dialectica

dialectica Vol. 64, N° 1 (2010), pp. 11–33
DOI: 10.1111/j.1746-8361.2010.01227.x

Can Animals Judge?

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Abstract

This article discusses the problems which concepts pose for the attribution of thoughts to animals. It locates these problems within a range of other issues concerning animal minds (section 1), and presents a 'lingualist master argument' according to which one cannot entertain a thought without possessing its constituent concepts and cannot possess concepts without possessing language (section 2). The first premise is compelling if one accepts the building-block model of concepts as parts of wholes – propositions – and the idea that intentional verbs signify relations between subjects and such propositions. But I shall find fault with both (section 3). This opens the way for recognizing a form of 'holodoxastic' thought-ascription which does not presuppose concept-possession on the part of the subject (section 4). Section 5 defends this idea against objections. Section 6 turns to the second premise of the lingualist master argument. I press the idea of judgement into service as a label for *conceptual* thought that *need not* be linguistic and argue that the possession of concepts is an ability. Section 7 accepts that concept-possession requires the ability to classify rather than merely to discriminate, but suggests that this need not disqualify animals. In the final section I confirm this verdict by returning to the notion of judgement: classification is the deliberate and considered response to a range of options in a sorting or discrimination task. Notwithstanding appearances to the contrary, the capacity for such a response does not presuppose the linguistic ability to answer questions. Judgement is a feature of a type of problem-solving that we share with some non-linguistic creatures.

Philosophers, cognitive scientists and zoologists have reason to be interested in animal minds and in the relation between mental and linguistic capacities, that much is clear. But why raise the question of whether animals can judge? Isn't the notion of judgement frightfully antiquated?

The fact that judgements are out of fashion actually endears them to me. But that is not enough of an excuse for my title question. Instead, my rationale is threefold. Firstly, the notion of a judgement serves to preserve an important distinction. Cutting a long story short, whether a creature must possess concepts in order to perceive, believe, think or know something is far from clear; but it is clear that a creature must possess concepts in order to judge that something is the case, for that is a constitutive feature of judgements as standardly conceived by philosophers and logicians.[1] Secondly, judgements allow one to discuss the

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[1] This holds of the traditional notion of judgement, epitomized e.g. by the tri-partition of syllogistic logic into doctrines of concept, judgement and inference. It does not hold for judgements as occasionally conceived at present, namely episodes that initiate beliefs or desires in general, irrespective of whether they involve concepts.

Published by Blackwell Publishing Ltd., 9600 Garsington Road, Oxford, OX4 2DQ, UK and 350 Main Street, Malden, MA 02148, USA

connection between concept possession and linguistic capacities in a way that is less presumptuous and misleading than the dominant terminology of propositional attitudes. Thirdly, I shall argue that possession of concepts is intimately tied to the capacity to judge in the more common sense of deliberately addressing a question or problem. Finally I shall contend that this capacity is conceptually tied not to the possession of language, but instead to the capacity to solve sorting or discrimination tasks in a deliberate and controlled manner.

1. Aspects of animal mentality

Do non-human animals have minds? In dealing with this question, I shall bracket the hotly contested question of whether some animals are capable of acquiring rudimentary linguistic skills. For my wider concern is with the question of whether *mental* properties and capacities presuppose *linguistic* capacities. Accordingly, 'animal' should henceforth be understood as 'animal which is neither human nor linguistic'.

Next it is important to specify what mental phenomena and capacities are at issue. At the most general level, it is common to distinguish intentional from non-intentional mental states or processes. Brentano defined intentionality as the directedness of the mind towards a content or object. We believe that such-and-such is the case, we intend to do something, we think about or mean a particular object. Brentano maintained that intentionality rather than consciousness is the distinguishing feature of the mental. However, there are 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 (Tugendhat 1986, chs 9–10; Hacker 2001).

I shall refer to intentional states as thoughts rather than propositional attitudes, since I regard this idiom as misleading (see section 3). The article focuses on animal thought. That higher animals can have sensations and moods should be obvious; only in the case of thought are there reasons for suspecting that concepts and hence perhaps language must be in play.

At the same time, I shall be concerned not just with cognitive states, that is, states aimed at information or knowledge, but also with conative states, that is, states of intending, desiring or pursuing something. The popular term 'animal cognition' is misleading in that it seems to refer exclusively to the former, when in fact most of the current debate under that title is as much concerned with desires and intentions as it is with knowledge and belief. This is no coincidence. To deny conative states to animals is even less plausible than to deny them cognitive states (see Rundle 1997, 80). My question then is: Can animals have thoughts (beliefs, desires, intentions, etc.)? Those who answer this question in the negative I shall refer to as 'lingualists'.

2. *Concepts as an obstacle for animal thought*

Concepts seem to furnish lingualists with a formidable weapon. On the one hand, higher mental phenomena – notably what I call thought – seem to involve or presuppose the possession of concepts; on the other hand, concepts and conceptual capacities seem to be highly sophisticated features closely connected to language. More specifically, the thoughts we ascribe to animals in common parlance involve *concepts* with which the animal cannot be credited, or so it would seem.

