly Dupré 1996, pp. 329-30). Intelligence in this general sense covers not

just problem-solving through trial and error, as with the Cappuchin monkeys in the trap tube task, to the kind of insight and foresight displayed by chimpanzees in the fashioning of tools (see Tomassello/Call 1997, pp. 10-11 & ch. 3). But even in the latter case, it is an open question whether reasoning from premises to conclusions is involved.¹

Because of my interest in concepts, I shall focus on animal thought, addressing the issues of sensation, perception, intelligence and reason only in so far as they bear on the theme of concepts and thought. That vertebrates have sensations and are capable of perceiving their environment should be obvious,² and so is that many of them, especially higher mammals, are capable of intelligent behavior of various degrees. But only in the case of thought is there any *prima facie* reason of believing that concepts must be in play. Conversely, the capacity to reason clearly presupposes conceptual capacities, but only because reasoning involves thoughts. Even within the area of animal *thought* as here understood, there are several issues. From Descartes onwards, the main philosophical argument against crediting animals with thoughts and concepts has been that both require language. However, recent research in cognitive ethology suggests that chimpanzees and bonobos are capable of acquiring elementary linguistic skills (Savage-Rumbaugh/Lewin 1994; Savage Rumbaugh/Shanker/Taylor 1998). These findings have been disputed by Chomskian linguists (Pinker 1994, ch.11), who complain in particular that these apes lack the syntactical capacities characteristic of language. So one question is whether some animals possess language. If that question is answered in the affirmative, then several arguments against animal thought simply do not apply to these cases (see Stephan 1999, pp. 88-90).

The other question, which is my exclusive concern here, is whether *non-linguistic* creatures are capable of thought. This keeps out signing apes, but brings in non-linguistic humans. However, with the exception of occasional side-glances, I shall focus on *non-linguistic animals*, partly because non-linguistic humans raise problems of an entirely different kind. For example, it is unclear to what extent our attribution of thoughts to pre-linguistic children is based on an anticipation of their later linguistic skills. At the same time, I shall invoke not just actual forms of animal behavior, but also forms of behavior that a non-linguistic creature *could* engage in. For it is this possibility which is crucial to the conceptual question of whether our mental concepts preclude *ab initio* the possibility of animal thought.

2. Options concerning Animal Thought

At long last, we have a question which may shed light on the role of concepts for animal minds without being absurdly general. Can animals without language have thoughts (beliefs, desires, intentions, etc.)? For most of this century, there has been a tendency to assume that any positive answer must be based on anthropomorphism, an illegitimate projection of human features onto animals. However, with the rise of cognitive psychology and ethology the tide has turned. It has been shown, for example, that the blanket charge of anthropomorphism is both defuse and ill-founded (Fisher 1996).

Alas, at present there is an opposite danger. Current debates about the mind are increasingly dominated by evolutionary theory and by naturalism, the idea that philosophy has no distinctive contribution to make over and above that of the special sciences. In this climate it appears that opponents of animal thought are misguided “human exceptionalists” who ignore the “continuity across species” that has been discovered by evolutionary biology and neurophysiology (Jamieson 1998). In this vein, various biological principles of continuity have been invoked to show that the differences between humans and animals can only be a matter of degree (Crisp 1996). From this perspective, any attempt to draw qualitative distinctions between humans and animals appears deplorably anthropocentric and out of touch with natural science.

This blanket charge of anthropocentrism is no more warranted than the opposing charge of anthropomorphism. There is no gainsaying the empirical fact that there is both biological (in particular, genetic and neurophysiological) similarity and evolutionary continuity between us and certain non-linguistic animals. But it does not follow that they must approximate to our mental life. For one thing, the extent to which biological evolution can involve genuine leaps is controversial, as the debate over the possibility of punctuated equilibria shows (see Gould/Eldridge 1977). For another, even if *natura non facit saltus*, continuity along lineages of evolutionary development has no implications for the mental capacities of the animals around us. To suppose otherwise amounts to what one might call ‘the evolutionary fallacy’. Although it is probable that our closest evolutionary *ancestors* without language shared many of our other mental capacities, these ancestors are extinct; and there is no guarantee that the biologically closest *extant species* is mentally close to us. If all vertebrates except *homo sapiens* had been

vanquished by a wayward meteorite, it would be absurd to conclude that starfish and sea cucumbers must be mentally close to us (see Pinker 1994, p. 346).

It so happens that our closest extant relatives, the chimpanzees, share 98% of our DNA. However, it does not follow that they share 98% of our mental life. If we set store by this ‘DNA fallacy’, we would also have to conclude that worms and flies share about 75% of our mental capacities. The trouble with this kind of reasoning is straightforward: small biochemical differences in genotype may lead to significant differences in phenotype. In fact, this already holds at the level of neurophysiology. Although the brains of chimpanzees are made of the same matter, they are significantly smaller than those of humans (on average, 400ccm to 1400ccm), even if body-size is taken into consideration. In any event, however, our mental vocabulary captures *neither* genetic *nor* neurophysiological differences, but differences in the kinds of behavioral and perceptual capacities we humans are interested in (more on this in section 3). To that extent, our mental concepts themselves may be anthropocentric; yet it does not follow that it is anthropocentric to insist that these concepts preclude application to non-linguistic creatures (see Davidson 1985, p. 473). Of course, some naturalistic philosophers have suggested that we should replace this vocabulary with a more scientific jargon based on neurophysiology. But whatever the merits of that proposal, it will not solve the problem that fuels the debate about animal minds, namely whether it is legitimate to apply our current mental vocabulary to animals.

As regards that question, one can distinguish not just proponents and opponents, but a whole spectrum of views. At one end we find lingualists like Davidson, who deny that non-linguistic animals have any thoughts. The other, mentalist end is occupied by empiricists like Hume, who think that the thoughts of animals differ from those of humans only in degree, due to their different perceptual inputs. Oysters don’t have thoughts about bicycles, simply because they cannot perceive bicycles. In one sense it is also occupied by those cognitive representationalists who explain even simple animal behavior by reference to a rich variety of complex thoughts and calculations, except that these thoughts are held to be in a language of thought, not in a public language. In addition to these two extremes, however, there is an intermediate position, adopted by a coalition (rare, some might say) of common sense and Wittgenstein. It holds that animals are capable of having thoughts of a *simple* kind, namely those that can be expressed in non-linguistic behavior.

A second complication arises because of the various dimensions of the concept of thought. Even if we leave aside thought as the capacity for reasoning and confine ourselves to intentional states, we have to distinguish between two parameters, namely the kind of state on the one hand, the kind of “content” on the other. One question is what intentional verbs can be applied to animals; another question is what that-clauses, singular terms or infinitives can follow these intentional verbs. Concerning the first parameter, it is possible to grant that a dog can know, believe or see that *p*, but to deny that it can think or hope that *p*. Concerning the second, Wittgenstein famously suggested that a dog can believe that its master is at the door, but not that its master will return the day after tomorrow (1967, p. 174; see also Rundle 1997, ch. 3).

Finally, there are diverse views on the status we should accord to ascriptions of thoughts to animals. It is possible to regard the ascriptions of some types of thoughts to some species of animals as empirically false. This is the case, for example, when ethologists like Seyfarth and Cheney (1996, pp. 340-3) use observations to deny that vervet monkeys have a “theory of mind”, that is, beliefs about the beliefs of conspecifics.³ It is not easy to see how one could regard the ascription of *all* types of thoughts to *all* species of animals as empirically false. In any event, however, most opponents of animal thought do not take this line. They often regard such attributions not as false, but as suffering from a more basic defect, namely that of being meaningless, nonsensical or based on a category-mistake (see Fisher 1996, pp. 4-8). This is part and parcel of the aforementioned fact that disputes about animal minds are often rooted not in disagreement about the empirical evidence, but in a diverse understanding of the concepts involved. If the concept of thought is such that it precludes application to non-linguistic creatures, nothing could count as evidence that some animals have thoughts. Ascribing thoughts to animals would then make no more sense than ascribing a color to a number.

These days, the harsh charge of nonsense is much less popular among analytic philosophers than it used to be. But even those who are prepared to accept that some thought ascriptions to animals are neither conceptually incoherent nor empirically false often insist that they cannot be taken literally, but must be regarded as figurative, metaphorical or secondary. In a similar vein, Bede Rundle has suggested that ascribing thoughts to animals is a mere description or redescription of behavior, whereas ascribing thoughts to humans can be a genuine

explanatory hypothesis, to be confirmed by what the subject is prepared to divulge (1997, ch. 4). On either view, to say that an animal believes that *p* may be no more than a *façon de parler*.

This stance is illustrated by Davidson's reaction to the following tale from Norman Malcolm.

Suppose our dog is chasing the neighbor's cat. The latter runs full tilt toward the oak tree, but suddenly swerves at the last moment and disappears up a nearby maple. The dog doesn't see this maneuver and on arriving at the oak tree he rears up on his hind feet, paws at the trunk as if trying to scale it, and barks excitedly into the branches above. We who observe this whole episode from a window say, "He thinks that the cat went up that oak tree" (1972-73, p. 13).

Malcolm claims that we would be right to say this, and Davidson acknowledges that it is *prima facie* plausible. Nevertheless, he insists that strictly speaking Malcolm's dog cannot believe anything, because he does not possess a language (see 1985, pp. 474-6, 478; 1984, p. 155).

An immediate objection to Davidson is this: animals must be capable of having thoughts because we have no better way of explaining and predicting their behavior than by attributing thoughts to them (e.g. Bennett 1976, §§7-8; Fodor 1975, ch. 1). Indeed, there may not even be a feasible alternative. In that case, such attributions would even satisfy a well-known methodological principle of comparative psychology. According to "Morgan's canon", we should only attribute higher mental capacities to a creature if this is the *only* explanation of its behavioural capacities (see Morgan 1894, pp. 53-5).

In my view, Morgan's canon is heavy artillery indeed, and I propose to replace it by something more modest. Call it Glock's canon if you please, even though it's in fact more like a hand-gun. We should only attribute higher mental capacities to a creature if this is the *best* explanation of its behavioural capacities. Like Morgan's canon, this modified principle relies on a (gradual) classification of mental capacities into higher and lower, a procedure which requires explanation and defence. Both can be supplied, I hope, by applying Aristotelian and Kantian modes of thought, with their demarcations between perception, understanding and reason, to congenial distinctions in contemporary cognitive ethology (e.g. Tomassello & Call 1997). Furthermore, weakening Morgan's principle in the way here proposed would put pate to a widespread practice or

malpractice among sceptics about animal minds. It is common to account for the cognitive achievements of apes and cetaceans by invoking more or less far-fetched feats of associative learning, simply in order to scotch the prima facie compelling suggestion that these animals engage in genuine planning or reasoning (e.g. Povinelli & Vonk 2006; cp. Tomassello & Call 2006). Indeed, some sceptics seem willing to postulate mechanisms for which there is no evidence, and which are perhaps not even coherently describable, for the sole purpose of avoiding the attribution of higher mental faculties.

But even if one abandons methodological principles which militate against such attributions, the question remains whether such attributions make sense in the first place. Philosophical lingualists give a negative answer to this conceptual question. Thus according to Davidson, the lack of a superior alternative provides a pragmatic justification for our attribution of thoughts to animals, but it does not show that animals can have thoughts. In attributing thoughts to animals, we merely treat them *as if* they were capable of acting for reasons (beliefs and desires), just as one might explain the movements of a heat-seeking missile by ascribing to it the desire to destroy an airplane. In this way,

we can continue to explain the behavior of speechless creatures by attributing propositional attitudes to them while at the same time recognizing that such creatures do not actually have propositional attitudes. We will be bound to acknowledge that we are applying a pattern of explanation that is far stronger than the observed behavior requires, and to which the observed behavior is not subtle enough to give point (1985, pp. 477-8).

