My Brain Made Me Do It

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Shaun Nichols (this issue) correctly points out that current theories of the development of mindreading say nothing about children's intuitions concerning indeterminist choice. That is, there are numerous theories of how children make sense of belief, desire, and action, but none that appeal to any notion of free will. Nichols suggests two alternatives for why this is the case. It could either be (a) an "outrageous oversight" on the part of developmental psychologists or (b) a principled omission, reflecting a consensus that the notion of indeterminist choice is absent from children's mindreading processes. Nichols charitably favors the second alternative.

As someone who does research on mindreading in children, I think he is being too generous. I think it is an outrageous oversight. It is not, after all, that developmental psychologists claim that children have *determinist* intuitions. A good illustration of this omission can be found in the substantial literature concerning children's understanding of false belief (e.g., Bloom & German, 2000; Wimmer & Perner, 1983; Baron-Cohen et al., 1985; see Wellman et al., 2003 for review). In a typical study, children are told a story (sometimes acted out with puppets, or depicted in a series of pictures) about a girl named Sally who puts a candy in a basket and then leaves the room. While she is gone, another girl, Ann, moves the candy from the basket into a box. Sally then returns. The question for the children is: Where will Sally look for the candy? To pass this task, children have to appreciate that Sally will believe the candy is where she last saw it, not where it actually is, and hence, following the argument originally outlined by Dennett (1978), they must be capable of genuine mindreading. But correct performance on this

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task will not tell us whether children think that Sally's behavior is caused or whether it is chosen.

The only scholar to address this issue is Nichols himself. He presents 4- and 5-year-olds with scenarios of physical events, spontaneous choices, and moral choices, and finds that children are more likely to say that the physical events *had to happen* than the moral choice events (Nichols, 2004). This suggests that, for children, physical acts are caused, while at least some psychological acts are not, and is consistent with the broader conclusion that children are natural indeterminists.

Interestingly, though, Nichols thinks that it is not so simple. He presents experimental findings suggesting that in certain regards adults have determinist intuitions, and concludes that our common-sense understanding involves different, conflicting, perspectives concerning the existence of free will. A different way to make sense of this conflict, however, is to note that the main question that Nichols asks – What do the folk think about free will? – is vague in two ways.

1. *Who are the folk?* Nichols is engaging in a descriptive project, that of determining folk intuitions. But whose? He is explicitly *not* interested in those of professional contemporary analytic philosophers (like himself). But the same three objections he has to studying such philosophers (see also Stich and Weinberg, 2001) apply to the population that he does study – a small sample of undergraduates taking a philosophy course at University of Charleston: The group is culturally homogeneous. The sample size is far too small to look systematically for individual differences. And there may be indoctrination issues – given the context, the students might be pressured to show their professor how sophisticated they are, and to give the "right" answer.
2. *What sort of thinking?* The experiments reported by Nichols involve complex scenarios concerning novel worlds and perfect duplicates. Unlike the simple stories that Nichols used with children, they are *hard* – the Sudoku of stimuli, requiring sustained concentration. 13 out of 30 subjects could not understand the stories given in the first experiment. A second experiment was done by email so the subjects could mull over the questions and get feedback – and here 2 of the 8 subjects needed additional help.

There is nothing wrong with exploring people's explicit and conscious beliefs, but if this is one's goal, such a method seems needlessly elaborate. If one is interested in what these undergraduates think, why not just ask them? That is, why not carefully describe the ideas of free will and determinism to them, and then ask which they believe to be true, and ask them to justify their responses? This is simpler and will yield much richer data.

On the other hand, one might be more interested in tacit belief systems. For instance, there is considerable research looking at what babies think about arithmetical operations, the motion of objects, and the motivations of people (see Bloom, 2004 for review). But plainly babies cannot articulate any of their beliefs or expectations and almost certainly don't know that they know them. Similarly, the research program of modern linguistics is to explore subtle notions about language – such as the conditions under which a pronoun can co-refer with a referential NP – that have no conscious counterpart.

There are also some interesting cases where what people tacitly believe clashes with what they consciously believe. Many Americans will tell you that they adhere to a harm-based morality – if an act does not cause harm, it cannot be wrong – but when exposed to certain harmless but disgusting acts (such as having sex with an expired chicken), they are morally outraged (Haidt, 2001). Many Americans will tell you that they believe God is omniscient and omnipotent, but when Barrett and Keil (1996) told such adults stories about God performing multiple acts, their subjects tended to distort these stories in an anthropomorphic direction, treating God as if He had the limitations of a person, first doing one act and then another.

Even if some college students think that they are determinists, then, they could hold an implicit view of human action that involves free will. Such a view might conceivably be a human universal, part of how we naturally make sense of our own actions and the actions of others.

Consistent with this, there is evidence that even young children are common-sense Cartesian dualists (Bloom, 2004). People universally think of human consciousness as separate from the physical realm. Just about everyone believes, for instance, that when our bodies die, we will survive – perhaps rising to heaven, entering another body, or coming to occupy some spirit world. And just about everyone believes in free will.