Intentional verbs occur mainly in three sentential forms:

I	A	*V*s (thinks/believes/expects, etc.)	that *p*
II	A	*V*s (intends/plans/means, etc.)	to *Φ*
III	A	*V*s (loves/desires/thinks about, etc.)	*X*

According to an orthodoxy going back to Russell, the verbs that can replace '*V*' denote different types of *intentional attitudes*, 'A' the *subject* of these attitudes, and the substitution instances of 'that *p*', 'to *Φ*' or '*X*' their *contents*. All three forms display a hallmark of intentionality, namely that nothing in reality needs to correspond to the (grammatical) direct object: one can believe something which is not the case, intend to do something which never happens, and love someone who does not exist. *Prima facie*, (I) expresses a *propositional attitude*, (II) an *action-oriented attitude*, (III) an *object-oriented attitude*. Nonetheless it is customary to subsume all forms of intentionality under the heading 'propositional attitude'. This is no coincidence. There is a pervasive tendency to regard (I) as basic and to disregard other forms of intentionality, and this by itself gives succour to lingualists. For the term 'proposition' carries linguistic connotations.

However, I know of no compelling reduction of action- and object-oriented attitudes to proposition-oriented attitudes.[2] And in the absence of such a reduction,

[2] McDowell (1996) *may* be right to reject 'non-conceptual content', if he means to insist that every object we can identify perceptually can somehow be described conceptually. It does not follow, however, that there is a list of *propositions* which captures precisely and completely what I currently perceive – my visual field. Tugendhat (1982, ch. 6) regards the reduction of all intentional states to propositional attitudes as a distinctive trait of analytic philosophy. He defends this stance on the grounds that even those intentional states which are ostensibly directed towards objects, for example loving, pitying or admiring someone, imply propositional attitudes, attitudes the expression of which involves a that-clause. Even though Dorothea Brooke does not exist, I can admire her only if I believe that she exists. And even if I picture Dorothea Brooke to myself as a fictional character, I picture her as existing. But this argument is unconvincing. To be sure, to imagine an apple is not to imagine an apple as non-existing, but neither is it the same as to imagine that there is an apple, which is what Tugendhat needs to establish. Moreover, it is far from obvious that when I imagine Dorothea Brooke, I imagine her as existing rather than as non-existing (provided that either of these options makes sense in the first place). Kenny (1963, chs V, XI) steers a different course to a proximate destination. He maintains that sentences where 'I want' is followed by a direct object (rather than by an infinitive), as in 'I want an *X*' can often be expanded into sentences of the form 'I want to *Φ* an *X*': I want an apple – I want to eat an apple, etc. Furthermore, in reports of what he calls 'affective attitudes' the grammatical object of

it is sheer dogmatism to insist that admiring Nelson Mandela, intending to climb a tree or craving M&Ms are in the final analysis attitudes towards propositions. Of course, the *reasons* people have for admiring Mandela or intending to climb a tree can be expressed through that-clauses. But so can the reasons people have for kicking a ball, and no one would conclude that kicking a ball is therefore anything other than a relation to an object. This by itself removes an obstacle to crediting animals with intentional states. For it would be foolhardy to deny that chimpanzees can intend to climb trees or crave M&Ms, unless one is in thrall to the prejudice that such intentional states must *au fond* be attitudes towards linguistic entities.

Having noted this point, let us nevertheless focus on intentional verbs of type (I), since it is here that the obstacle posed by concepts comes out most clearly. Consider a belief ascription like:

(1) Carl thinks that the cat went up that oak tree

On the one hand, there is the *intentional verb* ('believes'), which informs us that Carl believes, rather than, for example, knows or fears that the cat went up the oak tree. On the other hand, there is a noun-clause ('that the cat went up that oak tree'), which informs us of what it is that Carl believes, the content of his belief, and is therefore known as the *content-clause*. Switching to the material mode, there is the kind of intentional state on the one hand, the kind of content on the other. These two parameters are in turn connected to an equivocation in nouns like 'belief', 'hope', 'desire', etc. 'A's belief' can refer either to *what A believes*, namely *that* the sun is out, or to *what A has*, namely the *belief* that the sun is out. What A has, the belief, can be erroneous, sensible or tentative. But what A believes – e.g. that the sun is out – i.e. the content of her belief, cannot (White 1972, 81–83).

The two parameters raise two distinct questions. One is which *intentional states* or acts can be ascribed (what intentional verbs can be applied) to animals; another question is which *contents* can be ascribed to them (which that-clauses, singular terms or infinitives can follow these intentional verbs). Concerning the first question, one might grant that a dog can know, believe or see that *p*, yet deny that it can think, judge or hope that *p*.

the attitude takes a different form depending on the verb: either a 'that' clause, or an infinitive (I hope that *p*, I want to *Φ*; I prefer to *Φ*, etc.). Nonetheless, he maintains, they could all be expressed using the construction 'A volits that *p*', since he thinks of these affective attitudes as taking an attitude to a state of affairs. Although this would leave type (III) intentionality unaffected, it would mean that type (II) cases could be reduced to type (I), and hence to something propositional. But it is far from obvious that intending to do something is tantamount to wanting a certain state of affairs to come about. It certainly doesn't amount simply to voliting that the results of the action come about. And even if statements of the form 'A wants to *Φ*' could be paraphrased by statements of the form 'A volits that *p*', it would *not* follow that the propositional construction is more basic. For the possibility of paraphrase cuts both ways, and the infinitive construction is much more readily understood than the propositional one.

The problem of concepts concerns the second question. The content-clause of (1), 'that the cat went up that oak tree', includes general terms like 'cat' and 'oak tree', which express concepts like *cat* and *oak tree*. By the same token, the propositional content denoted by the content-clause (and expressed by the indicative sentence 'the cat went up that oak tree') consists of these concepts.