This account treats thought-attributions to animals as useful fictions. However, Davidson himself concedes that animal behavior is much closer to human behavior than the movements of heat-seeking missiles, and that we know of no better way of explaining the behavior of animals than by attributing thoughts to them. But these concessions invite an objection Davidson ignores.

We regard attributing thoughts to animals not just as *convenient*, as he would have it, but as entirely *justified*. For, unlike attributing desires and beliefs to complex missiles, such attributions are not based on *technological ignorance* but on a *biological insight*, namely that the life and behavior of animals shows them to have both wants and perceptual capacities. Davidson might reply that the alleged insight is merely an illusion of Aristotelian folk-biology, since animal behavior

could be fully explained by reference to physiological processes, if our knowledge of physiology were sufficiently advanced. However, this invites the question of why human behavior should resist such explanation. And a lingualist who responds that human behavior resists mechanical explanations because it rests on thoughts would be begging the question at issue.

Nevertheless, there may be a kernel of truth in Davidson's suggestion that the pattern of explanation we employ with respect to animal behavior in some sense outstrips the explanandum, because it is originally tailored to the explanation of the more complex behavior of linguistic creatures like ourselves. In this article I want to bring out that kernel of truth. At the same time, I shall resist Davidson's lingualism. Instead, I opt for a version of the intermediate position, both with respect to the kinds of thoughts one can ascribe to animals, and with respect to the status of such descriptions. We can ascribe thoughts and concepts to animals, but these are restricted to a simple kind. For only simple thoughts can be identifiably manifested in non-linguistic behavior. Furthermore, although the ascription of thoughts and concepts to animals can be more than a useful fiction, it is incongruous in that the rich mental idiom we employ has conceptual connections that go beyond the phenomena to which it is applied.

3. The Perspective of the Third Person

I shall argue for this position from a third-person perspective. That is to say, I shall not appeal to phenomena--whether mental or neurophysiological--that *cannot* be manifested in behavior even *in principle*. Such a perspective has been adopted by many prominent lingualists—notably Davidson, Sellars, Brandom and Hacker. Yet my adoption of a third-person perspective is not just a concession for the sake of argument. The prevailing renaissance of mentalism notwithstanding, such an approach is not committed to an untenable behaviourism. Thoughts can be ascribed on the basis of behavior, without therefore being reducible to behavioral dispositions (Davidson 1985, p. 476). Furthermore, the third person perspective is adopted not just by common folks, but also by cognitive ethology in its scientific investigations of animal mentality. For good reasons.

For one thing, one cannot make sense of the notion of a belief as a private attitude completely detached from behavior and its explanation (Davidson 1984, pp. 170; 1985, p. 476). For another, although thoughts can be more or less definite, it makes

sense to ascribe a specified thought that p to a creature a only if something counts as a thinking that p rather than that q (see Glock 1997, pp. 166-8). Finally, even if attributing beliefs or concepts to creatures which are totally incapable of manifesting them is not strictly meaningless, it is vacuous and cannot be part of a proper behavioral science. The latter crucially depends on reliable methods for the imputation of non-linguistic thoughts (see Dupré 1996; Bermúdez 2003).

As mentioned above, our mental concepts capture differences in the kinds of *behavioral* and *perceptual* capacities human beings are interested in. We are social primates by nature. Our languages include mental terms because of our fundamental need to describe, explain, predict and otherwise understand the behaviour and behavioural dispositions of other human and non-human animals, and because of the equally fundamental need to provide such information to other humans. No room here for the inner glow sought by mentalists, or the neural mechanisms that captivate many contemporary philosophers.

This is why the criterion for the possession of mental powers and rational powers in a species is not the DNA or even the brain of its members. The latter only come into play when it comes to explaining the ultimate or proximate causes of *why* these specimen possess the mental powers they do. They do not determine *whether* the animals possess such powers in the first place. That depends on what members of the species are *capable of doing* in various circumstances.

Nevertheless a third-person perspective on the question of animal mentality and rationality is opposed by many contemporary philosophers, and not just by sceptics about animal minds. According to Searle, for instance, “behaviour is simply irrelevant” to the attribution of thoughts, because “my car radio exhibits much more intelligent verbal behaviour, not only than any animal but even than any human that I know” (1994: 216).

If one were to trust this passage, one would not envy Searle his company. The production of noise by a radio hardly even qualifies as behaviour. But if it does, it is exceedingly stupid. The radio fails the Turing test miserably. Even to its non-linguistic environment, moreover, it cannot react in an intelligent, i.e. responsive and flexible manner. This is why during a traffic jam, in the midst of a chorus of honking, it is capable of uttering things like “Right now everything is serene and quiet here”. It is not the radio that behaves intelligently, but at best the person whose utterances it transmits; and even that very much depends on the station it is tuned to.

In Searle's opinion, the essential prerequisite of thought is the presence of neurophysiological phenomena rather than the capacity for intelligent behaviour.

Suppose we had a science of the brain which enabled us to establish conclusively the causal bases of consciousness in humans. Suppose we discovered that certain electrochemical sequences [XYZ] were causally necessary and sufficient for consciousness in humans. ... Now if we found XYZ present in snails but absent in termites, that would seem very strong empirical evidence that snails had consciousness and termites did not. (1994: 215-6)

But one can only establish that XYZ is the causal base of consciousness if the phenomenon of consciousness has been *identified* on independent grounds. Searle dismisses as irrelevant the criteria for consciousness and thought employed not just by lay-people but also by cognitive ethologists. According to him it is part of the meaning of mental terms that they apply only to creatures with a certain neural outfit. This has the unpalatable consequence that, contrary to Searle's avowed stance, extreme scepticism about animal minds is legitimate, since even the most knowledgeable among us are ignorant about the precise causal base of consciousness and about the extent to which it is common to humans and animals.⁴

Searle cannot appeal to the supervenience of the mental on the physical to sideline behavioural capacities. If two creatures were identical in every respect, including not just their overall physical properties but also their connection to their physical and social environment, then supervenience would require that they have the same mental properties. But of course human beings and animals are *not* identical in this way. The differences between human brains and even the most evolved animal brains are considerable, not just at the morphological level but also with respect to certain neuro-physiological features (see Roth 1999; Roth & Dickie 2005). And there is absolutely no guarantee that the occurrence of a given electrochemical phenomenon XYZ in one wider context C_1 has the same bearing on the mental capacities of a species S_1 as it has in another context C_2 on the mental capacities of a species S_2 . Furthermore, no occurrence of XYZ could possibly show that a completely inert thing is nevertheless conscious.

Searle's emphasis on the brain at the expense of behaviour evinces an *encephalocentrism* that is rife within contemporary cognitive science and analytic philosophy. What we require instead is a perspective which is both more

naturalistic and more realistic. Mental and biological phenomena reveal themselves only when we go beyond the brain and consider not just the whole organism, but the organism in the context of its environment, in the context of its form of life, as both Wittgensteinians and cognitive ethologists might put it. Mental phenomena as defined by our mental concepts must be *capable* of being manifested in behaviour. The moot question is whether specific mental phenomena can only be manifested in *linguistic* behaviour, and whether thought (as explained in sct. 1) is among these.

To be sure, many cognitive ethologists make free use of the notion of a mental representation, especially with respect to concepts. One reason is that they regard this as an anti-dote to the behaviorist perspective which repudiates mental predicates and describes animal behavior exclusively in terms of stimulus and response. But in contrast to mentalist philosophers (e.g. Carruthers 1989), their postulation of mental representations remains tied to the explanation of behavior. Furthermore, circumspect practitioners stress that this notion of a mental representation is a modest one, which does not require the imputation of “pictures in the head” or of symbols in a “language of thought” (see Tomasello/Call 1997, pp. 7-12, 351). Instead, the main purpose of the terminology seems to indicate that animal cognition goes beyond immediate sense-perception.⁵ For this reason, in most contexts, talk of mental representations can be replaced by talk about higher cognitive and mental capacities, such as the ability to remember, to reason with foresight, etc. As we shall see (sct. 7), such abilities are importantly different from behavioral dispositions. Whether the causal explanation of those abilities refers to physical tokens of computational types in the brain, as cognitive representationalists have it, or whether it involves other factors, as connectionists and many neuroscientists maintain, is a separate question. Moreover, it is a question that can and should be left open when the issue is whether animals have thoughts or concepts.

In any event, to talk about abilities rather than representations avoids the suggestion that humans and animals alike relate to the world not directly, through exercising their cognitive and conative capacities, but through “inner” intermediaries. In my view, this shift of perspective is especially apposite in the case of concepts. There is a mentalist tradition which regards concepts as representations in the minds or brains of individuals, and a Platonist tradition, according to which they are building-blocks of abstract entities. The former view has problems in doing justice to the objective nature of concepts, the fact that they can be shared between subjects which could not

share private mental ideas and need not share patterns of electro-chemical activity in the brain.⁶ The latter view has difficulties in explaining the role concepts play in thought and action. Both types of problems are avoided by a third position, going back to Aristotle and Kant, which regards concepts as principles or rules of classification and explains the possession of concepts as the possession of classificatory abilities.

In this essay, I cannot justify either my animadversions against inner representations or my preference for the notion of abilities that can be manifested in behavior (see Glock 2006a). My aim is more modest. I want to show that even from such a third person perspective, the various connections between thoughts and concepts point in the direction not of lingualism, but of an intermediate position. The three connections that threaten the possibility of animal thought concern have featured in several authors, but are especially prominent in the work of Davidson, the most important of current lingualists.⁷ I shall discuss in turn:

- the intensional nature of thought (sct. 4);
- the claim that thoughts must involve concepts (scts. 5-7);
- the holistic connections between thoughts (sct. 8).

4. The Intensional Nature of Thoughts

One problem with attributing thoughts to animals is that without verbal responses we cannot make the fine distinctions between different thoughts (beliefs, desires) expressed in the same non-verbal behavior. Thought-attributions to humans create intensional contexts: if we substitute co-referential terms within the content-clause, this may lead from a true attribution (e.g., “Sarah believes that Cicero was Roman”) to a false one (e.g., “Sarah believes that Tully was Roman”). In the case of animals, by contrast, substitution of co-referential expressions often leads from attributions which we commonly regard as true to attributions which are absurd or unintelligible. The oak tree that the cat went up also happens to be the oldest tree in sight and the same tree the cat went up last time the dog chased it. But does Malcolm’s dog believe that the cat went up the oldest tree in sight, or the one it went up last time? Equally, a dog can know that its master is at the door. But does it also know that the president of the bank is at the door? “We have no real idea how to settle, or make sense of, these questions” (Davidson 1984, p. 163; see also Chater/Heyes 1994). The reason is that the dog can think neither that its master is the president, nor that he is not.

One response to this failure of intensionality is to hold that in the sentence

1 The dog thinks that the cat went up that oak tree

the expression “that oak tree” occurs transparently (in Quine’s terminology).

Accordingly, (1) is paraphrased so as to avoid problems of intensionality, e.g. as

1’ The dog thinks, with respect to that oak tree, that the cat went up it.

