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What is distinctive about human thought?

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It is one thing to give an inaugural lecture, but quite another thing to give an inaugural lecture as the occupant of a chair as distinguished as the Knightbridge professorship in the University of Cambridge. The Knightbridge chair belongs among the oldest established chairs in the University, and it is a honour and a privilege to occupy it.

John Knightbridge, a fellow of Peterhouse and vicar of Spofforth in Yorkshire, died in 1677, leaving in his Will the instruction that a ‘Professor of Moral Theology and Casuisticall Divinity’ be paid the annual sum of fifty pounds to read five lectures in the University every term. Knightbridge specified that the Professor be ‘the age of fifty yeares’; but because it was impossible to find someone of that age, and because Knightbridge’s will was initially considered invalid, the first Knightbridge Professor, Thomas Smoult, was appointed in 1682, five years after Knightbridge died.

Knightbridge left his legacy to the Master and Fellows of Peterhouse, so it is particularly satisfying for me to return the Knightbridge professorship to the college where I studied in the 1980s, since it was (so cruelly) taken away from the College in 1838. Unfortunately, however, it is hard to see the parade of 18th century Knightbridge Professors from Peterhouse as bringing the college lasting glory – painful as it is to admit this. Some, like Edmund Law, made contributions to the theological debates of their day. Law was also Master of Peterhouse, and the decision over who should succeed him in 1787 led to one of the more notorious periods in the College’s history.

The Fellows' choice as Law's successor was the Knightbridge Professor, George Borlase (described by a contemporary as 'close, dark and reserved' – attributes well represented in this portrait by George Romney). But in order to prevent the Bishop of Ely appointing someone they did not want, they presented the Bishop with only two choices: Borlase and Francis Barnes, a fellow of Trinity. Barnes has been described as little qualified 'for the discharge of any duty which required the exercise of high notions of morality and a careful regard to what is just, decent and venerable'.¹ He has also been described as the last man in Cambridge to wear a wig (but from personal experience, I find that rather hard to believe). The Fellows assumed that the Bishop would never choose Barnes; but they were wrong and Barnes reigned over Peterhouse for fifty years. It is said that the Bursar of the College, Francis Dawes, committed suicide because he felt so responsible for this bungled decision.

Barnes was elected Knightbridge Professor by taking advantage of a clause in Knightbridge's will: that 'if it should happen that there should be discord in the election, that is to say two for one and two for another, then the Master of Peterhouse shall have the casting voice'. Barnes was one of the electors to the chair, in his role as Vice-Chancellor of the University. He was also one of the electors as Master of Peterhouse. He was also a candidate. The other two electors were opposed to him, so there was a tie, since Barnes had two votes. Barnes used his casting vote as Master of Peterhouse to elect himself to the post, which he held for twenty-five years.

Even by the standards of corrupt and drunken 18th century Cambridge, this was a pretty dismal state of affairs. The shadow of the disagreeable Barnes has lingered in the College. Soon after I arrived one somewhat elderly fellow greeted me

¹ British History Online

by saying ‘so you are the Knightbridge Professor! But that is hilarious!’ ‘Why?’ ‘Well, because of *Francis Barnes* of course’. Obviously I was meant to know the story.

So I’m somewhat sorry to have to admit that it was only after the professorship left Peterhouse that it was occupied by philosophers of lasting distinction. William Whewell was a Fellow of Trinity College, and his work on induction is still studied today. He was once described to me as the last person who was capable of having a synoptic and encyclopedic knowledge of the science of his day. (He is also apparently the inventor of the word ‘scientist’.) One of the most distinguished occupants of the chair was Henry Sidgwick, and he was followed in the twentieth century by a series of influential thinkers, including C.D. Broad, Richard Braithwaite and Bernard Williams. Putting these together with my three eminent *living* predecessors Timothy Smiley, Edward Craig and Quassim Cassam, the phrase ‘a hard act to follow’ looks something of an understatement. That said, I turn to my question for this evening.