Alas, this involvement of concepts casts doubt on the legitimacy of ascriptions like (1) in cases in which Carl is a dog rather than a linguistic creature, as in a famous example by Malcolm (1972–1973). For it seems that non-linguistic creatures cannot possess concepts like that of a cat or of a tree. Thus Davidson suggests that ascriptions like (1) cannot be literally correct "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, 475). And one need not be a wholesale sceptic about animal minds in order to accept that such general beliefs are beyond the ken of dogs. For lingualists like Davidson (1997, 24–25) and Dummett (1993, chs 12–13) the offshoot is that the ascription even of simple thoughts to animals is illegitimate, since they involve concepts which require general beliefs that animals cannot have. Concept-possession and the ability to have thoughts amount to one and the same thing, and both are confined to language-users. In short, what I shall call the 'lingualist master-argument' runs as follows:

P_1	Thinking requires concept-possession
P_2	Concept-possession requires language
C_1	Thinking requires language
C_2	Animals cannot think

The argument is valid, given our definition of 'animal'. But it is far from obvious that it is sound.

3. The building block model of concepts and 'propositional attitudes'

The lingualist master-argument raises two questions. 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 a 'building-block model' of propositions and concepts. According to this model what a subject believes (the content of A's belief) is a proposition or thought, a complex object of which concepts are the components; thus the thought that dogs bark is a complex object of which the concepts DOG and BARK are parts. By a similar token, what a subject has (A's state of believing) is a mental process of

accepting the whole proposition, a process of which thinking its component concepts are stages; thus to believe that dogs bark, A must first think DOG and then BARK. In summary, if A believes that *p*, then she stands in relations of grasping and accepting to an abstract entity, a proposition, of which concepts are (equally abstract) components. Consequently P_1 holds: one cannot grasp or accept the whole proposition without having or grasping its constituent concepts.[3]

One way of resisting that conclusion is to invoke the idea of 'nonconceptual content' (e.g. Cussins 1992; Peacocke 1992; Bermúdez 2003). This response accepts that intentional verbs signify attitudes towards objects of a special kind, namely contents; it parts company with lingualism by insisting that in addition to propositional contents consisting of concepts (the contents of human thinking) there are also 'proto-propositional' contents consisting of nonconceptual components, e.g., sensory representations (the contents of animal thinking and pre-reflective human perception). Unfortunately, it is unclear how such proto-propositional entities can be contents of thinking as here understood, i.e. contents signified by the noun-clauses in sentences of the form '*A V*s (perceives, believes) that *p*'. Furthermore, this rejection of P_1 creates a *congruity problem*. The distinction between different types of content 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. For 'Sarah believes that *p*' comes out as 'Sarah stands in the relation of believing to the thought that *p*' while 'The dog believes that *p*' comes out as 'The dog stands in the relation of believing to the protothought that *p*'.

These difficulties count in favour of a more radical attack on P_1. Its popularity notwithstanding, the building-block model of contents (whether conceptual or nonconceptual) is problematic. There are both empirical and conceptual qualms about the idea that entertaining a part of a thought correlates with a definite stage of a more protracted mental or neuro-physiological process – the entertaining of the whole thought. Even if these could be waived, we would only be dealing with stages of *thinking* a thought, not with stages of *thoughts*. As regards the latter, the building-block model transposes the part/whole relation from the spatial and temporal sphere to a sphere – that of abstract entities – to which ex hypothesis neither spatial nor temporal notions apply. What seems to give sense to talk of parts and wholes in the case of propositions or thoughts is the fact that the linguistic expressions of thoughts – namely sentences – have components – namely words (see Kenny 1989, 126–127). What is said or thought has genuine components to the extent to which its linguistic expressions have components

[3] Glock (2009b) criticizes an alternative version of the building-block model, according to which propositions and concepts are particulars in the heads of individuals (notably sentences or words of a language of thought), rather than abstract entities.

(these components may, for instance, be what A explains when she is called upon to explain what she means by a particular utterance).

In the wake of Quine, many philosophers regard propositions as dubious entities. They are not just abstract but intensional and hence, allegedly, lack criteria of identity. Such philosophers often replace propositions by sentences as the objects of propositional attitudes, thereby committing themselves to lingualism. I am more inclined to challenge an assumption which the orthodox view shares with Quinean extensionalists and most proponents of nonconceptual content, namely that intentional verbs signify relations to either abstract or concrete objects. The idea of propositional attitudes is problematic not just on account of 'propositional' but also on account of 'attitudes', for the idea that belief is a relation between a subject and an entity amounts to a reification.

Admittedly, noun-clauses like 'that the cat went up the oak tree' or 'what Carl believes' are grammatically speaking the objects of beliefs. But they are *intentional* rather than *object-accusatives* (White 1972).

(2) Clare Short believes Tony Blair

entails that there is an object *x* such that Short believes *x*. In (2) the psychological verb expresses a genuine relation, since here two relata must exist, one to believe, and one to be believed. By contrast,

(3) Short believes that Iraq possesses weapons of mass destruction

does not entail that there is an object *x* such that Short believes *x*. Nothing in reality need correspond to the noun-phrases of (1) and (3), since the relevant state of affairs need not exist or obtain.