But as Davidson (1985, pp. 474-5) points out, this response presupposes that “the *de re* description picks out an object the believer could somehow pick out”. If Malcolm’s dog could not distinguish the oak tree from among other objects (e.g. the pine tree or the garden fence), we might still causally explain his behavior by reference to the oak tree, just as we explain the convulsions of an oyster by reference to its being pricked with a needle. But (1’) would no longer be appropriate. For *de re* constructions like “with respect to” or “of” require an anaphoric referent in the subsequent content-clause, an “it” which the now disabled dog could not distinguish from other things.

However, it remains an open question whether this requirement might not be met by non-linguistic creatures on account of their possessing certain *discriminatory capacities*. The dog believes something of the tree “under some description”, namely one that expresses those features by which the dog recognizes the tree and distinguishes it from other objects. This is the point at which concepts come in. If the dog is to be capable of recognizing the tree by certain features, it seems that it must have the concept of a tree. It needs not only to distinguish trees from other objects, but to recognize them by certain features. *If* this is granted, it might even provide for a non-linguistic analogue of intensionality, at least in simple cases. Animals cannot know objects by different descriptions, but they might recognize them by different features, and they might fail to recognize that these are features of one and the same object. Thus it is conceivable that Malcolm’s dog reacts in one way to a man with heavy foot-steps being at the door, in another to his master being at the door, because he has not yet realized that the heavy stepper is his master. In that case it may be true that he believes that the heavy stepper is at the door, but not that his master is at the door, or *vice versa*.

But according to linguists, crediting the dog with the concept of a tree makes no more sense than crediting him with beliefs about trees. The dog cannot believe of an object that it is a tree, “unless we suppose the dog has many general beliefs about trees: that they are growing things, that they need soil and water, that they have leaves or needles, that they burn. There is no fixed list of things someone

with the concept of a tree must believe, but without many general beliefs there would be no reason to identify a belief as a belief about a tree, much less an oak tree” (Davidson 1985, p. 475).

Two lingualist objections emerge here: a general one concerning the holistic connections between thoughts created by concepts, which will be discussed in section 6, and a more specific one concerning concepts to which I turn now. Consequently, the force of the argument from intensionality depends on the arguments from concepts and from holism. The original argument questions whether there is a that-clause which would capture the content of an animal’s thought. This question now gives way to the question of whether such clauses would not be implying too much conceptual sophistication and to the question whether they would not drag in too many other thoughts.

5. Thoughts and Concepts

The obstacle which concepts create for animal thought is this. The thoughts we ascribe to animals in common parlance involve *concepts* with which the animal cannot be credited. Attributing thoughts to animals on the basis of non-linguistic behavior is misguided, since these thoughts involve concepts which themselves cannot be attributed on such a basis, because they require general beliefs which could only be manifested through language. Accordingly, concept-possession and the ability to have thoughts amount to one and the same thing, and both are confined to language-users (Dummett 1993, chs. 12-3; Davidson 1997, pp. 24-5; 1999, pp. 7-8).

This raises two problems. Firstly, can animals possess concepts at all, and, if so, what kind of concepts? Secondly, if they cannot have concepts of any kind, does that really preclude them from having thoughts or beliefs?

One will have to answer the second question in the affirmative if one accepts the mentalist idea that thoughts are occurrences in the mind or brain, or the Platonist idea that they are abstract entities which have concepts as their components. On either account, one cannot have or grasp the thought without having or grasping its constituent concepts. However, the Platonist picture has no explanatory value. It transposes the relation of spatial part and whole from an area where it is perfectly clear—material objects—onto an area where spatial concepts *ex hypothesis* make no sense. At least in its modern version, the mentalist picture looks very concrete: concepts are temporal stages of physical processes in the

brain. But even *if* identifiable neurological processes correspond to having parts of a thought as opposed to having a whole thought (something which has been doubted on both empirical and conceptual grounds), these are only stages of the thinking of a thought, not of its content.

Furthermore, Davidson himself has maintained that “propositional attitudes” are not relations between a subject and an abstract or mental phenomenon, but rather modifications of a person (1994, p. 232). In my view, he is right. Although that-clauses are grammatically speaking noun-phrases and can function as accusatives, they no more refer to a genuine object than noun-phrases like “everything” or “the past” (see Glock 2003, pp. 266-7). If this is correct, for *a* to believe that *p*, *a* need not stand in a relation to an object (a proposition) which would involve standing in a relation to components of that object (concepts).

The building-block model according to which small entities—concepts—combine to form large entities—thoughts—is not a truism but a problematic metaphor.⁸ What seems to give content to that metaphor is exclusively the fact that the linguistic expression of thoughts—namely sentences—has components—namely words. But as linguists like Dummett and Davidson themselves have stressed, at the linguistic level the building-block model is problematic. We do not construct the senses of sentences out of the meanings of words, rather, we assign meanings to words by noting their role within sentences. For this reason, Davidson’s approach to human belief is “holophrastic”: we ascribe beliefs to linguistic creatures on the basis of their assenting to sentences as a whole (1984, pp. 4, 22, 220-5; 1997, p. 25).

The possibility he ignores is that rejecting the building-block picture in the linguistic case invites an analogous move in the case of animals, a *holodoxastic* approach that starts out from the whole belief. Concepts are not the building-blocks of thoughts, they are abstractions from thoughts, because, as Kant noted, their sole function is to be used in judgements. According to such an approach, what matters is precisely a kind of “modification”: if a creature can be correct or mistaken as to how things are, it can have beliefs. Although the sentences we use in ascribing thoughts have components, our ascriptions are not based on a prior ascription of these components. Instead, they are based on the subject manifesting certain perceptual capacities, attitudes and emotions.

In the non-linguistic case, these manifestations will obviously not include assent to sentences. But they will include forms of behavior, postures and facial

expressions which higher animals share with human beings. When we say that Malcolm's dog believes that the cat went up that oak tree, we do not do so on the grounds that it picks out objects and classifies them in a way that corresponds to the singular and general terms we use in the attribution--that is why, for philosophical purposes, it may be more accurate to rephrase (1) in the transparent manner of (1'). Rather, we simply note the dog's reaction to its environment. We regard these reactions as directed towards particular objects, creatures and events, because we assume that dogs have certain perceptual capacities and wants, assumptions which require rudimentary knowledge of the way dogs live (what they can recognize, what they tend to dislike, etc.).

Because of its reliance on behavioral reactions, the holodoxastic move is confined to simple beliefs, notably about perceptible features of the subject's environment. But it suffices to blunt the force of the line "No thoughts without concepts!".

What is more, we have good reasons to welcome holodoxastic belief ascriptions. It would be absurd to deny that animals are capable of perception. However, perceiving that *p* implies either *knowing* that *p*, if 'perceiving' is used as a success-verb; or it implies merely *believing* that *p*, if it is not.⁹ In either event, it amounts to a case of thinking that *p* as defined above. So, if animals can perceive that *p* then the lingualist claim that thinking requires concepts is mistaken.

Lingualists might respond that animal perception does not include perceiving that *p*, but is confined to perceiving *X*, i.e. to perceiving objects or events. But this response is implausible. The perceptually guided reaction of most animals to their environment can only be explained by a capacity to perceive that *p*. For instance, the dog jumps on the table, something it has been trained not to do, and grabs a bone. This action is not explained by its seeing a bone or seeing a table, but only by its seeing *that* the bone is on the table. The lingualist cannot avoid this conclusion by insisting that the dog simply perceives (sees, smells, etc.) the bone on the table. For either the apposition 'on the table' simply serves to identify what bone it sees. Then its seeing the bone on the table goes no further towards explaining its behaviour with respect to the table than its simply seeing a bone. Or it is shorthand for 'being on the table'. But perceiving the bone being on the table is perceiving that the bone is on the table by another name. Consequently there is no way around the admission that animals can perceive that something is the case, just as we can.

6. Defending holodoxastic thought-ascriptions

Accordingly, holodoxastic thought-ascription is not just an established feature of our mental discourse, but one which is forced on us by the fact of animal perception. Nevertheless, the ideas of holodoxastic thought-ascription and of non-conceptual thinking may invite suspicion. Let me consider two objections.

The first concerns the feasibility of side-stepping the problem of intensionality by determining the content of holodoxastic thought-ascriptions through *de re* reformulations (see sct. 4). Thus (1') defuses the potential threat posed by the concept *oak tree*. And one could take care of the concept *cat* by taking the reformulation one step further:

(1*) The dog thinks, with respect to that oak tree and to that cat, that the latter went up the former.

But what about the concept *going up*? It is tempting to remove that last stumbling block by

(1#) The dog thinks, with respect to that oak tree, to that cat, and to the relation of x going up y, that the first two satisfy the last.

But such a move is counter-productive. For now the dog seems to require the concept of satisfaction, and possibly the concept of an ordered n-tuple. And these are feats which have taxed even some of my logic students. The moral is clear. Any thought ascription will end in a noun-clause which involve *de dicto* rather than *de re* phrases.

When you're in a hole, you had better stop digging. The value of *de re* paraphrases lies in the fact that for any particular noun-phrase occurring in the content-clause, we can provide a *de dicto* paraphrase which makes clear what object, event, etc. the subject is entertaining a belief about without imputing concepts by which we might identify that object. As regards the verb-phrase, this option is at any rate less attractive. But I for one would be sanguine about crediting the dog with the concept of *going up*. In any event, I shall contend instantly that employing a particular verb-phrase in a noun-clause does not commit us to imputing to the subject the concept which the verb-phrase expresses for us.

The second objection to holodoxastic thoughts is this. Granting thoughts to animals while denying them concepts suggests that there is an incongruity between ascribing thoughts to animals and ascribing thoughts to linguistic creatures. In the second case, our ascriptions impute to the believer a grasp of the

concepts involved, whereas in the first they do not. This creates a pressure for holding that intentional verbs like “believes” are ambiguous, referring either to a holodoxastic, behavioral phenomenon—notably perceptual experience--or to a conceptual, linguistic one like full-blown thought.

In this vein, Malcolm suggests that while the dog can “believe” that the cat went up the oak tree, only humans can “have the thought” that it went up the oak tree. Similarly, Dummett maintains that while humans can have thoughts consisting of concepts, animals have mere “protothoughts” consisting of spatial representations. And McDowell (1996: 50-1, 63-5) resists the idea that there is a ‘non-conceptual content’ common to the perception of humans and animals, holding instead that the latter are capable only of ‘perceptual sensitivity’ rather than genuine experience.

Unfortunately, this type of distinction seems to count against ascribing one and the same belief to humans and animals. It suggests that “Both Sarah and the dog believe that *p*” is not so much a falsehood as a zeugma, like “Both the exam and the chair were hard”. For “Sarah believes that *p*” comes out as “Sarah has the thought that *p*” while “The dog believes that *p*” comes out as “The dog has the protothought that *p*”.

In my view, however, we can grant that there are important differences between the beliefs of conceptual and non-conceptual creatures, yet resist the pressure towards postulating distinct objects and hence distinct attitudes, provided that we avoid the building-block model of thought and its ‘contents’, whether conceptual or non-conceptual. A certain disparity between the terms used in a belief report and those that could be used by the subject is present even in the linguistic case, without constituting a fundamental incongruity. The terms which occur in the content-clause are in general dictated not so much by the creature whose belief we report, but by the concerns of speaker and audience. Thus, “Sarah thinks that the charlatan you introduced me to is about to give her a biscuit” can be in order, whether Sarah is an adult, a child that lacks the concept of a charlatan, or a dog (Rundle 1997, p. 83).