There is a tendency today to see philosophy as a ‘technical’ subject in the sense that it requires very specialized knowledge or a specific technique or method (like engineering or chemistry). It is true that philosophy is sometimes intricate, and it sometimes needs its own vocabulary or logical machinery; and always, it must be disciplined. But it remains the case that many of the questions with which we are concerned arise out of tensions, puzzles, mysteries and paradoxes in our thinking which are as simple to understand as they seem impossible to solve.

So it is, I think, with the question which is my concern tonight. What is the difference between human thought and the thoughts of other animals? The puzzle or mystery here is not hard to grasp. On the one hand, we believe that animals do have some kind of inner life or mental life. There is something it is like to be a dog, or a chimp, or a bat. But when we reflect on what this might be like, we draw a blank. It seems utterly mysterious to us.

It's not that we have no idea what animals are doing when they seem to do things purposively. And it's not that we have no idea *why* they are doing what they are doing. It's just that we can't envisage or describe to ourselves or otherwise imagine what it is like for them. The cartoonist Gary Larson, whose works are full of philosophical insight, made fun of our predicament in these famous cartoons.² There's what we say to dogs; and there's what they hear. There's what we say to cats; and what they hear. Or maybe the inner lives of dogs are much more like ours than we think.

Of course, the joke here is that we know they are not – as Rai Gaita once put it, we can conceive of a dog making a mistake, but we it doesn't make much sense that a dog might make a mess of its life ('at that point, Fido made a couple of bad decisions and everything started going downhill...'). But why are we so sure of these things? And if we are so sure – which I think we should be – how should we describe the differences between the ways humans and animals think?

I was fortunate in preparing for this lecture in being helped by Jenni Lecky Thompson, who provided these very nice photos. This one is familiar. This one may be less so, as may this. Why do we find these funny, and Rodin's original not? The image of Rodin's *Thinker* may be a cliché – it occurs on the website of almost every

² For the slides for this lecture, visit www.timcrane.com

university philosophy department. But it is not funny, like this one is. Why? It's partly because of the uncanny mixture of familiarity and strangeness which we encounter when observing apes – the kind of thing that makes a gorilla in a zoo resemble nothing more than a man in a gorilla suit. But surely it's also because the idea of an ape or a monkey speculating is slightly absurd. This is the line of thought I would like to explore this evening.

It might be thought that my question – what is distinctive of human thought? – is one which can only be solved by scientific inquiry. In what I am going to say in a moment, I will certainly appeal to scientific evidence, but it is worth pausing to consider the idea that we can only consult science here. How exactly should we proceed, as scientists? By scanning the brains of apes and humans? By staring at the few percent of the DNA which we do not share with chimps? The problem is that we have no idea what we are looking for. This, I think, is why we need the relatively abstract level of speculation which is characteristic of philosophy.

Philosophy, I believe, is not science, though it is (among other things) a search for the truth about its various subject-matters. And one thing that distinguishes philosophy from science is that the views of the philosophers of the past can still be relevant to us. This can be either because we should take care to avoid their errors, or because we need to get a sufficient distance from our own assumptions, or because we want to avoid reinventing the wheel, or for some other reason. But in this connection I'd like to endorse a remark by one of the more under-rated Knightbridge Professors, C.D. Broad:

It appears to me that the best preparation for original work on any philosophic problem is to study the solutions which have been proposed for it by men of genius whose views differ from each other as much as possible. The clash of their opinions may strike a light which will enable us to avoid the mistakes

into which they have fallen; and by noticing the strong and weak points of each theory we may discover the direction in which further progress can be made.³

So let's proceed by taking Broad's advice, then, and asking what some of the philosophers of genius have said that is relevant to our question.

Aristotle begins his metaphysics with the famous sentence, 'All men by nature desire to know'. He goes on to say that 'an indication of this is the delight we take in our senses, for even apart from their usefulness they are loved for themselves'.⁴ He then contrasts the way other animals 'live by appearances and memories' but 'the human race lives by art and reasoning'. Knowledge and understanding 'belong to art rather than to experience', because art, not experience, teaches you the 'why' of things. I agree with Jonathan Lear that when Aristotle says that by nature we desire to know, he was referring to the desire to know for its own sake.⁵ Lear argues that the urge to philosophise arises out of such a desire: 'For Aristotle, philosophy begins with questions and puzzles. We are led to the pursuit of explanations for their own sake both by our natural makeup – the desire to know – and because it is part of our nature to find the world puzzling'.⁶

This, then, will be the aim of my lecture: to defend Aristotle's view that it is in our nature to seek knowledge for its own sake.