A building-block theorist will dig his heels in and insist that something must exist, namely a (propositional) content which is a real object, though probably an abstract one. But this 'something' is an object only in a formal, grammatical sense; it is a projection from that-clauses rather than a genuine thing to be encountered beyond space and time or in the heads of individuals.[4] Brentano was right to insist that to believe is to believe something. (3) entails that there is something Short believes. Yet in the first instance this simply means that Short cannot believe anything unless there is an intelligible answer to the question 'What does Short believe?'. If I say 'I believe that *p*' and this still leaves you in the dark as to what precisely I believe, I can only respond with an *elaboration* of what I have said, rather than with a more accurate *designation* of an object.

[4] *Pace* Quine, the term 'something' is wider than 'object'. 'Something' is syntactically transcategorial: it can quantify into the positions of singular term, predicate, and sentence. Only in the first case is it equivalent to 'object'. For the complex relations between these expressions, as well as 'exists', 'there is' and 'real', see Glock (2003, ch. 2).

Furthermore, the wh-clause 'what Short believes', like 'what Short weighs', incorporates an interrogative rather than a relative pronoun. Thus 'Prescott knows the person Short believes' and 'The person Short believes is Blair' entails 'Prescott knows Blair'. Yet 'Prescott knows what Claire Short believes' and 'What Short believes is that Iraq possesses weapons of mass destruction' does not entail 'Prescott knows that Iraq possesses weapons of mass destruction', if only because one cannot know a falsehood. Similarly, 'Prescott knows what Short weighs' and 'Short weighs 70 kg' do not entail 'Prescott knows 70 kg', since that sentence is ungrammatical. Neither 'what Short weighs' nor 'what Short believes' signify an object to which Short is related. By the same token, believing that *p* is no more a *genuine relation* to an object than weighing *n* kilograms.

It might be objected that there are pertinent contexts in which 'what Short believes' *does* incorporate a relative pronoun. In conjunction with (3)

(4) Prescott believes what Short believes

entails

(5) Prescott believes that Iraq possesses weapons of mass destruction.

But (4) is not underwritten by our knowledge that Short and Prescott are related in the same way to an entity. Instead, it is underwritten by the fact that both share certain properties regarding a particular question, namely the question of whether Iraq possesses weapons of mass destruction. Even in this context, 'what Short believes' is an interrogative clause in a less direct sense, since its content derives from the way in which Short would or could respond to a certain question, or react in certain situations, e.g. when voting on the attack on Iraq in Parliament.

The building-block model also goes astray in assuming that the alleged object to which subjects of belief are related is a proposition.[5] Many intentional verbs cannot be characterised as expressing a relation either to a proposition or to a sentence. It makes no sense to expect, fear, hope or see a sentence or proposition, at least not the same sense as to expect, fear, hope or see that *p*. And given that what I can expect or see is what you can believe, this difficulty may be contagious. That is to say, it may show that even though it makes sense to believe the proposition that *p*, believing that *p* is not the same as believing the *proposition* that *p*.

One might respond that in its philosophical usage, 'proposition' is a term of art which is exempted from the vagaries of English that rule out locutions like

[5] For an elaboration of some of the following points see Rundle (2001). Vendler (1972, ch. V) used similar logico-grammatical considerations; yet he failed to take account of the inappropriateness of (6) and reached the conclusion that whereas what is known is never a proposition, what is believed always is. On that basis Marcus (forthcoming) argues that animals can know but not believe that *p*.

(6) A fears/expects/hopes/sees the proposition that *p*.

But this invites the challenge to explain what precisely that technical term means. And because of the illicitness of (6) that challenge cannot be met by stipulating that propositions are simply what we believe, expect, hope, etc.

On the other hand, the denial that what we believe is *always* a proposition seems to imply that in cases in which we *do* believe the proposition that *p*, we have two beliefs, a belief that *p* and a belief in the proposition that *p*. This objection can be fended off as follows. To say that A believes the proposition that *p* is not to ascribe to her a belief in addition to her belief that *p*. Rather, it is to place her belief that *p* in a certain context. Believing that *p* is simply a matter of *believing something to be so*, whereas believing the proposition that *p* is a matter of *believing something to be true*. In the case of simply believing that *p*, the focus is on how things are or might be; in the case of believing a proposition that *p* it is on how they have or might be stated or believed to be. The latter construction is appropriate if something has been stated to be so or if such a statement is at least 'in the air', with that statement then being up for consideration regarding its truth.

4. Introducing holodoxastic thought-ascriptions

These observations serve to avoid a potential *petitio* against the possibility of animal thought which is easily smuggled in through the idiom of propositional attitudes. The term 'proposition' is closely related to 'sentence', even to the ears of philosophers. It also suggests a claim or statement that is being proposed or advanced for consideration. An attitude towards a proposition therefore seems to require an understanding of something proposed, claimed or stated, a requirement that animals cannot meet. It has transpired, however, that one can believe that something is the case without believing a proposition to be true.

We have also found reasons to doubt that in the relevant contexts that- and what-clauses refer to genuine objects and that believing that p is a genuine relation in which a subject stands to such objects. This puts us in a position to reject the most popular rationale for P_1 of the lingualist master-argument, namely that thinking requires concept possession because concepts are the building blocks of thoughts. The building-block model according to which small abstract objects – concepts – combine to form large abstract objects – propositions – is not a truism but a dubious metaphor. Ironically, in different contexts even some lingualists acknowledge that the building-block model is problematic. Thus Davidson rejects the idea that beliefs are relations between a subject and an abstract or mental phenomenon, and regards them simply as "modifications of a person" (1992, 232). For related reasons, his approach to human belief is 'holophrastic': we ascribe beliefs to linguistic creatures on the basis of their assenting to sentences as a whole (1984, 4, 22, 220–225; 1997, 25).