Consequently, it is far from obvious that attribution of beliefs requires attribution of concepts. Still, the question whether animals can possess concepts remains relevant, for two reasons. When it comes to attributing beliefs to animals, some terms are more absurd than others. This suggests that animals can be credited with some concepts but not others. Furthermore, if some animals have conceptual

capacities, the lingualist argument from concepts fails even if it is right to tie beliefs to concepts.

7. Animal Concepts

With respect to animal concepts, one finds the same spectrum of opinion we already encountered concerning animal thoughts. Kant, Frege, Davidson and Dummett occupy the lingualist corner. According to them, animals can perceive, but lack concepts of *any* kind. In the other corner are cognitivists, who have no qualms about ascribing complex concepts to animals. An intermediate position is occupied, for example, by Anthony Kenny, who maintains that animals can possess some concepts, namely those that can be manifested in non-linguistic behavior (1989, pp. 36-7; see also DeGrazia 1996, pp. 154-6).

Proponents of this position have to concede that the concepts animals have are often not the ones we use in ascribing thoughts to them. The discriminations which underlie animal behavior may not coincide either extensionally or intensionally with our verbal classifications. A dog might group cats together with hamsters or distinguish black cats from all others; and even if it groups all and only cats together, it might recognize them by smell rather than visually. But this by itself is no obstacle to ascribing to them concepts that *differ* from ours. For example, when Sue Savage-Rumbaugh's chimpanzees distinguish foodstuffs and tools, the operative difference seems to be simply that between the edible and the inedible (1986, p. 257). Accordingly, what kind of concepts we should ascribe to avoid anthropocentrism is a matter for ethological discoveries. We discover animal concepts by discovering the parameters governing their discriminatory behavior. Such considerations are likely to indicate that our ordinary ascriptions require qualification, but not that they involve the kind of convenient pretence lingualists have diagnosed.

Whether this criticism holds water naturally depends on what one makes of concepts and concept-possession. According to one construal, concepts are principles of discrimination, and to possess a concept is to have the ability to recognize or discriminate different types of things (Price 1953, p. 355; Dupré 1996, p. 331). This construal is *prima facie* plausible, and has served as a starting point even for many who regard concepts as a type of mental representations. It certainly implies that animals can possess concepts. Both in the wild and in the laboratory, animals distinguish between a host of different colors, tastes, sounds,

shapes, stuffs, quantities, types of creatures, etc. Moreover, many of these capacities are learned rather than innate.¹⁰

Davidson thinks that this account of concepts falls prey to a *reductio ad absurdum*. “Unless we want to attribute concepts to butterflies and olive trees, we should not count mere ability to discriminate between red and green or moist and dry as having a concept, not even if such selective behavior is learned” (1997, p. 25; similarly Geach 1957, pp. 16-7). Leaving aside butterflies for the moment, I agree that it would be absurd to credit olive trees with concepts. But I do not accept that this absurdity follows from treating concepts as powers of discrimination. Olive trees do not discriminate between moist and dry soil, since discrimination is a prerogative of *sentient* creatures, that is, animals. We must distinguish between mere differential reaction to causal inputs, which is a universal feature of physical phenomena, and discrimination, which is tied to creatures with perceptual capacities.

Nevertheless, even proponents of animal concepts have come to accept Davidson’s conclusion, namely that conceptualization requires more than discrimination (e.g., Allen/Hauser 1996; Allen 1999; Stephan 1999). But there is much less agreement on what more is needed.

One noteworthy proposal is that of Allen and Hauser. They distinguish between “recognizing an X” and “recognizing something *as* an X or recognizing it to be an X”. The former is merely the “extensional characterization of a discriminatory ability”, while the latter requires the ability to recognize an X on the basis of several different properties, notably on the basis of properties which transcend perception. Perhaps these properties should even be essential rather than accidental to Xs (1996, p. 51).

I find this proposal unconvincing. For one thing, it is far from clear that “recognizing an X” is extensional: it would seem, for example, that one can recognize a flash of lightning without recognizing a certain type of electric discharge. For another, the proposal rules out the possibility of distinguishing either between perceptual and more abstract concepts or between having more or less rich concepts of an X. Thus it implies that before the advent of instruments to measure the length of electromagnetic waves, humans had no color concepts, because they could recognize colors in only one way—by looking—and one which is purely perceptual. I find it even less plausible to suppose that one has the

concept of an X only if one distinguishes Xs by those features which we regard as essential to Xs.

What is correct, however, is that for creatures that are capable of distinguishing between essential and accidental properties, what concept of an X they possess is determined by what properties they regard as essential to being an X. Now, the distinction between essential and accidental properties is beyond the grasp of animals. But this should not count against their having concepts, since even many philosophers, especially radical empiricists, have at best a tenuous grasp of the difference. Distinguishing essential from accidental properties is, in my opinion, crucial to a proper understanding of concepts, but it cannot be crucial to their possession.

8. Concepts and Normativity

For these reasons, I favor a different way of separating conceptualization from discrimination, namely one which stresses the *normative* dimension of conceptual classification. This idea goes back to Wittgenstein, and it has been succinctly expressed by Davidson. “To have a concept is to classify objects or properties or events or situations”, or, more accurately, to be able to do so. Powers of discrimination, by contrast, are mere “dispositions”, and therefore, “as Wittgenstein emphasized, have no normative force”. Such dispositions do not involve the ability to *recognize a mistake*, and hence no knowledge of the difference between correct and incorrect behavior (1997, pp. 24-5; see 1985, p. 480).

It is at least partly the absence of such classification which makes us reluctant to credit butterflies with concepts. Furthermore, the normativity required for such classification presupposes that the classifier can make a mistake which she is capable of recognizing as such. A Wittgensteinian distinction can help to clarify this point.¹¹ To be capable of classifying or misclassifying things, a creature *a* must not just have a disposition to behave *in accordance with a rule*--as butterflies do when they land only on red petals--but of *following a rule*. That is to say, the principle which distinguishes *Fs* from non-*Fs* must be part of *a*'s *reason* for differentiating between *Fs* and non-*Fs*, not just a law to which its discriminating behavior conforms.

If *a* can classify things into those which are (an) *F* and those which are not, it must be possible that *a* should be mistaken, namely in taking something as not

being *F* which is in fact *F*, or in taking something as *F* which is in fact not. But *a* can be accused of making a mistake in applying the rule which distinguishes *F*s from non-*F*s only if *a* is also capable in principle of recognizing that she has violated that rule. Only given that possibility can *a* be said to diverge from a rule which she was trying to follow, i.e. to have acted contrary to her own intentions. Otherwise, *a* is merely diverging from our expectations or from a statistical norm. As Davidson points out, a slippery road may be a danger or a nuisance, but it does not commit a mistake. *Mutatis mutandis*, a butterfly that fails to discriminate between red and green may reduce its biological fitness, but it does not violate a principle to which it has committed itself. There are of course types of mistakes that do not require this possibility, e.g. failures to perform in line with evolutionary design. But without an intention to perform in this way, such failures are not misapplications of a rule.

However, the crucial question is whether such normative behavior is the prerogative of linguistic creatures. Davidson thinks it is, because the behavior of animals and children is purely mechanical, no different in principle from that of a heat seeking missile (1997, p. 25). This argument rightly assumes that only intentional discriminations can be corrected in the relevant sense, because only *intentional* behavior can be accused of misapplying a principle of classification. It also intimates, again rightly, that such behavior must be voluntary in the sense that the agent could have done otherwise. Mechanical behavior--no matter whether unconditioned or conditioned--cannot be accused of failing to live up to a principle, roughly because ought implies can. This is why classification is not the exercise of a mere disposition to react differently to distinct external influences, even if, as with animals, these influences are stimuli perceived by a sentient creature. Rather, classification is the exercise of an *ability*. Unlike dispositions, abilities are not automatically exercised under specified conditions; the agent can intentionally exercise them or refrain from exercising them.¹²

At the same time, Davidson is wrong to hold that non-linguistic creatures have only dispositions and lack abilities. The behavior of non-linguistic creatures is not always explicable solely by reference to immediate biological imperatives. Both prelinguistic children and the great apes are capable of voluntary action, because they can refrain from a particular action, either by pursuing their goals in a different way or by forsaking them, at least temporarily.¹³ By the same token, in a particular situation they are capable of either heeding or disregarding a difference.

That is to say, they are capable of distinguishing objects of types *F* and *G* in one situation, and of ignoring the difference in another. It would be wrong to ascribe such classification to butterflies. But it seems equally wrong to deny classification to chimpanzees capable of selecting or making tools in advance of attempting a task. For these creatures deliberately distinguish between different kinds of objects (e.g. different types of stones) in some situations, but may disregard the difference in others, or if they are not in the mood (see Byrne 1995, pp. 150, 187-9, 225, ch. 7; Tomasello/Call 1997, pp. 36, 78). And here the question of whether a discrimination has been learnt is important. An unconditioned reflex cannot be the exercise of an ability, but a learnt pattern of response can, because it is not necessarily automatic.

This response *may* confine non-linguistic concept possession in the normative sense to infants and the great apes. However, it does not make concept possession dependant on language possession, but on discriminatory behavior that is sufficiently complex and flexible to be subject to normative assessment. Once more, the lingualist could not reply that the appearance of flexible behavior among animals is deceptive, without inviting the same challenge concerning humans.

The idea that cognition in animals is a measure of the complexity and flexibility of their behavior is widespread (e.g., Tomasello/Call 1997, pp. 7-12; Dupré 1996). Davidson's point that the ability to recognize and correct mistakes distinguishes classification from discrimination has also been taken on board in recent contributions (Allen 1999; Stephan 1999, p. 87). I want to suggest that these two points are connected through three requirements: *classification* must be rule-guided, *rule-guided behavior* must be intentional, and *intentional behaviour* must be supple and plastic.

However, these requirements may yet prove to be the undoing of animal concepts.¹⁴ For it is possible to argue as follows. Even if animals are capable of acting *voluntarily*, in the sense of doing otherwise, and of acting *intentionally*, in the sense of acting for a purpose, they are incapable of acting intentionally in the stronger sense of *acting for a reason*. We explain the behavior of animals by reference to reasons, (e.g. "the dog runs to the oak tree because he wants to catch the cat"). But in doing so we indicate only what their purposes or goals are, not *how they have reasoned*, i.e. what their *justification* is for acting as they do. For, as Rundle (1997, ch. 4) has argued, that would presuppose that they are in

principle capable of stating such reasons. If this is correct, we can rule out animal concepts by ruling out animal reasoning. Animals might discriminate for a purpose (e.g. to reap certain rewards), but they cannot *reason*. Even though their discriminations may be voluntary, they do not follow rules: they do not distinguish *Fs* from non-*Fs* for the reason that *Fs* possess certain distinctive features.