What is knowledge for its own sake? We can draw a distinction between a piece of knowledge being valuable because of some further purpose or good it might

³ C.D. Broad, *Five Types of Ethical Theory* (1930)1-2

⁴ Aristotle, *Metaphysics*, Book 1, part I

⁵ Jonathan Lear, *Aristotle: the Desire to Understand* (1988) 1-3.

⁶ Jonathan Lear, *Aristotle: the Desire to Understand* (1988) 5.

serve, and a piece of knowledge being something which is an end in itself. Similarly, we draw a distinction between something's having value because it is a means to a further end, and something which is valuable because it is an end in itself. Some things must be ends in themselves, if anything is to be of value at all; and what applies to value here also applies to knowledge.

Consider someone who is interested in learning about the stars. We could distinguish someone's having a purely instrumental interest in the stars – for example to aid navigation at sea. And perhaps this is where our interest in the stars comes from. But on the face of it this kind of interest in the stars is different from the interest of someone who simply wants to know about the constellation of Orion, pictured here, or who wants to know how far away the stars are, or which stars are brighter. This kind of knowledge is not put at the service of any practical project, but is simply something that is pursued for its own sake.

There is a way of trivializing the distinction between instrumental knowledge and knowledge for its own sake. This would be to say that even in the case where someone simply wants to look at the skies, their knowledge is instrumental because its role is to satisfy the desires of the agent. Any agent who wants to know something has some desires – notably the desire to know these things – and these desires would be satisfied by the achievement of knowledge. Since the search for knowledge is always driven by the desire – as perhaps all searches are, if Aristotle is right that 'thought by itself moves nothing' – then this knowledge would be instrumental too, in the sense that its role is to satisfy the desire for knowledge.

We can grudgingly agree that all knowledge is instrumental in this anodyne sense. But if we insist that this is the only sense in which all knowledge is instrumental, then we will miss the distinction which (I claim) is crucial for

understanding human thought. The distinction we need is between knowledge which is pursued because of the desire for knowledge on that subject-matter as such, and knowledge which is pursued because it will help some aim or purpose *distinct* from the desire to know.

Some philosophical accounts of thought treat all thought as instrumental. Thinking about the world must be explained in terms of the satisfaction of needs, urges and desires. An extreme example is evolutionary psychology, which looks for explanations of human cognitive capacities as adaptations, that is as developments across generations of those traits which have enhanced the 'fitness' of organisms. For the moment I would like to look more closely at one *philosophical* attempt to ground all thought on the satisfaction of desire.

In a famous paper, F.P. Ramsey described a view he called 'pragmatism': that beliefs could be characterized by their effects in action. The idea (later to be called 'functionalism') is that because what we do is fixed in part by what we believe and what we want, we should attempt to understand believing and wanting as dispositions to act in certain ways.

Ramsey went further, and attempted to define what it is to believe one thing rather than another in terms of the actions they would give rise to in certain circumstances. He illustrated this with the simple case of a chicken: 'We can say that a chicken believes a certain sort of caterpillar to be poisonous, and mean by that merely that it abstains from eating such caterpillars on account of unpleasant experiences connected with them'. Generalising from this, he defines a belief in terms of the actions it would cause, and the 'content' of a belief (labeled with the letter 'p') in terms of its utility: 'any set of actions for whose utility p is a necessary and

sufficient condition might be called a belief that p , and so would be true if p , i.e. if they were useful'.⁷