The possibility Davidson 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. 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 do not presuppose 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 behaviour, postures and facial expressions which higher animals share with human beings.[6]

Admittedly, the atomistic building-block model is a sufficient rather than a necessary condition for holding that thought requires concepts. Allegiance to the lingualist assumption P_1 can also be 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. I am sympathetic to the inferentialist project, in so far as it explains concepts and propositions by reference to practices and abilities. But whatever its merits, inferentialism does not preclude my holodoxastic approach. 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 precisely that believing something is simply a modification of a subject. In that case inferentialism provides succour to P_1 only on the assumption that the relevant modification requires the subject to be capable of grasping logical and conceptual implications. And that claim is controversial, since it makes a simple mental phenomenon, such as having beliefs, dependent on the capacity for reasoning, i.e. on rationality (see Glock 2003, 281-286; Hurley 2006; Bermúdez 2003).

If the holodoxastic approach is legitimate, P_1 is not just unsubstantiated but false. To appreciate this, let us return to Malcolm's example. When we say

(7) The dog thinks that the cat went up that oak tree

we do not do so on the grounds that he picks out objects and classifies them in a way that corresponds to the singular and general terms we use in the attribution. Rather, we simply note the dog's reaction to his environment. In Malcolm's example, the dog is chasing the neighbour's cat, which runs towards the oak tree,

[6] In (2003, ch. 9) I criticize arguments against animal thought by Davidson that do not revolve directly around the lingualist master-argument, notably the claim that having a belief requires having the concept of a belief.

but suddenly swerves and disappears up a nearby maple. The dog nonetheless heads for the oak tree, rears up on his hind feet, paws at the trunk, and barks excitedly into the branches above.

Although ascriptions like (7) are holodoxastic in the first instance, we can regard these reactions as directed towards particular objects, creatures and events, for we can assume that dogs have certain perceptual capacities and wants, since we possess at least rudimentary knowledge of the way dogs live (what they can recognize, what they tend to dislike, etc.). Dogs tend to behave aggressively towards cats, especially within their home territory; they can follow the movement of cats, but may lose track of rapid changes of direction; they bark at things that they dislike or which disquiet them, etc. Because of its reliance on behavioural reactions, holodoxastic thought-ascription is confined to simple beliefs, notably about perceptible features of the subject's environment. But that suffices to blunt the force of the line 'No thinking without concepts!', that is, of P_1 of the lingualist master argument.

What is more, we have a positive reason to reject P_1, and hence 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 factive verb; or it implies merely *believing* that *p*, if it is not.[7] In either event, it amounts to a case of thinking that *p* as defined above. Accordingly, since animals can perceive that *p*, P_1 is mistaken.

Lingualists will contest the idea that seeing is believing, but on what grounds? The most attractive option for them is to argue as follows. Animal perception is confined to perceiving *X*, i.e. to perceiving objects or events; it does not include perceiving that *p*.[8] This would mean that they are capable only of type III intentionality, not of type I intentionality or thought. But this response is implausible. The perceptually informed reaction of higher animals to their environment can only be explained by a capacity to perceive that *p*. For instance, the dog sees a bone on the table, but it has been trained not to grab anything on the table and hence simply looks on panting. Yet as soon as the bone is placed on the floor, the dog grabs it. This sequence of events is not explained by the dog simply seeing a bone, a table or the floor, but only by its seeing first *that* the bone is on the table and then that it is on the floor. One might maintain that the problem vanishes if spatial relations like *x being on y* are among the objects that the dog can perceive. However, simply perceiving three distinct objects – bone, table, *x being on y* – does not explain the dog's behaviour. Such an explanation is only in the offing if the dog can also perceive *that* the bone stands in the relation of *being on* to the table at one

[7] 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*.

[8] Thus Dretske (e.g. 2004) distinguishes between 'seeing things' and 'seeing facts', maintaining that only the latter is conceptual.

moment, to the floor at the next. And in that case we are back with perceiving that *p*. Nor can the lingualist defuse the argument by insisting that the dog simply perceives (sees, smells, etc.) *the bone on the table* or *the bone on the floor*. For either the apposition 'on the table' is used restrictively to identify what bone it sees. Then the dog 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.

5. Defending holodoxastic thought-ascriptions

According to the argument of the preceding section, holodoxastic belief-ascription is not just an established feature of our intentional vocabulary, but one which is forced on us by the fact of animal perception. Nevertheless, the ideas of holodoxastic belief-ascription may invite suspicion. Let me consider three objections.

The first is that in the case of holodoxastic ascriptions, there is no that-clause which captures the content of thought. For whether or not concepts are literal building blocks, it is by imputing concepts that we determine the content of thoughts. Without the possibility of verbal responses we cannot make the fine distinctions between the different contents through which beliefs and desires are individuated. More specifically, 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 dog barks at 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 the 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, 163).

One response to this failure of intensionality is to hold that in (7) the expression 'that oak tree' occurs transparently (in Quine's terminology). Accordingly, (7) is paraphrased so as to avoid problems of intensionality, e.g. as

(7′) The dog thinks, with respect to that oak tree, that the cat went up it.

Davidson retorts that even such a *de re* description must pick out an object "the believer could somehow pick out. In a popular if misleading idiom, the dog must

believe, under some description of the tree, that the cat went up that tree. But what kind of description would suit the dog? For example, can the dog believe of an object that it is a tree?" (1985, 474–475).