But is this line of argument correct? Can a creature only act for a reason if it is capable of communicating this reason? Take a chimpanzee that has learnt to use different tools in the pursuit of *dorylus* ants and *macrotermes* termites. It is plausible to maintain that its reason or justification for matching tool and prey is that they possess certain features. This impression is strengthened by the fact that chimpanzees display non-linguistic forms of behavior that go together with the correction of error among humans, such as hesitation, displeasure, discarding one type of tool in favor of another, etc. More generally, it is far from obvious that animals are incapable of reasoning. Chimpanzees seem to do just that in their construction and employment of tools in advance of feedback from the task itself. Finally, consider the story of Chrysippus' hunting-dog (see Sorabji 1994). In chasing a prey of which it has lost the scent, this dog reaches a cross-roads; it sniffs down the first path, then sniffs down the second path, then it immediately follows the third *without* sniffing. In the case of dogs, perhaps such behavior could only be a rigid conditioned reflex. But I can see no reason for denying that this is an intelligible form of behavior for a non-linguistic creature capable of voluntary action. And if it is, what is wrong with the explanation that the behavior evinces a disjunctive inference (" p or q or r ; neither p nor q ; ergo r ")? We can readily grant that there is a difficulty in describing such a creature as silently consulting a principle. But as Ryle has convincingly argued, even the intelligent performances of humans are rarely accompanied by conscious consultations of this kind.

However, a related problem has been pointed out to me by Anthony Kenny.

Although humans need not actually verbalize their reasoning, they are capable of doing so. In the absence of this capacity, the question arises of what in an animal's behavior could correspond to the *ergo* of linguistic reasoning. This point is unanswerable with respect to creatures like dogs. But in the case of chimpanzees there *can* be an analogue to our *ergo*, however thin. In the context of encountering and pondering a problem, certain gestures and grimaces, followed

by renewed activity, can be interpreted as marking the point when the shilling dropped. Even if this is an anthropomorphic interpretation in the case of chimpanzees, we can easily imagine a non-linguistic hominoid whose facial expressions and gestures are so close to ours as to make such a description inevitable. Imagine a *homo erectus* who proceeds in the same way as the dog of Chrysippus, yet accompanied by suitable grimaces and gestures, e.g. the scratching of heads (which, incidentally, is also a notable feature of chimpanzee deliberation).

Furthermore, even without the *ergo*, as regards context (problem solving), demeanor (e.g. head scratching) and result (problem solution), some intelligent behaviour by chimpanzees is close enough to that of humans to count as a manifestation of instrumental reasoning.¹⁵

In my view, therefore, there is no compelling case for claiming that animals cannot possess concepts. Moreover, even if there is, it does not suffice to deny them thoughts, because of the possibility of holodoxastic belief of perceptual kind. Linguists are right to insist that “concept-formation is not a way station between mere dispositions...and judgements” (Davidson 1997, p. 25). Concepts and judgements remain on a par. A chimpanzee capable of classifying things into sticks and knives, and hence of concepts like that of a stick, can also believe that the object it confronts is a knife, or wish that it were a stick. My point is rather that it has yet to be shown either that concept-formation and judgement require *linguistic* judgement or that holodoxastic belief cannot be a way station between mere dispositions and judgement involving concepts.

9. The Holistic Nature of Thought

There is one last argument against animal concepts and, by implication, against the possibility of conceptual thought among animals. It is that the concepts which feature in the beliefs we commonly ascribe to animals require certain general beliefs with which we cannot credit them. This is part of a wider qualm, namely that attributing thoughts to animals is incompatible with “the intrinsically holistic character of the propositional attitudes”, the alleged fact that “to have one is to have a full complement” (Davidson 1985, p. 473; see also Stich 1979). Since at least some members of that complement are definitely beyond their pale, animals cannot even have the simple beliefs commonly ascribed to them.

According to Davidson, there are three types of beliefs “on which any particular thought depends”: particular beliefs (e.g. that the cat seen running a moment ago is still in the neighborhood), general but empirical beliefs (e.g. that cats can scratch or climb trees), and logical beliefs. The first type does not cast *novel* doubts on animal thought. Having recognized his original error, Malcolm’s dog might engage in searching behavior that indicates his belief that the cat is still in the neighborhood.

The other two types give rise to three new objections. The first is a conceptual holism designed to show that animals cannot possess the specific concepts which occur in our naive ascriptions. The two others are more abstract and trade exclusively on logical beliefs. One is that beliefs must display a degree of rationality which requires a large web of consistent thoughts. The other concerns the identity conditions of thought. The logical relations between thoughts are partly constitutive of their identity, because the content of a thought cannot be divorced from what other thoughts it entails and what other thoughts entail it. The thought that *p* could not lack the logical connection with the thoughts it entails “without becoming a different thought” (1985, 475; see 1994, 232; 1999, 7-9). Accordingly, if *p* entails *q*, and if *a* believed that *p* without believing that *q*, *a* would be at least partly *ignorant* of the content of its own belief. Such ignorance seems incompatible not just with first-person authority about the content of thoughts, but with the assumption which has guided our whole discussion: believing that *p* is not simply a mental occurrence, but something with a specifiable content. To the extent to which *a* is ignorant of the content of his alleged thought, *a*’s thought cannot be *the same* as that of *b*, who is cognizant of that content. Ergo, if *b*’s belief is that *p*, *a*’s belief cannot be that *p*.

The idea that thoughts are individuated through their content and hence through their logical connections is correct in principle. But the question is whether this idea holds for all types of thought, and without qualification. To tackle this question one must do what neither Davidson nor his opponents have done so far, namely spell out and assess various holistic principles informed by this idea. I shall argue that these principles are either too strong for the lingualist case, because they preclude plausible cases of human thought, or too weak because they allow for some forms of animal thought.

The strongest holistic principle lingualists could invoke runs as follows:

$$(A) \quad aBp \ \& \ (p \Rightarrow q) \qquad \Rightarrow \qquad aBq$$

This principle is excessively restrictive. Human beings can believe, for example, the axioms of Euclidean geometry without believing all the theorems entailed by them. At this point, Davidson might claim that to “intelligibly ascribe” (1985, 475) a thought, *a* need not actually believe that *q*, but only be *capable* of believing (learning, understanding) that *q*. Symbolically:

$$(B) \quad aBp \ \& \ (p \Rightarrow q) \quad \Rightarrow \quad \diamond aBq.$$

Even that principle can be challenged, however. Why shouldn't there be people who believe the Euclidean axioms without even being *capable of learning* all the theorems? If there are, Davidson's logical holism is too bloody-minded about the identity conditions of thoughts. It is far from obvious that grasping a thought is an all-or-nothing affair the way it suggests. Granted, in the case we are now envisaging there is a difference between what *a* believes and what *b* believes. But why should we have to refrain from using the same content-clause (“that *p*”) as soon as there is some consequence of *p* that *a* but not *b* is capable of understanding? After all, many humans have a habit (nasty according to some, endearing according to others) of rejecting *some* of the logical consequences of their beliefs, even if these are pointed out to them.

However, Davidson need not subscribe to any *general* closure principle, not even a modally qualified one like (B). He states that “there is no fixed list of things someone with the concept of a tree must believe” (1985, 477). This may simply mean that there is no fixed list of things entailed by thoughts about trees; but it may also mean that among these entailments there is no fixed list which *a* must be capable of appreciating, and hence that *a* need be capable only of appreciating *some* of the things entailed by *p*. Schematically, this would amount to something like this:

$$(C) \quad aBp \quad \Rightarrow \quad (\exists q)((p \Rightarrow q) \ \& \ \diamond aBq)$$

According to this principle, if a human being is incapable of even understanding *any* of the theorems entailed by Euclid's axioms, his beliefs in the axioms do not have the same content as the belief of a human being who is capable of understanding these theorems; and to that extent, the two have different beliefs.

At this juncture, an opponent of lingualism is left with two replies. The first is to reject (C). Thus it might be claimed that logical relations are neither the only nor the most basic feature by which we identify a belief. After all, we have no better way of describing the failure of illogical humans than this: they are unable to grasp the consequences of their beliefs. But that very formulation

presupposes that we can distinguish between *having a belief* and *being able to grasp its consequences*. Simple perceptual beliefs are ascribed even to humans primarily on the basis of behavioral responses. When Mowgli flees from Shera Khan, we are not worried about what consequences of “A tiger is chasing me” he is capable of appreciating.

But perhaps we should be worried if Mowgli were incapable of grasping *any* of these consequences. For this reason, it is best to accept (C) while maintaining that there are animals capable of appreciating *some* consequences of simple perceptual beliefs. For example, by consistently barking up the oak and completely ignoring the pine even when prompted by us to do otherwise, Malcolm’s dog could display the belief that the cat is not on the pine tree. Less contentiously, *if* non-linguistic creatures are in principle capable of reasoning and if chimpanzees do in fact reason, as argued in section 7, then such creatures are capable of appreciating certain consequences of things they have learned about their environment.

This point is connected with the holistic argument about rationality. Davidson maintains that having even a single thought is to have a “largely correct logic” (1985, 475-6), i.e. a whole pattern of thoughts that cohere logically and do not display radical irrationality. This argument is compatible with animal thought. The great apes can be rational not just in the sense of behaving in accordance with evolutionary design or even in accordance with their own “personal” interest, but also in the sense of acting according to what they have observed or learnt with respect to a given task. What’s more, like humans they can also, on occasion, be irrational in this sense and improve their performance as a result of trial and error or instruction.

At this point, the lingualist might continue his attack by maintaining that thought requires not just the capacities to act rationally and to have certain beliefs *entailed* by an original belief, but the capacity to have *beliefs in the entailments*. This argument is not in Davidson, nor is it plausible, since it would also rule out children and many adults. It is unsuccessful even if the holistic requirement is restricted both modally and in scope, as in

$$(D) \quad aBp \quad \Rightarrow \quad \exists q((p \Rightarrow q) \ \& \ \diamond aB(p \Rightarrow q))$$

On one understanding of (D), some animals qualify. They can learn that *p* entails *q*, in the sense of consistently reasoning from *p* to *q* in solving cognitive tasks. What they cannot display is an awareness of the difference between an *empirical*

and a *logical* consequence. It makes no sense to wonder whether Chrysippus' dog acts on an inductive generalization ("Whenever p or q and not- p , it turns out that q ") or on a logical inference (" p or q ; not p ; ergo q "). But we ascribe disjunctive reasoning to human beings *irrespective* of whether they are capable of recognizing this difference; indeed, some eminent empiricists are committed to the idea that ultimately this difference is more apparent than real.

This leaves the argument from conceptual holism. That argument does not threaten the possibility of holodoxastic belief (sect. 2). To assess its consequences for conceptual belief, one should distinguish between two types of general beliefs, namely conceptual and empirical (without denying that some of Davidson's examples are borderline cases, e.g. that trees are growing things that need soil and water).

Davidson's insists that beliefs presuppose certain general empirical beliefs on account of their constituent concepts. This is implausible for many of his examples (see 1985, 475; 1984, 200). It would seem that one can believe that the cat went up the oak tree without knowing that trees burn, or that one can believe that a cloud is passing before the sun without knowing that clouds are made of water vapor. Such a radical conceptual holism also creates a general problem, namely that any empirical discovery amounts to a conceptual change, with the possible consequence that scientific theories talk about different things as soon as some of their empirical claims are at odds (Fodor/LePore 1992, ch. 1).

Davidson seems on firmer ground when he invokes general beliefs which are clearly conceptual, e.g. that cats are animals or continuing physical objects that move in certain way (1999, 8-9). Animals cannot recognize the conceptual status of such beliefs, nor do they need to in order to have thoughts. But as Davidson himself recognizes, they can "generalize" in the sense of reacting similarly to similar stimuli (e.g. 1985, 480). By this token, they can also in principle distinguish not just between, e.g., mice and cats, but between animals, plants and inanimate objects. The notion of a continuing physical object is more problematic, since it is in many respects a result of philosophical reflection that exceeds the requirements of ordinary human thought (see Strawson 1992, ch. 2). But if it is spelled out in a pedestrian way, it is clear that chimpanzees can learn to distinguish, for example, between physical objects on the one hand, mirror reflections or TV images on the other. Finally, we must remember that a creature could have concepts without having *our* concepts.