Ramsey's view that beliefs should be understood in terms of their utility is a version of the view that all thought is instrumental. Jamie Whyte labeled this view 'success semantics', and it has been defended by a number of philosophers, including Hugh Mellor here in Cambridge. Beliefs are often said to be distinguished by their 'truth-conditions': the conditions under which they are true. So for example, my belief that the sun is shining is the belief it is because the belief is true in just those conditions in which the sun is shining. Success semantics says that the *truth-*conditions of a belief are its *success* conditions: the conditions under which actions based on it would succeed, where success is understood as the satisfaction of wants or desires. So, if what I want is to walk to Granchester but I only want to do it if the sun is shining, then my desire and my belief will cause me to attempt to achieve that. The conditions under which the belief is true are the conditions under which actions based on it succeed. It follows that belief (and therefore thought in my sense) must be defined instrumentally in terms of possible success of actions.

I don't want to deny that this kind of relationship between belief, desire and action may hold for many actions and mental states (not just the kinds that we might credit to chickens, but to human beings too). The relation between the success of our actions – the achievement of our objectives or goals – and the truth of our beliefs must be an essential part of the whole story. But since it characterizes the truth-conditions of a belief in terms of the success-conditions of a desire, it owes us an account of the satisfaction conditions of desires. The satisfaction of a desire cannot simply be the cessation of desire, as Russell once thought; for a desire can cease even

⁷ F.P. Ramsey, 'Facts and Propositions' (1927)

if it is not satisfied. Rather, the satisfaction of desire must be what Whyte calls its *fulfillment*: bringing about a certain condition. But if bringing about this condition cannot be understood except in terms of the truth of a proposition, then this is what we are trying to explain. The problem is especially acute when the desires concern desires to find out something for its own sake: for in this case, the satisfaction of a desire just *is* the acquisition of a true belief. We are moving around in a very small circle.

Success semantics has a lot to be said for it; but I doubt whether it is the whole story since I doubt whether it can have anything informative to say about the pursuit of knowledge for its own sake. So I shall put it to one side here, without having pretended to have refuted it.

At this stage it might be objected that the line of thought I have been developing here has ignored the obvious difference between human and animal thought: the fact that our thought, unlike theirs, is expressed in language. Of course, this is an obvious difference. (We should ignore, I think, the evidence from so-called ‘linguistic apes’, which accordingly to one recent authority is ‘mostly anecdotal, lacking in systematic detail and often involves over-interpretation’.⁸) In any case, what is uncontroversial is that we are the only species who develop language in the course of normal ontogenetic development. But what is the significance of this difference for our understanding of thought? Does language simply make possible a more complex kind of thought or is there some difference of *kind* that language provides?

Descartes is famous for having denied thought to animals, partly on the grounds that they could not speak. (Descartes’s Cambridge contemporary Henry More

⁸ JC Gomez, ‘The Evolution of Pretence’ *Mind and Language* 2008

called this an ‘internecine and murderous view’.) In the 20th century, Donald Davidson (himself hardly a natural Cartesian) agreed with Descartes. Davidson’s idea was that to be a thinker is to be the interpreter of the thought of another, which essentially involves employing a language. So non-linguistic animals cannot think. Why does he think this?

Davidson’s argument focuses on what it is to have a *belief*. It is based on two assumptions: first, that in order to have a belief, one must have the concept of belief; and second, that to have the concept of belief, one must have language.⁹ It is a consequence of this that any creature which has beliefs must have a language. The more detailed line of thought is that to have the concept of belief requires mastering the distinction between how things seem and how they are. Davidson argues that language would suffice for making this distinction, and conjectures that nothing else would make it.

Davidson’s argument is controversial and has persuaded few. In particular, the premise that one can only have beliefs if one has the concept of belief is crucially unsupported, and without that, there is no reason to accept his conclusion, and no reason to deny thought to non-linguistic animals. In the relevant sense, a belief can be a simple representational state, which Ramsey’s chicken can have. We can call the chicken’s belief a belief *that chickens are poisonous* if we like, but this does not require that we attribute to the chicken the ‘concept’ of poison. Calling this a belief is just a way of indicating that the chicken represents the world in a way that guides its actions, and in way that can be correct or incorrect.

