Extracting Knowledge from Other Minds:
What do Children Understand about Question-Asking?
Steve Warwick Commentary December 2007

1. Here are our three main findings:

[Tell] Children evaluate unsolicited information appropriately* (exp 3, others)	[Ask] When they have to ask, children do not seem to decide to ask appropriately* (exp. 1, 2)	[Seek] When the message exists but has not been transmitted, children do decide to seek it appropriately* (exp. 3, 4)

* appropriately = taking into account the Experimenter's knowledge

These findings leave us with Two Puzzles:

> Puzzle 1 Why can 3-5 year olds discriminate knowledgeable from obviously ignorant experimenters when deciding who to believe but not when deciding whether to ask a question?
>
> Puzzle 2 Why do 3–5 year olds take into account experimenters' knowledge when deciding whether to look around the barrier at their answer but not when deciding whether to ask a question?

Puzzle 1 is about the difference between [Tell] and [Ask], puzzle 2 is about the difference between [Ask] and [Seek]. My aim is to persuade you that these puzzles are genuinely puzzling. I hope this isn't taking the idea of *work in progress* too literally.

2. Let's start with Puzzle 1. Here are Three Considerations which I suppose sometimes inform our decisions as adults to ask questions:

- I don't know what's in the box [aware of own ignorance]
- E does know what's in the box [aware of E's knowledge]
- I can discover what's in the box by asking E [understand that knowledge can be transferred via answers to questions]

If children were capable of grasping all three considerations, the fact that someone knew the answer to a question would surely give them

additional motivation to ask that question in some circumstances. But since children don't ask questions more often of knowledgeable than ignorant experimenters, we infer that others' knowledge does not motivate children to ask questions. So they must fail to grasp one of the Three Considerations. Which?

Take the first consideration. Are children aware of gaps in their knowledge (i.e. ignorance)? In the experiments Liz described children do ask questions more often when they are ignorant. Of course, this might be only because ignorance prevents them from acting and they are aware of not knowing how to act rather than because they are aware of not knowing a fact. But then failure to be aware of their own ignorance would not explain Puzzle 1. So let's assume for now that children are aware of their own ignorance.

Second consideration. Are children aware of others' knowledge and ignorance of what's in the box? There's some evidence that they are. As Liz said, children believe what adults say more often when the adult is knowledgeable than ignorant (where knowledge and ignorance are revealed either by having access to information, as in the experiment with the Dustbin {Robinson, 1999 #1371}, or by having been reliable or unreliable in the past, as in some experiments on Testimony). This is not conclusive. Perhaps children in these experimenters are only tracking information access and reliability rather than knowledge. But since such tracking would be sufficient to motivate question asking, this way of failing to be aware of others' knowledge would not explain Puzzle 1. So let's assume at least for now that children have some awareness of other people's varying states of knowledge and ignorance.

So far: (a) children do appear to be capable of grasping the first two of the Three Considerations; and (b) regardless of whether they actually grasp them, failure to grasp them would not explain Puzzle 1.

This is why we think children must fail to grasp the Third Consideration. They do not understand that knowledge can be transferred via answers to questions.

Now you might **object** to this claim. For if children didn't understand that knowledge can be transferred via answers, why would ignorance

drive them to ask questions?[1] If I thought someone's knowledge could not be transferred--if, for example, one of my colleagues were incredibly inarticulate--, there'd be no good epistemic reason for me to ask them any questions at all. So isn't the hypothesis that children don't understand knowledge as transferable falsified just by the fact that children do ask questions when they are ignorant than when they are knowledgeable (as our experiments 1, 2 showed)?

The objection seems plausible only to the extent that we think children ask questions because they believe that questions elicit answers which provide them with knowledge of facts they were previously ignorant about. There are two empirical reasons to deny this. First, when asked how they know a fact, children who have acquired knowledge by testimony don't reliably say that they know because they were told ("How did you know it was a strawberry/tomato—was it because you saw it or I told you?" --(Robinson and Whitcombe 2003: 58).) Second, children find it harder to say which of two speakers knows a fact than they do to discriminate between these speakers by believing the one who speaks the truth (Robinson, Champion and Mitchell 1999). These are reasons to doubt that children ask questions because they believe that questions elicit answers which provide them with knowledge of facts.

But why do children ask questions more often when ignorant than knowledgeable if it's not because they are trying to tap into the experimenter's knowledge? Let's imagine that when children first start asking questions they do so just for fun. Over time children notice that when they have a feeling of uncertainty and face obstacles to action, asking questions often removes the uncertainty and the obstacles; perhaps they even realise that asking questions tends to alleviate feelings of uncertainty. Now as adults we know why asking questions alleviates the feeling of uncertainty. It's because asking questions of people yields answers which manifest their knowledge. But I'm supposing children realise that asking questions alleviates feelings of uncertainty without understanding why. That realisation is what drives them to ask questions relevant to obstacles they face when ignorant. But since they don't understand why asking questions is

[1] Liz already address this question by suggesting that, for children, question asking is a response to feeling uncertain, much as looking or feeling seems to be. I want to expand on the question.

effective, they have no reason to ask questions of knowledgeable in preference to ignorant adults.