This means that there is no independent holistic argument against animal concepts. More generally, holism does not provide a compelling objection against the possibility of animal thought. This is no reason to abandon holism altogether. There are plausible holistic principles—notably (C)—which exclude the possibility of a creature having just a single belief. In any event, the complexity required for conceptual belief is incompatible with a behavioral repertoire capable of exhibiting just a single belief. But these reflections do not establish that the web of which any belief must be part need extend as far as the web of sophisticated human thought. There may be larger and smaller webs. What kind of web is required may depend on the belief and the creature concerned. From the fact that an animal lacks our web of beliefs and our concepts, it does not follow that it has no beliefs and no concepts (see also Bekoff/Jamieson 1991, pp. 19-20; Dupré 1996, p. 332; DeGrazia 1996, pp. 154-8; Allen 1999, p. 39).

10. Conclusion

Where does all this leave the lingualist thesis that the capacity for thought requires the capacity for language, especially on account of concepts? As regards intensionality (sct. 3), the problem is not that a non-linguistic analogue (recognizing the same objects through different features) is ruled out in principle, but that the kind of distinctions that can be displayed in non-linguistic behavior is restricted. The same message emerges from my moderate holism, according to which thoughts come in larger or smaller packages (sct. 7). Packages that include beliefs manifestable only in linguistic behavior are the preserve of language-users. Again, rejecting the building-block conception of thoughts and concepts makes room for employing intentional verbs like “believes”, “wants” or “intends” to animals, without necessarily imputing concepts (sct. 4). Finally, whether or not animals can have concepts of a simple kind depends not on their having a language, but to the extent to which their discriminations are rule-governed and hence intentional (scts. 5-6).

To this extent, our discussion reinforces the intermediate position. At the same time, they also support Davidson’s suggestion that animals do not just have thoughts of a simpler kind, their having these thoughts *amounts* to something simpler. In the case of animals, there is at most an analogue of intensionality. In so far as thought-ascriptions to animals are holodoxastic, they are not only restricted to thoughts about perceptible features of the environment, they also lack

conceptual connections which apply in the human case: we cannot infer from the fact that the dog thinks that x is F that the dog grasps the concept F . Furthermore, even if animals can have concepts, these are not just confined to concepts of a (roughly speaking) perceptual kind. Animals are also incapable of satisfying one of the two criteria which we standardly use in attributing concepts to humans. They may be able to *apply* principles of classification, but not to *explain* them. In fact, the two restrictions are linked. A chimpanzee may discriminate between its keeper and other humans just as deliberately as it does between red and black ants. But we are more inclined to ascribe to it the concept of redness than the concept of a keeper, because there is so much more to explain with respect to the latter. Finally, even those thoughts animals might be credited with stand in a smaller logical space. They lack the kind of context which characterizes sophisticated linguistic thought.

Accordingly, attributions of simple thoughts to animals are neither intensional, nor conceptual, nor holistic in the way thought-attributions to humans are. However, the best analogy is not the anthropomorphic explanation of missiles, but one Davidson has suggested in discussion. Attributing thoughts to animals is like using numerals for the purpose of labeling members of a football team. Although natural numbers stand in complex relations of order and numerical difference, these relations are ignored in this context. What matters here is not the numerical difference between two numbers, nor even which one is greater, but only that no two numbers should be used for the same player.

The analogy is illuminating. Thought attributions to animals employ a rich conceptual apparatus to an area in which many of the logical connections which constitute that apparatus do not apply. But it breaks down in one important respect. Attributing thoughts to animals is not simply an impoverished application of a rich technique. For that richer technique evolves around a central core of cases in which creatures believe, know or desire things on account of their wants and perceptual capacities. These biological basics of belief are shared by humans and animals. At the same time, when we move from this core area in the direction of conceptual thought, we also move *in the direction* of linguistic thought. The features which non-linguistic creatures must possess to be capable of conceptual thought--intentionality, complexity, flexibility--correspond to those features by which theorists from Descartes to Chomsky have distinguished language from

more basic systems of communication. In this respect, at least, our reflections tend to confirm rather than to negate the connection between thought and language.

Postscript I (2008)

The central objection to animal minds discussed in my essay might be called the ‘lingualist master-argument about concepts’ and can be summarized as follows:

- P₁ Thinking requires concept-possession
- P₂ Concept-possession requires language
- C₁ Thinking requires language
- C₂ Animals cannot think

The argument is valid, given our definition of ‘animal’. Yet I deny that it is sound, since both P₁ and P₂ are mistaken. Indeed, I have sharpened my objections since 1999. The fact that animals can perceive that p (see sct. 5) confronts the lingualist with an unenviable dilemma. *Either* discriminatory capacities suffice for concepts; then P₂ is wrong, since animals have many concepts (just not ours). *Or* discriminatory capacities do not suffice for concepts; then P₁ is wrong, since we can (and indeed must) ascribe thinking, and in particular perceptual beliefs, without imputing concepts.

As regards P₂ in isolation, however, I am no longer entirely happy with the account I gave in 1999. It now strikes me that linking conceptual thought exclusively to rules or normativity may be one-sided and overly intellectualist. For this reason I am currently exploring an alternative though related avenue. It which treats the attribution of concepts through direct reference to the idea of a judgement rather than to normativity (see Glock 2010). Judgements are hardly the flavour of the month, philosophically speaking. The linguistic turn supposedly replaced mental categories like judgement by notions which are less psychologistic and more objective, such as assertion, statement or proposition. ‘The term “proposition” with its more impersonal and logical flavour has completely replaced the older less impersonal and more psychological “judgement”’, we read in an entry on propositions (Flew 1979). More surprisingly, the recent reversal of the linguistic turn has done little to revive the fortunes of judgements. None of the leaders of the cognitive revolution seems keen on them. Perhaps this is because they continue to labour willy-nilly under the shadow of the linguistic turn. Fodor, for instance, extols the priority of private

minds over public languages, yet he retains the machinery and vocabulary (meaning, content) of logico-linguistic analysis, because he regards thought as a process of logical computations on internal sentences. Recent works of reference in philosophy are cheaper by the dozen (metaphorically speaking). Yet one searches most of them in vain for an entry on ‘judgements’.¹⁶

One misgiving that judgements standardly provoke is that the notion suffers from an act/product or act/object ambiguity, denoting either the judging of something to be the case or that which is judged. As we have seen, however, this holds equally for ‘thought’, ‘belief’, etc. Indeed, such ambiguities also affect ‘statement’ or ‘utterance’, their linguistic pedigree notwithstanding: a statement can either be *what someone does*—namely to perform a speech-act—or the linguistic token produced by the act, or *what someone states*. To be sure, ‘proposition’ does not suffer from an act/product ambiguity. As I have argued, however, the notion is at best misleading when it comes to considering animal mentality.

The notion of judgement, by contrast, does not beg any questions either for or against lingualism. Judgements are traditionally treated as mental analogues of worldly state of affairs on the one hand, linguistic sentences on the other. Furthermore, the connection between concepts and judgements reaches back right to this initial contrast with linguistic phenomena. While sentences are composed of words, judgements are supposed to be composed of notions or concepts. The connection famously appears in Kant’s *Critique of Pure Reason*, which treats the understanding as the capacity to employ concepts in judgements (B 94). Finally, it is central to Geach’s *Mental Acts*, which characterizes judgements as mental acts and concepts as abilities exercised in acts of judgement (1957: §4).

One fly in the ointment. For Geach (1957: 9) and in ordinary parlance, judgements are episodic mental acts. But many beliefs, including those that are the prerogative of creatures with conceptual abilities, are what is known as dispositional, i.e. long-standing. I shall try to extract the fly presently. For now, I simply stipulate that judgements are those intentional states which satisfy three conditions:

- a. their content is specified by a that-clause (rather than an object designation or infinitive);
- b. they need not be expressed linguistically (by contrast to assertions);
- c. they ipso facto involve concepts (by contrast to holodoxastic beliefs).

By focusing on the idea of judgement rather than of normativity, we can avoid the impression that a subject of conceptual thought must constantly consider the relation between its own mental operations and rules. In a straightforward perceptual judgement, we apply rules or principles of classification not by considering them, even in *foro interno*. Our eye is on reality rather than the mind, or, if you prefer, on material rather than normative reality. Judgements may presuppose the operation of rules. Yet they do not presuppose the *consultation of rules*, but the *consideration of options*, and the *deliberate choice* between them. It is one thing to see a lizard scurrying by. It is another to judge that it is a lizard, or, if you prefer this idiom, to see it as a lizard. For this involves placing the perceived object into one of several possible categories. A lizard rather than a scorpion, for instance, and hence potential prey rather than a potential threat.

The link between concepts and judgements serves to spell out an alternative (though related) way of distinguishing *mere discrimination* from *conceptual classification* to the one pursued in section 8.

Discrimination:

A discriminates between F and G (F and not-F):= A reacts to an object x differently, depending on whether it perceives x to be F or perceives x to be G (F or not-F).

Classification:

A classifies things into F and G (F and not-F):= A *judges* that x is F rather than G, or F rather than non-F.

Judgement as I explained it precisely involves classifying an object *as* being of a certain kind. And this idea can in turn be spelled out by saying that judgement requires the deliberate choice between different options in a discrimination task (an explanation which also comports well with the judicial sense of judgement). In conceptual classification A recognizes x *as* being F rather than non-F or G. The idea of invoking deliberate choice is to guarantee and explain the *as* part by insisting that A respond to x being F (mere discrimination) *plus* the *rather-than* part.

For Leibniz, a judgement is a deliberate and explicit mental act (*Nouveaux Essais* IV.14). For Frege, a judgement is the response to a question, the latter in turn being characterized as a demand to judge (1918/19: 143).¹⁷ Combining these two ideas, one arrives at the claim that a judgement is a deliberate *response to a*

question. But now lingualism seems to be vindicated after all, since questions are inherently linguistic. Except that, questions are in the first instance the linguistic fallout from problems. Animals are capable of facing a problem and deciding on which options to pursue. And some of them can do this in a way which is deliberate and explicit, even in the absence of either outer or inner vocalization. In short, judgement arises out of a capacity for classification in the context problem-solving that we share with some animals.

One might suspect that my account of judgement and hence of belief is circular, because in considering various options the animal already needs to judge. But this would be wrong: to consider options in a task of perceptual classification requires perceptual discriminations and beliefs, yet there is no need to insist that these must involve concepts. What is required is an attentive and deliberate examination of these options in the context of an appropriate task. And such attention and deliberation can be manifested in non-linguistic behaviour. The deliberate choice requirement can be satisfied once more by animals that possess *abilities* (which are exercised), rather than mere *dispositions* (which are automatically triggered), irrespective of linguistic capacities.

Finally the fly in the ointment. Judgement in this sense is both a mental activity and episodic. By contrast, judgements in the sense of thoughts involving conceptual capacities are neither activities nor episodic. But there is no irresolvable conflict here. For judgement in the sense of conceptual thought is the prerogative of creatures capable of episodic judgement.