In order to have this ‘belief’ the chicken needs no beliefs *about* its beliefs. For example, it need not be *surprised* if it eats a caterpillar and does not have an

⁹ Donald Davidson, ‘Rational Animals’ 102

unpleasant experience. It need not discover that it was wrong. It just moves on, updating its representations accordingly. Being surprised, Davidson argues, requires that one distinguishes between how one previously thought the world was, and how one now discovers it is. I think Davidson is quite right about that. But he is wrong to think that being a believer requires that one is capable of surprise.

However, although Davidson's argument fails, it contains something which gives us a clue as to how to answer our question: what does language add to thought? (Or, what kind of thought does language make possible?) Davidson argued that having the concept of belief involves making the distinction between how things seem and how they are. This amounts to having the concept of error. And it turns out that there is evidence that although apes can form beliefs about mental states, there is no evidence that they have anything like the concept of error.

In a series of striking experiments, Brian Hare, Josep Call and Michael Tomasello (2001) provided evidence that chimpanzees can know what other chimpanzees can see, and therefore what they know. The essence of the experiment involved a dominant and a subservient chimp, and two situations. In the first situation, food was placed accessibly in front of the subservient chimp in full view of the dominant chimp; the subservient chimp did not move. In the second situation, an opaque barrier was placed between the dominant and the subservient, so that the food could not be seen by the dominant; in this case, the subservient chimp took the food. The irresistible explanation is that in the second situation, the subservient chimp knew that the dominant ape could not see the food.

In 1978 David Premack and Guy Woodruff asked the question, 'Does the chimpanzee have a theory of mind?' It seems to me that these kinds of experiment (among many others) indicate that we should give an affirmative answer to the

question – so long as we do not build too much into the term ‘theory’. Having a ‘theory’ of mind in this sense is just having a conception of other creatures’ mental states. But these experiments also suggest something about what kind of theory of mind they have. The chimps have beliefs about what other chimps can know or see. But – and this is the point I want to stress – there is no evidence that they have beliefs about what other chimps *believe*. What is the difference?

The classic test for testing for ‘theory of mind’ in infants is known as the *false belief test*, invented by Perner and Wimmer in 1983, and later developed by Baron-Cohen, Frith and Leslie. Children are told a story (illustrated by dolls or by human experimenters) in which character A in the story puts (say) a marble in a box, in view of the other character B. Character B leaves the room and character A removes the marble and hides it somewhere else. When B returns, the child is asked, ‘where does B think the marble is?’ Above a certain age (about four) children give the ‘right’ answer: *in the box*. But younger children often answer that B thinks the marble is where A hid it. In short, they have no understanding that B is in error, or has a false belief.

There is, to the best of my knowledge, no evidence that apes can pass the false belief test, and lots of evidence that they cannot.¹⁰ But chimps do seem to have beliefs about the mental states of other chimps. How should this be explained?

The distinction we need is the distinction between ignorance and error. The subordinate chimp knew that the dominant chimp could not see the food – that it was *ignorant* of this fact. There is no evidence that they show any awareness of the mental states being *correct* or *incorrect*. The mental states that this experimental paradigm reveals are what we might call *relational* mental states: knowledge, seeing, wanting.

¹⁰ See J. Call and M. Tomasello ‘Does the Ape Have a Theory of Mind? 30 Years on’ *TICS* 2008

These are states of mind that relate the thinker to the environment, and so cannot, in a certain sense, be *wrong*. Beliefs, on the other hand, are the kinds of thing that can be wrong. But there is no evidence that chimps can show any awareness of these kinds of state in conspecifics.

So unlike the chimp's conception, the child's maturing conception of mind introduces a representation of error. What is it to represent someone as in error? At the very least, it involves the recognition by one creature that the world is not the way the other creature represents it as being. The ability to hold these two representations in your mind – how the other represents something, and how it really is – is one of the things that distinguishes human infants from adult chimps, our nearest relatives.