So the objection was that children must understand that knowledge can be transferred via answers because otherwise they wouldn't ask questions more often when ignorant than knowledgeable. We reply that the objection doesn't hold because children might know that asking questions alleviates feelings of uncertainty without understanding why.

Congratulations to us for surviving that objection, but how close are we to solving Puzzle 1?

> Puzzle 1 Why can 3-5 year olds discriminate knowledgeable from obviously ignorant experimenters when deciding who to believe but not when deciding whether to ask a question?
>
> Because they don't understand that knowledge can be transferred via answers to questions.

This is not so much a solution of the puzzle as an expression of how puzzling it is. How could children be aware of others' knowledge but fail to be aware that knowledge can be transferred via answers to questions? Is it because they have only a partial understanding of knowledge, because they don't understand how questions work, or because of something else? We don't know. The second puzzle helps to narrow down what might be happening though …

3. The first puzzle was to understand how it could be that children take into account knowledge states when deciding whether to believe what someone says but not when deciding whether to ask a question. We think this has something to do with children's not understanding that knowledge can be transferred via answers to questions.

The second puzzle arises from Erika's [Seek] experiments. In these experiments the experimenter's answer already exists and the child has to decide whether to seek it. And children do seek when the experimenter is knowledgeable more often than when she's ignorant. So why do 3–5 year olds take into account experimenters' knowledge

when deciding whether to look around the barrier at their answer but not when deciding whether to ask a question?

Our initial thinking on this was:

> In [Ask] children have to tap into knowledge that only exists in the experimenter's head whereas in [Seek] the answer is right behind the barrier.

This can't be the whole story, of course, because whether what's behind the barrier really is the answer depends on the experimenter's knowledge--what's behind the barrier is only the answer when the experimenter is knowledgeable.

We intend to explore further why [Seek] is easier than [Ask] by varying the conditions. For example, we want to know whether the difference between [Seek] and [Ask] depends in part on whether or not the answer has already been produced, or on the format of the answer.

Since that is work in progress I want to finish by putting forward a wild idea. This is neither justified by the evidence we have nor fully developed conceptually, but it may still help to focus debate on what could explain the Two Puzzles.

Children understand knowledge only as a private mental state and not as something that can be transferred from person to person. As they understand it, knowledge is a internal quantity that can no more be shared than a pain can; they have yet to think of knowledge as transferable in the way that skills are transferable. It is this limit on their understanding which prevents them from taking into account what people know in deciding whether to ask questions. However, this does not prevent them from thinking of a person's knowledge as something that affects her behaviour, just as pain does. So they are able to recognise that the experimenter's action of placing the counter on the sticker will be guided by knowledge in the [Seek] condition.

> <u>Hypothesis</u> children understand knowledge only as private and not as something that can be transferred

Of course to develop this hypothesis we'd have to be able to say how it was that children thought of knowledge which gave rise to this limitation. But suppose for a minute that this could be done.

One reason I like this hypothesis is because it leaves room for the idea that children might eventually acquire a fuller understanding of knowledge as something that can be transferred by answers. Children who ask enough questions will be in a position to realise that particular people sometimes refuse to answer certain questions, that different people sometimes give different answers to the same question, and that asking questions sometimes but not always alleviates ignorance depending on who you ask which questions. If children do observe these regularities governing the effectiveness of questions, they may also wonder why they obtain. And from that point it's not a huge step to the idea that it's the respondent's knowledge states which explain these regularities. Of course this does involve a huge conceptual step: from thinking of knowledge as something like a pain which is private and not subject to epistemic norms to thinking of knowledge as something capable of being transmitted and so explaining why questions alleviate ignorance depending on who you ask what. But perhaps the answers themselves, which are manifestations of knowledge, provide a model for this more sophisticated conception of knowledge.

A natural objection to the hypothesis is that it doesn't explain children's failure on [Seek]. For if they understand that knowledge affects action, then since answerings are actions, they ought also to realise that these answers are affected by knowledge.

The objection tacitly assumes that children know what the goal of answerings are. For even someone who understandings that knowledge guides action won't be able to anticipate the effects of knowledge on an action unless she also knows the goal of the action. Now the experimenter's goal in [Seek] could be described in non-epistemic terms as simply to match the position of a counter to the thing that is in the box. But in [Ask] the experimenter's goal is to inform the child what is in the box and there doesn't seem to be a simpler, non-epistemic way to re-describe this goal. So the child could only apply her understanding of the ways knowledge affects action to this case if she also understood something about how

answers can inform others. And it is a natural extension of the hypothesis above to suppose that children may not only fail to understand knowledge as something transferable but may also fail to understand ignorance as something treatable. That is, children may fail to understand the goal of answerings by failing understand how to cure ignorance.

I mention this idea to illustrate our thinking; it's not something we're committed to and it's possible that the next set of experiments will rule it out even before objections to its conceptual coherence do.

So what are the solutions to our puzzles?

References

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