But why should Malcolm's dog have to believe of an object that *it is a tree* in order to believe of an object that *the cat went up it*? What is correct is that we require a description which 'would suit' the dog in the sense that 'it picks out an object the believer could somehow pick out'. If the dog could not distinguish the oak tree from other objects (e.g. the maple tree or the garden fence), we might still causally explain his behaviour 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 (7′) 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 believer must be capable of distinguishing from other things.

Without entering into debates about the feasibility of pure demonstrative thought, let us grant to the lingualist the following, at least for the sake of argument: if the dog is to be capable of picking out, and hence to have beliefs about, a *particular object* like the oak, it must do so on account of that object being of a certain *general kind* and must hence be capable of distinguishing things of that kind from others. Still, there is no need for the dog to distinguish this object from other potential refuges of the cat on account of it *being a tree*. In any event, moreover, the capacity to distinguish trees in general from objects of other kinds requires no more than *discrimination*. And discriminatory capacities do not presuppose the possession of either concepts or language (see section 7).

A second problem concerning *de re* reformulations is more serious. (7′) defuses the potential threat posed by the concept *oak tree*. But what about the concept *cat*? One might try to take the reformulation one step further:

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

And one might be tempted to tackle the last stumbling block by

(7#) 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.

At this juncture, the strategy of *de re* paraphrase has fallen into a lingualist trap. 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 *de re* thought-ascription must end in a noun-clause which involves *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 in the content-clause we can provide a paraphrase which makes clear what object, event, etc. the subject

is entertaining a belief about – without imputing the concepts by which we might identify that object. As regards the verb-phrase, this option is at any rate less attractive. I shall contend in a moment, however, 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. And nothing prevents us from using *de dicto* a verb that expresses an activity which the dog can distinguish from other activities.

The final objection to holodoxastic thought-ascription is that even without a reification of contents, the congruity problem once more raises its head. 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, behavioural 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.

But we can grant that there are important differences between the beliefs of conceptual and non-conceptual creatures, while resisting the pressure towards postulating *either* distinct objects *or* distinct attitudes. A certain disparity between the terms used in a belief report and those that would or could be used by the subject is present even in the linguistic case, without constituting a fundamental incongruity. It is quite generally the case that the terms which occur in the content-clause are dictated not so much by the creature whose belief we report, but by the concerns of speaker and audience. We can sometimes report A's belief in terms that run counter to those A would accept herself. The limits of substitution within the content clause are not set by an entity – a proposition or proto-proposition to which A is related – but vary according to the communicative situation. Thus we say things like

(8) She thinks that the old fool is adorable

without presupposing that the subject would assent to the statement 'The old fool is adorable'. This also goes for content-clauses that the subject could not use. Note the acceptability of (1) in the case of dogs and humans alike. Similarly,

(9) Sarah thinks that the old fool will give her a biscuit

can be in order, whether Sarah is an adult, a child that lacks the concept of a fool, or a dog.[9] Our content-clauses do not commit us to imputing to the subject the corresponding concepts. Admittedly, to have an occurrent thought that *p*, A needs to be able to *distinguish* the objects and activities mentioned in *p* – but not necessarily through the concepts *we* use in our ascriptions. Thus Sarah needs to be able to distinguish giving from taking and a biscuit from, e.g., a knife or a dog comb. Yet this is something dogs are capable of, on account of their discriminatory abilities.

Far from being compelling, the lingualist master-argument now faces a dilemma. *Either* discriminatory capacities suffice for concepts; in which case P_2 is wrong, since animals have many concepts (just not ours). *Or* discriminatory capacities do not suffice for concepts; but then P_1 is wrong, since we can (and indeed must) ascribe thinking, and in particular perceptual beliefs, without imputing concepts. Still, the question whether animals can possess concepts remains relevant, for two reasons. When it comes to attributing beliefs to animals, some content clauses disregard the subject more obviously than others. This suggests that higher animals can be credited with some concepts but not others. Furthermore, if some animals have conceptual capacities, the lingualist master-argument would fail even if beliefs were tied to concepts. Finally, there is a strong case for holding that *some* intentional verbs presuppose conceptual abilities.

6. Judgements, concepts and abilities

To pursue these issues without prejudging the question of whether conceptual abilities in turn require language, I avail myself of the notion of a judgement. Judgements are hardly the flavour of the month, philosophically speaking. One misgiving that the notion standardly provokes is that it 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 thought.

The notion of judgement, by contrast, does not beg any questions either for or against lingualism. Judgements are traditionally treated as mental analogues of

[9] Usually the Fregean prejudice that intensionality is a ubiquitous feature of thought attributions is attacked exclusively from the equally dogmatic perspective of direct reference theories. For objections that are based on observing our actual employment of intentional verbs see Kenny (1975, 51), Rundle (1997, 83), Wettstein (2004, chs 8–9).

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, who treats the understanding as the capacity to employ concepts in judgements. 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, section 4).

One fly in the ointment. For Geach (Ib., 9) and in ordinary parlance, judgements are episodic mental acts. Yet 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 in the last section. 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 an infinitive of the kind involved in type II and type III intentionality);
b. they need not be expressed linguistically (by contrast to assertions);
c. they *ipso facto* involve concepts (by contrast to holodoxastic beliefs).

With respect to animal concepts and judgements, one finds a spectrum of opinion. Kant, Frege, Davidson and Dummett occupy the lingualist corner. According to them, animals can perceive, but lack concepts of *any* kind and hence cannot judge. In the other corner are empiricists and many cognitivise scientists, who have no qualms about ascribing complex concepts to animals. An intermediate position maintains that animals can possess some concepts, namely those that can be manifested in non-linguistic behaviour (Kenny 1989, 36–37; DeGrazia 1996, 154–156).