It is clear that the way mature humans normally represent others as being correct or incorrect is showing agreement or assent, or by using the words for these things, 'correct' or 'incorrect' (or the words 'true' and 'false' – but sometimes I suspect that only philosophers use these words in everyday language). This suggests to me that Davidson was on the right track to think that there is a link between having the concept of belief and having a language. The link is this: it is when a creature has a language that it can easily and systematically represent the beliefs of others as being correct or incorrect. Children can do it at the age of four or five. Without language, it is very hard to see how they could do this. Very hard: I do not say impossible. But like Davidson, I cannot clearly see any other way in which it can be done.

The significance of language, on this view of things, is not simply that it allows us to communicate, or even that it allows a more sophisticated kind of communication – although both these things are true. The other extra thing that language gives us is that it facilitates and gives us a mechanism to articulate the correctness and incorrectness of the thoughts of others.

So far I have claimed that one of the things that distinguishes us from apes is the fact that we have the concept of belief (and therefore the concepts of truth or error) and they do not. I've also claimed that language facilitates our representation of the correctness of the thoughts of others. I would now like to connect this with my earlier theme of the desire for knowledge for its own sake.

To want to know something for its own sake is not to want it *because it is true* – if ‘because it is true’ is supposed to be an intelligible answer to the question ‘why do you want to know that?’ My colleague Jane Heal has put this point well, when discussing the idea that ‘the disinterested search for truth’ might be a value in itself:

When someone claims that information on a certain topic would be a good thing one can always ask “Why do you want to know about that?” An intelligible answer will have to say something about that particular subject matter. It cannot simply point back to the fact that the item in question would be a specimen of true belief.¹¹

But, Heal goes on, just because being ‘true’ can never be an intelligible answer to the question, this does not mean that an intelligible answer must always be to specify some practical project:

to say that an answer [to the question, ‘why do you want to know about that?'] must be forthcoming is not to say that the form of the answer must involve reference to some practical project in immediate or distant contemplation.¹²

¹¹ Jane Heal, ‘The Disinterested Search for Truth’ *PAS* 1988: 107

¹² Jane Heal, ‘The Disinterested Search for Truth’ *PAS* 1988: 107

Heal here points out the false contrast between the illusory idea that one might simply search for truth ‘as such’, just because it is true, and the perfectly correct (but I would argue, essentially limited) idea that our beliefs and desires serve our practical needs. There is, as she indicates, a third option: one might be interested in the truth about a certain subject-matter for its own sake.

When one is investigating a subject matter for its own sake, one is not pursuing the truth ‘just because it is true’; but nonetheless, one must think of oneself as governed by the norm or standard of *getting it right*. The amateur star-gazer who plots the changing positions of the stars over the year is doing it because of an interest in the stars, but if asked to reflect on what he is aiming to do, he should answer that he just wants to find out how things are up there. And for a ‘rational animal’ like our star-gazer the way to do it is to try and avoid error; and if you are going to try and avoid error, you had better have the concept of error in the first place.

We want to avoid error in the simplest instrumental cases, of course: we wonder whether we are right about where the food is, or whether we are right about where the predators are. We would be unable to wonder about these things if we did not have the concept of error. But once we have this concept, it can govern our thinking about non-instrumental subject-matters too, such as our interest in the stars. If we consciously wonder whether we are getting it right, then we must be capable of consciously employing the concept of error.

My conjecture, then, is that what is distinctive about human thought is the ability to pursue epistemic goals, independently of practical ends or the satisfaction of any desire except the desire to know: human thinkers sometimes pursue knowledge for its own sake. If this were true, then it would give a clear account of the striking differences between the thoughts of apes and the thoughts of humans.

How might one go about testing such a conjecture? Of course, conceptual or *a priori* arguments and connections are important, but ultimately one will look for empirical evidence and actual studies of animal and human thought.