Postscript II (2008)

The preceding text is based on an article that appeared in 1999. It has been slightly altered and substantially extended. In particular, I have added two new sections, in defence of a third-person approach to the mind (sct. 3), and of holodoxastic belief (sct. 6). I have also elaborated the argument in favour of holodoxastic belief (sct. 5) and the discussion of holism (sct. 6). Throughout, I have made minor alterations, mostly of a stylistic kind. I have also added references to pertinent publications since 1999, without, however, modifying my text in order to address them.

My work on animal mentality had two original roots, associated, respectively, with Wittgenstein and Davidson. Ever since 1991 I have been exploring the

connections between thought and language, inspired by the later Wittgenstein. There are essential links between thought and language. But the reason is not that language is the *medium* of thought, that we must always ‘think in’ symbols, as proponents of a language of thought would have it. As Wittgenstein and Ryle showed, thinking is not an inner accompaniment of intelligent behaviour and meaningful speech. Contrary to mentalism on the one hand, lingualism on the other, neither mental images nor words need cross our minds when we entertain a belief or reflect on a problem; and those that do fail to determine the content of what we think. Nevertheless, there is an intrinsic connection between thought and speech, for reasons briefly rehearsed in section 3:

“ascribing thoughts makes sense only in cases where we have criteria for identifying thoughts. Something must count as thinking that p rather than that q. This means that thoughts, although they need not actually be expressed, must be capable of being expressed. And only a very restricted range of thoughts can be expressed in non-linguistic behaviour.” At the time, I inclined towards an excessively lingualist gloss of this position: “the capacity for thought requires the capacity to manipulate symbols, not because unexpressed thoughts must be in a language, but because the expression of thoughts must be” (1997: 167). This is not underwritten by my own line of reasoning, which, after all grants that *simple* beliefs (aka thoughts) *can* be manifested in non-linguistic behaviour (for a more recent and sustained account of Wittgenstein’s reflections in this area see Glock 2006b). Nor is it correct.

This only dawned on me, however, after I started to work on a book *Quine and Davidson on Language, Thought and Reality*, published in 2003 by CUP. As part of this project, I obviously needed to tackle Davidson’s claim that ‘a creature cannot have a thought unless it has a language’ (1985: 477), famous among philosophers, infamous among zoologists and pet-owners. Some of Davidson’s objections to animal thought struck me as wholly unconvincing, since they are either fallacious or presuppose highly implausible theories about the nature of thought and meaning (see fn. 8). By contrast, the ones discussed in this essay—in particular the lingualist master-argument—I continue to regard as illuminating, though the legitimate conclusion to draw from them is an intermediate position rather than the radical lingualism espoused by Davidsonians.

In the course of writing about Davidson, I quickly became interested in the topic of animal minds in its own right, perhaps because of a fascination with

biology going back to school-days. My 1999 essay was the first fruit of the ensuing efforts. It was only after finishing the book on Quine and Davidson, however, that I broadened my horizon to include the wider anthropological debate about the similarities and differences between human and non-human animals which is such a prominent feature of contemporary culture. I would like to end with some brief comments on this sprawling area.

To find one's bearings here, I now favour the following terminology. On the one hand, we find *differentialists*, who maintain that there are crucial qualitative differences separating us from animals. On the other hand, we find *assimilationists*, who maintain that the differences are merely quantitative and gradual (see Brandom 2000: Introduction). Anthropomorphism and anthropocentrism (or human exceptionalism) are the accusations which differentialists and assimilationists, respectively, hurl at each other.

Normally the controversy between differentialists and assimilationists revolves around the question

What features, if any, are unique to humans.

The list of candidates which have been debated over the centuries includes possession of the following:

- consciousness or sentience
- self-consciousness
- knowledge of the mental states of others
- an immortal soul
- a moral sense
- a sense of humour
- a sense of history or the future
- tool use or tool manufacture
- language
- thought (rationality, reason)
- knowledge of necessary truths
- free will
- a capacity to act
- personhood or personality
- a capacity for culture or cultural progression

Versions of Differentialism and assimilationism can be more or less radical, depending on which and how many of these features they regard as, respectively, absent or present in animals.

We also need to distinguish two more basic types of differentialism—a *nihilist* ('ontological') and a *sceptical* ('epistemological') one. A nihilist about one of the contested features straightforwardly *denies* that animals can possess it; the sceptic about one of the contested features *doubts* that we can know it to be present. As mentioned in section 2, in either version the differentialist arguments normally do not concern the *empirical evidence* for attributing individual features to a *particular species*. Instead, they deny or doubt *as a matter of principle* that such features can be attributed to animals, or to animals of a general type. And these principles are of an a priori, conceptual or methodological nature.

This insight, combined with the third-person perspective propounded in section 3, suggests that nihilist differentialism is superior to sceptical differentialism. Once we have properly *understood* the question of whether animals have minds or specific mental capacities, the answer will be simple, since 'the empirical facts in question may, in many cases be quite banal. The trick is to decide what the relevant facts are' (Dupré 1996: p.323). The exhortation to put philosophical clarification ahead of empirical speculation is well-taken. But one result of conceptual and methodological will be, in my view, that the facts may be far from banal, and may require ingenious and sophisticated experimental set-ups to determine, something which in turn presupposes wider-ranging empirical knowledge. As a matter of principle, diagnosing mental phenomena in non-linguistic creatures *does* suffer from a certain indeterminacy, quite simply because we cannot ask the subjects. This should not lead us down the garden-path to general nihilism, however. For, as Wittgenstein rightly (though not famously) observed in his final writings, a certain 'imponderability' or 'indeterminacy' is constitutive even of mental concepts as applied to humans (see Glock 1996: pp. 97, 129). Making subtle emotional ascriptions, for instance, cannot be done on the basis of the subject's avowals alone, but may demand intimate acquaintance with their context and the subject's previous history. I now want to suggest that a slightly more general and fundamental imponderability should be granted in the case of ascribing at least some mental features to animals. Some questions may be difficult to decide, without therefore lending credence either to the blanket nihilist denial or to the dualist idea that there is a mental realm here which is

unfortunately hidden behind a metaphysical iron-curtain. Once we take this kind of imponderability in our stride, we may at least consider a heretical suggestion. Pet lovers and zoologists attribute a greater variety of mental phenomena to animals not just because they suffer from anthropomorphism, as philosophers are fond of intimating (see Davidson 1985, 474n1; 1984, 164), but at least sometimes because they are better acquainted with their behavior, perceptual capacities and form of life.

Still, the imponderability of the mental should once more alert assimilationists to the importance of *lingualism*, a position which denies that animals can have a contested feature on the specific grounds that they lack language. Lingualism is the favourite and most promising line of reasoning pursued by differentialists, whether nihilists or sceptics. Admittedly, other items on the list above tend to feature prominently in several differentialist arguments, notably self-consciousness. On the whole, however, these items promise succour to differentialism only because they in turn seem to require linguistic capacities.

In addition to Davidson's brand, other versions of lingualism play a role in the current debate (see Allen 2007). Proponents of 'higher-order theories of consciousness' tend to make even lower mental capacities like sentience dependent on second-order thoughts and hence on language. Then there are two positions inspired by Sellars, which link at least the capacity for genuine perception and thought to the ability to ask for and give reasons. Whereas McDowell (1996: 70) invokes Kantian ideas about the spontaneity of thought, Brandom (e.g. 2010) develops an elaborate theory according to which intentionality presupposes normativity, and the latter in turn intersubjective practices of score-keeping. Note that Sellarsian lingualism is radical not so much as regards the features which it denies to animals but as regards the *kind of linguistic capacity* it insists on. Asking for and giving reasons is an evolved and special linguistic skill, which even humans acquire rather late, and rarely to a degree that ought to satisfy McDowell and Brandom.

Accordingly, all three approaches move from highly presumptuous premises to highly implausible conclusions. This cannot be said of Hacker's more moderate lingualism (2007), which denies animals the capacity to act for reasons, among other things, by appeal to the ordinary use of mental vocabulary, often regimented by appeal to Aristotelian distinctions. But even this approach arguably fails to appreciate that very subtle distinctions could be drawn in the case of non-

linguistic hominids with behavioural repertoires, facial expressions and gestures like our own (see Glock 2009). At least in isolation from non-linguistic behavioural phenomena, language does not have the overriding and exclusive importance accorded to it by lingualists. It is not a prerequisite of all or most mental capacities. As Goethe sapiently reminded us, in the beginning was the deed rather than the word!¹⁸

NOTES

¹ Rationality is sometimes held to go beyond mere intelligence through (see Hurley & Nudds 2006: 2-3, 19-20): greater abstraction from here and now (sometimes known as “decentering”), greater generality, and being subject to normative constraints.

In my view this way of distinguishing the two is largely stipulative. As regards the last point, for instance, both the concept of rationality and the concept of intelligence presuppose a distinction between a general capacity and its successful or unsuccessful exercise. We can contrast a subject or agent A being rational with A being irrational. Both epithets presuppose, however, that A possesses the faculty of reason in the first place, rather than being a-rational or non-rational. In the case of intelligence we encounter the same kind of partition. Only intelligent creatures, creatures that possess the ability to behave intelligently, can strictly speaking behave stupidly, namely by either failing to exercise their intelligence in a context in which they are capable of behaving intelligently, or by exercising their intelligence in an inadequate manner.

If there is a clear-cut difference in the established non-technical usage between “rational” and its cognates on the one hand and “intelligent” and its cognates on the other, it would seem that it is this: rationality requires a capacity for *reasoning* (for more on this topic see Glock 2009).

² Nonetheless it has been contested. That animals can feel pain is *denied* e.g. by those who tie the capacity for sensations to the capacity for consciousness and the latter to the capacity for self-consciousness (e.g. Carruthers 1989; Dennett 1998 takes the second step but not, as far as I can tell, the first). It is *doubted* by those who, in the wake of Nagel, conceive of all sentience in terms of *qualia*, mysterious inner goings-on accessible only to their respective owners (e.g. Harrison 1991).

³ The question to what extent animals can be credited with beliefs or knowledge about the mental states of conspecifics and human experimenters continues to be hotly debated on empirical and methodological grounds. Contrast Tomasello/Call 2006 and Povinelli/Vonk 2006, representing, respectively, the ‘boosters’ and ‘scoffers’ about a ‘theory of mind’--or, as I would prefer, ‘mind-reading capacities’--in great apes.

⁴ Analogous considerations apply to the ‘subpersonal’ computational and other mental processes postulated by most cognitive scientists. They are not constitutive of mental phenomena as determined by our concepts, since not even the subjects themselves are aware of them. Furthermore, and on this point in agreement with Searle, I doubt that there is a level of ‘deep unconscious’ cognitive processes that lies between the ‘personal’ level of potentially conscious processes on the one hand, the neural causal basis of the latter on the other.

⁵ As far as I can tell, this holds true even for authors wedded to a stronger notion of mental representation, e.g. in Allen/Hauser 1996, 54-5.

⁶ These qualms are not due to a failure to heed Allen's distinction between social and individual concepts (1999, 35). Even a concept that is not actually shared between several individuals must be capable of being shared, and the extent to which individuals share a concept can be determined independently of establishing patterns of neural stimulation.

⁷ Davidson's work also features other arguments in favour of lingualism, including the argument that having a belief requires having the concept of a belief and that the latter requires language because of the need for "triangulation". I discuss these arguments in Glock 2000, but leave them aside here, since in my view they are less revealing about the connection between thoughts, concepts and language.