Proponents of this position have to concede that the concepts animals possess are rarely the ones we use in ascribing thoughts to them. The discriminations which underlie animal behaviour need not coincide with our verbal classifications either extensionally or intensionally. 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 animals concepts that *differ* from ours. For instance, 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, 257). Accordingly, what kind of concepts we should ascribe depends on the parameters governing animal behaviour.

Strictly speaking, one can decide whether animals can possess concepts only on the basis of having clarified what concepts are; whether they are, for instance,

representations in the heads of individuals, Fregean senses, rules or abilities. Fortunately, in the current context we do not need to provide a water-tight and univocal definition of concepts.[10] Our concern is with P_2 of the lingualist master-argument, which concerns the preconditions for *possessing* concepts. And the possession of a concept can be equated with possessing an ability, capacity or disposition. Concept-possession must belong to the category of a potentiality. For unlike concept-exercise, concept-possession is enduring or static rather than episodic or occurrent. A subject can possess a concept at time *t* without exercising the concept at *t*. At the same time, concept-possession manifests itself in certain episodes, in the employment of concepts, notably in judgement or inference.

7. Discrimination vs. classification

But with what capacity can concept-possession be identified? One popular answer is: the capacity to recognize or discriminate different types of things (Price 1953, 355; Dupré 1996, 331). This construal is *prima facie* plausible. It certainly implies that animals can possess concepts. As mentioned above, both in the wild and in the laboratory, animals distinguish between a host of different colours, tastes, sounds, shapes, stuffs, quantities, types of creatures, etc. Moreover, many of these capacities are learned rather than innate (e.g. Tomasello and Call 1997, chs 4-5; Herman 2006; Pepperberg 2006).

However, lingualists like Geach (1957, 16–17) and Davidson (1997, 25) have protested that identifying concept-possession with discriminatory capacities falls prey to a *reductio ad absurdum*. For it would mean that the discriminatory capacities of earthworms or butterflies evince the possession of concepts. Even proponents of animal concepts have come to accept the conclusion that conceptualization requires more than discrimination (e.g., Allen 1999; Stephan 1999). But there is disagreement on what more is needed. One noteworthy proposal is that of Allen and Hauser. They distinguish between 'recognizing an *F*' and 'recognizing something *as* an *F* or recognizing it to be an *F*'. The former is merely the 'extensional characterization of a discriminatory ability', while the latter requires the ability to recognize an *F* 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 *F*s (1996, 51). This would explain why a subject that can recognize e.g. a carburettor only by its shape does not possess the concept of a carburettor.

But an appeal to discrimination can also guarantee this result. For such a subject will lack the ability to discriminate between carburettors and things shaped

[10] For a discussion of the nature of concepts and the relation of that issue to the nature of concept-possession see Glock (2010).

like carburettors or between non-carburettors and carburettors of a novel design. Furthermore, we do not normally employ 'recognizing an *F*' extensionally: one can recognize a flash of lightning without recognizing a certain type of electric discharge. Ordinary parlance does not distinguish between merely recognizing an *F* and recognizing something as an *F*. And it remains unclear what precisely the mere recognition Allen and Hauser have in mind amounts to. Finally, their account of the more demanding *recognition as* that suffices for concept possession rules out the possibility of drawing two important distinctions: firstly, between perceptual and more abstract concepts; secondly, between having more or less rich concepts of an *F*. Thus it implies that before the advent of instruments to measure the length of electromagnetic waves, humans had no colour concepts, because they could recognize colours in only one way – by looking – and one, moreover, which is purely perceptual. I find it even less plausible to suppose that one has the concept of an *F* only if one distinguishes *F*s by those features which we regard as essential to *F*s.

What is correct is that for creatures that are capable of distinguishing between essential and accidental properties, what concept of an *F* they possess is determined by what properties they regard as essential to being an *F*. Now, the distinction between essential and accidental properties is beyond the grasp of animals. But this should not count against their having concepts. After all, empiricists like Quine profess *not* to understand the difference between the essential and the accidental properties of things. And who am I to doubt their sincerity? Distinguishing essential from accidental properties is, in my opinion, crucial to a proper *understanding* of concepts, but it cannot be crucial to their *possession*.

A second approach follows Davidson (1997, 24–25) in holding that conceptual classification goes beyond discrimination through its *normative* dimension. To be capable of classifying things, a creature A must not just have a disposition to respond differently to *F*s and non-*F*s. A must also be capable, for instance, of recognizing and correcting mistakes. But there is no compelling reason why the capacity for such normative behaviour should be the prerogative of linguistic creatures. What is clear is that only intentional discriminations can be corrected in the relevant sense, because only *intentional* behaviour can be accused of committing a mistake in the relevant sense, a mistake by the subject's own standards. It is far from clear, however, why non-linguistic behaviour cannot be intentional (Glock 2009a). Moreover, there is positive evidence that higher animals can correct their choices in sorting tasks (Allen 1999, 38). *Classification* is subject to normative assessment, *such assessment* applies only to intentional behaviour, and *intentional* behaviour must be supple and plastic. But although lingualists have pronounced that the behaviour of animals is inexorably dictated by immediate biological stimuli and imperatives (e.g. McDowell 1996, 115), they have failed to explain why this should follow *a priori* from their lack of language. Indeed,

empirical studies reveal that non-linguistic animal behaviour – discriminatory behaviour included – can be astonishingly complex and flexible (e.g., Tomasello and Call 1997, 7–12; Dupré 1996; White 2007, 85–91). On this view, non-linguistic concept possession *may* be the prerogative of infants, great apes and dolphins. Nonetheless, concept possession depends not on language possession, but on discriminatory behaviour that is sufficiently complex and flexible to be guided by normative standards. Accordingly, P_2 of the lingualist master-argument is mistaken.