Between 2005 and 2008 I was involved in an interdisciplinary research group on the origins of what is known as ‘referential communication’ – that is, communication with other animals about objects in the environment. (The group was funded by those masters of linguistic communication, the European Union, as part of their obscurely titled ‘Framework Programme 7’, sub-heading ‘New and Emerging Science and Technology’, acronym NEST... ‘It’s English Jim, but not as we know it’; one should not mock the hand that feeds one, I suppose.) The other members of this group were animal psychologists working on dogs, parrots, dolphins, and our closest relatives, chimpanzees, bonobos and gorillas. My role in the project was to attempt to clarify and articulate the central concepts assumed by the many of the psychological projects – in particular, reference, communication, intention and intentionality.¹³

A classic paradigm of referential communication in animals is the alarm calls of vervet monkeys, as revealed in the pioneering studies of Cheney and Seyfarth (1990). Vervet monkeys in the wild employ a number of distinct calls to indicate to other monkeys the presence of different kinds of predator. The hypothesis that this is *referential* communication is the hypothesis that these animals are communicating not about their inner states (fear, anger or something like that) or trying to command other monkeys to do things (‘flee!’ ‘Run for it!’ and so on). Rather, the monkeys are aiming

¹³ <http://psy.st-andrews.ac.uk/research/refcom/>

to inform other monkeys of something in their environment – which predator is coming – so that they will be able to take the appropriate evasive action (run up a tree if it is a leopard, hide under a bush if it is an eagle etc).

The evidence for referential communication among animals is mixed. One team went to watch gorillas in a nature reserve in Africa to study their gestures. But they found that gorillas made almost no gestures in the wild. The attempts to establish that parrots referentially communicate parrots got nowhere. The extent to which dogs follow the gaze of humans is still disputed. But where there was evidence for referential communication, it generally conformed to the model of the vervet monkeys: communication is geared to specific, immediate goals and very ‘domain-specific’ tasks: getting food, avoiding predators, mating and so on.

One topic though, the phenomenon of pointing, is of particular interest to me here. In the study of non-linguistic communicative devices, the study of pointing has (unsurprisingly) been the focus of a lot of research. Among human infants, there are two kinds of pointing.¹⁴ Infants point when they want something, or want an adult to give them something (‘juice!’). This is known as ‘imperative’ pointing. But they also point when they want to share attention with an adult, to draw their attention to something in the environment – this is ‘declarative’ pointing (the kind of pointing we might think of as the child saying ‘look at that!’).

What about animals? Dogs have a limited understanding pointing, as we shall see, and despite the name of this famous breed, there is little reason to think that they point themselves. But attempts to discern pointing in apes has met with mixed success. There seems to be almost no evidence of pointing in the wild, although some apes who have lived with humans occasionally point imperatively. But – and this is

¹⁴ Michael Tomasello, ‘Why Don’t Apes Point?’

the interesting result for me – there is no evidence of *declarative* pointing in apes, anywhere, at any time. As Michael Tomasello has put it: ‘no apes in any kind of environment produce, either for other apes or for humans, acts of pointing that serve functions other than the imperative functions.’¹⁵

What should we conclude from this? It seems to me that declarative pointing is what one would expect if there something like a psychological mechanism of pure curiosity: unlike instrumental pointing, declarative pointing can manifest a sheer interest in something with no especial need for a practical upshot (as Aristotle said, ‘not only with a view to action, but *even when we are not going to do anything*, we prefer seeing (one might say) to everything else’).

My tentative conclusion is that there is no evidence that non-human animals ever pursue a purely intellectual epistemic goal: their investigations of the environment are always for the sake of satisfying some other immediate goal: for food, shelter, sex, play or to engage other animals in collaborative pursuit of some of these goals. If pursuing a purely intellectual epistemic goal requires that one have the concept of error, as I have just argued, then the absence of a concept of error would go some way towards explaining why this is so.

What about the evidence for humans? If my point is that humans have some capacity which animals have not, then we would expect evidence from humans as well as from animals. The evidence from animals points in a negative direction. The evidence from humans comes, of course, partly from our own reflection on our own capacity. But the further theoretical question is: why do we have this capacity? How did it come about, both in the sense of how it develops in the life of an organism, as well as how did it come about in the development of the species?