At both a phenomenological level and an intellectual level, we experience ourselves as free agents. While our bodies are physical, and can be affected by physical things, we have choice. My arm might move because something bangs into it (causal), but it might also move because I choose to move it (choice).

The indeterminist nature of our common sense perspective has some interesting consequences once we learn about the brain. Within our culture, children are taught that the brain is where the thinking happens. But this does not turn them into materialists or determinists. Rather, the brain is seen as a cognitive prosthesis, as some optional add-on – what Steven Pinker once described as a "Pocket PC for the soul". In the moral domain, knowledge of the brain forces a distinction between two sorts of behaviors:

1) Those that are caused by the brain
2) Those that are caused by the person

Young children are explicit about this – they will tell you that you need your brain for certain actions, such as solving math problems, but not for others, such as loving your brother, or pretending to be a kangaroo (Bloom, 2004). But one can see this distinction as well in analyses by sophisticated commentators, as reviewed by Greene and Cohen (2004). For instance, consider Jonathan Pincus' discussion of serial killers (2001, pp. 74-75):

> Volition, as commonly conceived, derives from the mind, an entity that is separate from the brain. Even if this view about will is correct, ethics, morals, volition, all operate through the brain's activity, and they can be interrupted by physical injury.

Pincus describes the person as akin to the conductor and the brain as the orchestra. The expression of the will requires the brain, just as the conductor requires the orchestra. From this perspective, a bad performance can be explained as the fault of the conductor or the orchestra or both – and it would be unfair to blame the conductor for the failure of the orchestra. Similarly, "If investigation of a miscreant reveals that his brain is broken, it is likely that brain failure was at least partly responsible for his unacceptable behavior." This leads to the excuse that Michael Gazzaniga (2005) has dubbed: "My brain made me do it".

Micheal McGough, reporting on a 2005 conference on law and neuroscience, outlines this logic very clearly in his first paragraph.

> Suppose you're a juror in the trial of an accused child molester. A medical expert called as a witness for the defense says that magnetic resonance images of the defendant's brain show unusual activity in an area that lights up in many – though not all – pedophiles. Are you now willing to acquit the defendant on insanity grounds?

For anyone who is not a Cartesian dualist, this is all seriously confused. There is no immaterial conductor using the brain to accomplish its will. And the notion that pedophilia involves the brain is not a bold empirical hypothesis; it is a truism, and if it leads to the conclusion that the pedophile is blameless, then it follows that everyone is blameless for everything. Any serious legal and moral system needs some way to characterize those actions that people are not morally responsible for, as when a schizophrenic harms someone while in a delusional state. But "Her brain made her do it" is a non-starter.

Our indeterminist intuitions follow from the more general perspective that people take on mental life. If one is a materialist, it is easy to be a determinist – the determinism of human action is parasitic on the determinism of physical bodies. But materialism is not common sense. Like quantum physics and natural selection, it is a bizarre and unnatural view. We are intuitive dualists, and we naturally explain the social-intentional domain in a very different way than the physical domain. The developmental data, including Nichols' (2004) own pioneering work, and the observations from law and policy, further reinforce the conclusion that humans tacitly believe in free will.

REFERENCES

Baron-Cohen, S., Leslie, A.M., & Frith, U.
1985 Does the autistic child have a "theory of mind"? *Cognition*, **21**, 37-46.

Barrett, J.L. & Keil, F.C.
1996 Conceptualizing a non-natural entity: Anthromorphism in god concepts. *Cognitive Psychology*, **31**, 219-247.

Bloom, P.
2004 *Descartes' Baby: How the science of child development explains what makes us human.* New York: Basic Books.

Bloom, P. & German, T.P.
2000 Two reasons to abandon the false belief task as a test of theory of mind, *Cognition*, **77**, B25-B32.
Dennett, D.C.
1978 Response to Premack and Woodruff: Does the chimpanzee have a theory of mind? *Behavioral and Brain Sciences*, **4**, 568-570.
Gazzaniga, M.
2005 *The ethical brain*. New York: Dana Press.
Green, J. & Cohen, J.
2004 For the law, neuroscience changes nothing and everything. *Philosophical Transactions of the Royal Society of London B*, (Special Issue on Law and the Brain), 359, 1775-1785.
Haidt, J.
2001 The emotional dog and its rationalist tail: A social intuitionist approach to moral judgment. *Psychological Review*, 108, 813-834.
Nichols, S.
2004 "The Folk Psychology of Free Will: Fits and Starts." *Mind & Language*, 19, 473-502.
Pincus, J.H.
2001 *Base instincts: What makes killers kill?* New York: Norton.
Stich, S. and J. Weinberg
2001 Jackson's Empirical Assumptions, *Philosophy & Phenomenological Research*, 62.
Wellman, H.M., Cross, D., & Watson, J.
2001 Meta-analysis of theory-of-mind development: The truth about false belief. *Child Development*, 72, 655-684.
Wimmer, H. & Perner, J.
1983 Beliefs about beliefs: representation and constraining function of wrong beliefs in young children's understanding of deception. *Cognition*, **13**, 103-128.