8. Judgement as deliberate discrimination

At this juncture I want to explore an alternative (though not necessarily incompatible) response to P_2, one which defends the attribution of concepts to animals without direct reference to normativity.

In this context I appeal to the idea of judgement one last time. In a straightforward perceptual judgement, we do not consider normative standards even in *foro interno*. Our eye tends to be on material reality rather than our own intentions or rules. What such judgement presupposes is not the *consultation of norms*, 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, or potential prey rather than a potential threat. Note that this proposal does not entail a problematic form of voluntarism about belief. To maintain that judging means choosing between different options is not to maintain that judgements are subject to the will, for *deciding that things are thus-and-so* (that *x* is *F* rather than not *F*) is not *deciding to do something*, to perform a mental act that one might refrain from. It is simply to make up one's mind concerning how things are.

The link between concepts and judgements provides a way of spelling out the distinction between *mere perceptual discrimination* and *conceptual classification* that was introduced in the previous section.

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 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 sorting or 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. In short,

A classifies things into *F* and *G* (*F* and not-*F*):= *A* considers and decides whether *x* is *F* rather than *G* (*F* rather than non-*F*).

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 (1918–1919, 143). 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 in a flexible manner on which options to pursue. And some of them can do this in a way which is deliberate not just in the sense of being controlled, but also in the sense of being close to humans as regards behavioural and facial manifestation.

Thus chimpanzees can clearly respond to and ponder a sorting or discrimination problem, for instance when they chose an instrument for performing a certain task. 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 it judges its prey to be of one kind rather than another, and similarly for its tools. As regards context (problem solving), demeanour (e.g. head scratching) and result (problem solution), the problem solving behaviour of chimpanzees resembles that of human beings. They interrupt an activity, examine an obstacle, pursue a certain solution, discard one type of tool in favour of another, resume their activity. All of this is accompanied by gestures and grimaces displaying hesitation, displeasure, satisfaction, etc.

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 descriptions inevitable, even in the absence of vocalization. In short, judgement arises out of a capacity for deliberate discrimination in the context of problem-solving, a capacity that we share with some animals that are highly sophisticated without possessing language.[11]

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.

[11] A passage from Frege's *Nachlass* allows for this possibility, since it treats judgement as a "choice between opposites" (1969, 201), without specifying that this choice should be a response to a question.

But this would be wrong: to consider options in a discrimination task requires perceptual capacities 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, provided that the latter is sufficiently complex and plastic.

Finally, the fly in the ointment mentioned in section 6. My discussion was confined to judgements in the ordinary sense, to mental acts which are episodic and explicit. By contrast, judgement in the technical sense of thoughts involving conceptual capacities includes dispositional beliefs. Fortunately, however, there is no irresolvable conflict here. Dispositional judgement is the prerogative of creatures *capable* of episodic judgement.

Still, there remains a potential difficulty concerning certain judgements in my technical sense that do not qualify as judgements in the ordinary sense. Consider non-empirical thoughts like 'Everything is identical with itself', and automatic empirical discriminations like that of the expert chicken sexer. Neither of them seems to involve a deliberate choice between different options: in the former case because there do not seem to be different options, in the latter because the choice is not deliberate. However, if the chicken sexer were incapable of considering the question 'Male or female?' in a deliberate and explicit way under appropriate circumstances, then there is no reason for granting that she is engaged in conceptual classification rather than mere discrimination. And if considering the question of whether a thing might not be identical with itself makes no sense whatever, then the question of whether we are dealing with a genuine conceptual thought raises its head.

But even if these cases implied that deliberate choice between different options is not a necessary condition for judgement in the technical sense, they would not vitiate my argument for the conceivability of animal judgement. Judgements in the technical sense *comprise* those in the ordinary sense. And since deliberate choice in a discrimination task is *sufficient* for the latter, it is also sufficient for the former, whether or not it is necessary. Therefore the argument still stands: animals capable of deliberate discrimination are also capable of judgement and hence possess concepts.

In conclusion, the distinction between discrimination and classification does not provide a case for denying that animals can judge or possess concepts. Moreover, even if it did, animals might yet possess thoughts, because of the possibility of holodoxastic belief of a perceptual kind. Lingualists are right to insist that "concept-formation is not a way station between mere dispositions . . . and judgements" (Davidson 1997, 25). Concepts and judgements remain on a par. But there is no reason to suppose that either concept-possession or judgement require *linguistic* judgement, or that holodoxastic belief cannot be a way station between

mere dispositions and judgement involving concepts. The lingualist master-argument fails, since both of its premises are mistaken.*

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* For comments and suggestions I would like to thank David Dolby, Max Hocutt, Javier Kalhat, David Lüthi, Julia Langkau and three anonymous referees. I am also indebted to audiences at Reading, Zurich and Basel, in particular to my co-symposiasts at the First Zurich Workshop on Concepts and at the Workshop on Perception and Life in Basel, and to participants in my graduate colloquium.

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