¹⁵ Michael Tomasello, *Origins of Human Communication* (2008) 37-8

The developmental psychologists György Gergely and Gergely Csibra have recently proposed a novel theory of learning in human infants, which they call ‘Natural Pedagogy’. Their extensive experimental work on pre-linguistic infants strongly suggests that infants have an ability to learn very quickly what they call ‘generic’ and ‘cognitively opaque’ information. Information is ‘generic’, obviously enough, when it can be put to more than one use. And information is ‘cognitively opaque’ when the infants have no idea what the function or purpose of what is being communicated is. They learn to do certain things by imitation even when what they are learning has no obvious point. In a well-known experiment, for example, infants learned to turn on a lamp with their heads by copying the experimenter. It turns out that the infants copy the experimenter whether or not the experimenter’s hands are free. The interpretation is that the infant does not copy the experimenter only when her hands are occupied; it simply copies, according to Gergely and Csibra, because it has an innate capacity to recognize an occasion as one in which an adult is trying to communicate something to them. Infants are naturally sensitive to certain situations as communication situations. It is this hypothesized innate adaptive capacity to recognize such situations that Gergely and Csibra call ‘Natural Pedagogy’.

The Natural Pedagogy hypothesis has a couple of intriguing connections with the rather grand thesis I am defending in this lecture. For one thing, nothing like Natural Pedagogy has been discovered or hypothesized in apes, and it is famously difficult to train apes to learn generic information. Dogs, who have evolved alongside human beings, do seem to be sensitive to human attempts to communicate – as we saw, by responding to pointing. (Interestingly, wolves – even those reared by humans – are not.)

But the dogs' sensitivity to these situations is limited, in a very interesting way. As Pierre Jacob has nicely put it, 'In dogs, the sensitivity to ostensive communicative signals seems tied to particular individuals and primarily hooked to a motivational system whose goal is to satisfy human orders.'¹⁶ The infants' ability to recognize the communicative situation is much more flexible across different contexts, and the information they learn is often 'cognitively opaque': that is, it is not tied to any particular practical activity or motivation.

I don't think it is too fanciful to see a link here to the idea of the search for knowledge for its own sake. If Gergely and Csibra are right, and human infants have an innate capacity for the acquisition of cognitively opaque information, then could this capacity be the ontogenetic psychological basis for what I am claiming to be distinctively human, the interest in knowledge for its own sake?

I have been attempting to argue that, in a sense, Aristotle was right: we do naturally desire to know, and that we sometimes desire to know things for their own sake. We pursue epistemic goals, I have claimed, independently of their practical consequences. In itself, this claim might be obvious enough. The controversy comes in the claim that this is distinctively human, and in how the evidence is supposed to support the claim. I have argued that both philosophical considerations (for example about what the concept of belief requires) and empirical evidence (from animals and humans) support the thesis that the disinterested search for truth might be what distinguishes us from other animals.

¹⁶ <http://www.cognitionandculture.net/Pierre-Jacob-s-blog/the-scope-of-natural-pedagogy-theory-ii-uniquely-human.html>

Some might say that empirical evidence can never have any impact on a philosophical thesis, and that the only relevant considerations can be ‘*a priori*’ or conceptual. It would be easier to evaluate this suggestion if its defenders were able to say a little more about what distinguishes the conceptual or the *a priori*. But in any case, it is hard to understand why what distinguishes us from animals should be something which can only be established ‘conceptually’. The approach taken here contrasts also with one approach inspired by Wittgenstein, whose writings have (whether correctly or not) inspired a kind of quietism or conservatism about the mind: nothing we can learn about the brain or about other animals in the wild can tell us anything about the nature of our thought.

I am opposed both to the Wittgensteinian view and to the *a priori* view. Since we cannot discern sharp boundaries between different realms of knowledge, we should take ideas and evidence from wherever seems relevant. To borrow the words of another former Knightbridge professor, ‘if we believe that philosophy might play an important part in making people think about what they are doing, then philosophy should acknowledge its connections with other ways of understanding ourselves, and if it insists on not doing so, it may seem ... in every sense quite peculiar’.¹⁷ It is in the spirit of these remarks that I present my proposal to you this evening. Thank you very much for your attention.

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¹⁷ Bernard Williams ‘Philosophy as a Humanistic Discipline’ 199