⁸ Admittedly, there is a rationale for insisting that thinking requires concepts which does not rely on the atomistic building-block model. Instead, it is fuelled by the holistic idea that concepts are abstractions from the inferential relations between propositions. We need to parse propositions into concepts, this inferentialist story goes, in order to explain, e.g., the logical relation between the proposition that the cat is on an oak tree and the proposition that the cat is on a plant. However, if inferentialism is to avoid not just the reification of concepts as building blocks but also the reification of propositions as objects of propositional attitudes, it must grant that having a belief is simply a modification of a subject. In that case it boils down to the holistic claim that one cannot entertain a belief without being capable of grasping its logical and conceptual implications. And that holistic objection to animal thought will be discussed in section ???.

⁹ I have phrased the matter in this fashion, because I do not want to commit myself to the idea that knowing that p implies believing that p.

¹⁰ For primates, see Tomassello/Call 1997, chs. 4-5), and for the even more surprising achievements of pigeons, see Herrnstein/Loveland/Cable 1976.

¹¹ The distinction is explained in detail by Baker/Hacker 1985, 154-8.

¹² For this distinction, see Kenny 1975. In ordinary parlance, dispositions include character traits which are half-way between dispositions in this technical sense and abilities: they are neither realized automatically nor simply subject to the will.

¹³ This will be obvious to the parents of any pre-linguistic two-year old. As regards the great apes, see Goodall 1986; Menzel 1974; Byrne 1995, chs. 8-9.

¹⁴ Even if these requirements are met in the case of certain animals, it still remains to be shown that these animals really correct mistakes, rather than simply alter their behavior. And if they do, does this require that they have second-order beliefs? For a discussion of these questions, see Glock 2000, sct. 5. The question of whether animal behavior can involve rules also plays a role in Hendrichs 1999.

¹⁵ For more recent and rather different discussions of reasoning without language see the articles in Parts I and II of Hurley/Nudds 2006.

¹⁶ Three modest exceptions are Honderich 1995; Blackburn 1994 and Dancy/Sosa 1991. The term doesn't even *crop up* in Guttenplan. In so far as the term occurs at all, it is mostly in relation to

Kant, ethics or aesthetics. The Kantian connection accounts for the fact that Brandom mentions judgements with some frequency (especially in 2000). He accepts Kant's contextualist idea that judgements are prior to concepts and his normativist idea that concepts and judgements are normative. But he follows Dummett's linguistic turn in 'treating the public linguistic practice of asserting as the fundamental activity involving [conceptual] contents rather than the private mental practice of judgement' (1994: 200).

¹⁷ I disregard one aspect of Frege's position, namely that the judgement concerns the truth/falsity of whole propositions rather than the applicability of a concept to an object. In the case of simple perceptual judgements, the two amount to the same.

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REFERENCES

- Allen, C. (1999) Animal Concepts Revisited: The Use of Self-Monitoring as an Empirical Approach. *Erkenntnis* 51: pp. 33-40.
- (2007) Animal Consciousness. In E. Zalta (ed.) *The Stanford Encyclopedia of Philosophy* <<http://www.science.uva.nl/~seop/entries/consciousness-animal/>>
- Allen, C./Bekoff, M. (1996) Intentionality, Social Play and Definition. In: Bekoff/Jamieson: pp. 229-239.
- Allen, C./Hauser, M. (1996) Concept Attribution in Nonhuman Animals: Theoretical and Methodological Problems in Ascribing Complex Mental Processes. In: Bekoff/Jamieson: pp. 47-62.
- Baker, G.P./Hacker, P.M.S. (1985) *Rules, Grammar and Necessity*. Blackwell: Oxford.
- Beckermann, A. (1999) *Analytische Einführung in die Philosophie des Geistes*. de Gruyter: Berlin & New York.
- Bekoff, M./Jamieson, D. (1991) Reflective Ethology, Applied Philosophy, and the Moral Status of Animals. *Perspectives in Ethology* 9: pp. 1-47.
- Bekoff, M./Jamieson, D. (eds.) (1996) *Readings in Animal Psychology* MIT Press: Cambridge/Mass.
- Bennett, J. (1976) *Linguistic Behavior*. Cambridge University Press: Cambridge.
- Bermúdez, J. L. (2003) *Thinking without Words*, Oxford: Oxford University Press.
- Brandom, R. (2000) *Articulating Reasons*. Cambridge/Mass.: Harvard University Press.
- (2010) Conceptual Content and Discursive Practice. *Grazer Philosophische Studien*, forthcoming.
- Byrne, R. (1995) *The Thinking Ape* Oxford University Press: Oxford.
- Carruthers, P. (1989) Brute Experience. *Journal of Philosophy* 86: pp. 258-269.
- Chater, N./Heyes, C.M. (1994) Animal Concepts: Content and Discontent. *Mind and Language* 9: pp. 209-246.
- Crisp, R. (1996) Evolution and Psychological Unity. In: Bekoff/Jamieson: pp. 309-321.
- Davidson, D. (1984) *Inquiries into Truth and Interpretation*. Oxford University Press: Oxford.

- (1985) Rational Animals. In: LePore, E./McLaughlin, B. (eds.) *Actions and Events*. Blackwell: Oxford: pp. 473-480.
- (1994) Davidson, Donald. In: Guttenplan, S. (ed.) *A Companion to the Philosophy of Mind*. Blackwell: Oxford: pp. 231-236.
- (1997) Seeing Through Language. In: Preston, J. (ed.) *Thought and Language*. Cambridge University Press: Cambridge: pp. 15-27.
- (1999) The Emergence of Thought. *Erkenntnis* **51**: pp. 7-17.
- Dennett, D. (1998) Animal Consciousness: What matters and Why? In: *Brainchildren* MIT Press: Cambridge/Mass., pp. 337-50.
- DeGrazia, D. (1996) *Taking Animals Seriously*. Cambridge University Press: Cambridge.
- Dummett, M. (1993) *Origins of Analytical Philosophy*. Duckworth: London.
- Dupré, J. (1996) The Mental Lives of Nonhuman Animals. In: Bekoff/Jamieson: pp. 323-336.
- Fisher, J.A. (1996) The Myth of Anthropomorphism. In: Bekoff/Jamieson: pp. 3-16.
- Fodor, J. (1975) *The Language of Thought*. Crowell: New York.
- Fodor, J./LePore, E. (1992) *Holism: a Shopper's Guide*. Blackwell: Oxford.
- Frege, G. (1918/19) Die Verneinung. In *Logische Untersuchungen*. Vandenhoeck & Ruprecht: Göttingen 1976 (cited according to the original pagination).
- Geach, P.T. 1957 *Mental Acts* (London: RKP).
- Glock, H.J. (1996) *A Wittgenstein Dictionary*. Blackwell: Oxford.
- (1997) Philosophy, Thought and Language. In: Preston, J. (ed.), *Thought and Language*. Cambridge University Press: Cambridge: pp. 151-169.
- (2000) Animals, Thoughts and Concepts. *Synthese* 119.
- (2003) *Quine and Davidson on Language, Thought and Reality*. Cambridge University Press: Cambridge.
- (2006a) Concepts: Representations or Abilities?, in E. Di Nucci and C. McHugh (eds.), *Content, Consciousness, and Perception: Essays in Contemporary Philosophy of Mind* (Cambridge Scholars Press, Cambridge 2006), pp. 3-30.
- (2006b) Thought, Language and Animals, in M. Kober (ed.) 'Deepening our Understanding of Wittgenstein', *Grazer Philosophische Studien* 71, pp. 139-60.
- (2009) Can animals act for Reasons?, *Inquiry*, forthcoming.
- (2010) Can animals judge?, *Grazer Philosophische Studien*, forthcoming.

- Gould, S.J. /Eldredge, N. (1977) Punctuated Equilibria: The Tempo and Mode of Evolution Reconsidered. *Paleobiology* 3: pp.115-51.
- Goodall, J. (1986) *The Chimpanzees of Gombe: Patterns of Behavior*. Harvard University Press: Cambridge/Mass.
- Harrison, P. (1991) Do Animals Feel Pain? *Philosophy* 66, ppl. 25-40.
- Hendrichs, H. (1999) Different Roots of Human Intentionality in Mammalian Mentality. *Erkenntnis* 51: pp. 145-164.
- Hurley, S. & Nudds, M. (Eds.) (2006) *Rational Animals* (Oxford: Oxford University Press).
- Jamieson, D. (1998) Animal language and thought. In Craig, E. (ed.), *The Routledge Encyclopedia of Philosophy*. Routledge: London.
- Kenny, A.J.P. (1975) *Will, Freedom and Power*. Blackwell: Oxford.
- (1989) *The Metaphysics of Mind*. Oxford University Press: Oxford.
- McDowell, J. (1996) *Mind and World* (Harvard University Press: Cambridge/Mass.).
- Morgan, C.L. (1894) *An Introduction to Comparative Psychology*. Walter Scott: London.
- Malcolm, N. (1972-3) Thoughtless Brutes. *Proceedings and Addresses of the American Philosophical Society* **46**.
- Menzel, E.W. (1974) A Group of Chimpanzees in a 1-acre Field. In: Schrier, A.M./Stollnitz, F. (eds.) *Behavior of Nonhuman Primates*. Academic Press: New York: pp. 83-153.
- Pinker, S. (1994) *The Language Instinct*. Penguin: Middlesex.
- Povinelli, D. & Vonk, J. (2006) “We don’t need a microscope to explore the chimpanzee’s mind”, in: Hurley & Nudds (Eds.), pp. 385-412.
- Price, H.H. (1953) *Thinking and Experience*. Hutchinson: London.
- Roth, G. (1999) “The neurobiological basis of consciousness in man and animals”, *Evolution and Cognition*, 5, pp. 137-148.
- Roth, G. & Dicke, U (2005) “Evolution of the brain and intelligence”, *Trends in Cognitive Science*, 9, pp. 250-257.
- Rundle, B. (1997) *Mind in Action*. Oxford University Press: Oxford.
- Savage-Rumbaugh, S. (1986) *Ape Language: From Conditioned Response to Symbol*. Oxford University Press: Oxford.
- Savage-Rumbaugh, S./Lewin, R. (1994) *Kanzi*. Doubleday: London.

- Savage-Rumbaugh, S./Shanker, S./Taylor, T. (1998) *Apes, Language and the Human Mind*. Oxford University Press: Oxford.
- Searle, J. *Animal Minds*, *Midwest Studies in Philosophy*, 19, pp. 206-219.
- (1997) *The Explanation of Cognition*. In: Preston, J. (ed.), *Thought and Language*. Cambridge University Press: Cambridge: pp. 103-126.
- Seyfarth, R./Cheney, D. (1996) *Inside the Mind of a Monkey*. In: Bekoff/Jamieson: pp. 337-343
- Sorabji, R. (1994) *Animal Minds and Human Morals*. Routledge: London.
- Stephan, A. (1999) *Are Animals Capable of Concepts?* *Erkenntnis* 51: pp. 79-92.
- Stich, S. (1979) *Do Animals Have Beliefs?* *Australasian Journal of Philosophy* 57: pp. 15-28.
- Strawson, P.F. (1992) *Analysis and Metaphysics*. Oxford University Press: Oxford.
- Tomassello, M./Call, J. (1997) *Primate Cognition*. Oxford University Press: Oxford.
- (2006) "Do chimpanzees know what others see—or only what they are looking at?", in: Hurley/Nudds (2006), pp. 371-84.
- Wittgenstein, L.: 1967, *Philosophical Investigations*, Blackwell, Oxford.