Evolution on Gregory's Floor

A review of *Kinds of Minds: Towards an Understanding of Consciousness* by Daniel Dennett, Weidenfeld & Nicolson, London, 1996. 184pp, index, £11.99

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I wonder whether Dennett knows that I fear that he won't understand what I mean about his ideas about ideas.

According to Dennett, this fear of mine shows something like seventh order intentionality. Actually it doesn't much matter whether it is fourth, fifth or sixth. The important steps in the making of minds were the first two. A first order intentional system has beliefs and desires about all sorts of things, but not about beliefs and desires. Many animals can hide but don't know they are hiding. Only a few, such as chimpanzees, can deceive, pretend and keep secrets. Only once these skills have appeared can language, with the enormous advance that brings, evolve. We humans can leap to higher and higher orders of intentionality, limited only by how much we can hold in our heads at once.

In this, and many others ways, Dennett explores what it means to have a mind whether a human, animal or artificial mind, and the moral issues that raises. One of his major contentions is that adopting the intentional stance is the key to unravelling the mysteries of the mind. This is the strategy of interpreting the behaviour of an entity *as if* it were a rational agent whose actions and choices are governed by its own beliefs and desires.

Then, with his usual deep commitment to evolutionary thinking, Dennett shows how there is no distinction between "real" and "as if" (or "intrinsic" and "derived") intentionality. All sorts of things are intentional systems, differing only in how complex or interesting they are: self-replicating macro-molecules, thermostats, amoebas, plants, rats, bats, people and chess-playing computers. Treating them that way is the key to understanding them.

Intentionality is undoubtedly a complex idea and Dennett usefully clears up the confusion between its everyday (having intentions) and philosophical (being about something) senses. However, for a book in the "Science Masters" series I was surprised there was so much detailed philosophy. I was also sometimes confused. He is remarkably uncritical in his appeals to representations and models, and sometimes he seems to equate "having a mind" with being conscious and at other times with thinking.

Nevertheless there are many ideas here to interest readers of *Perception*. One is the "myth of double transduction" (Now you wouldn't fall for that one would you?). The myth is that first the sensory systems transduce light or sound into neural signals, then they send these to the brain where they are transduced again into something else - the stuff of consciousness. No - in this clear formulation you wouldn't fall for it but, says Dennett, in many subtler forms it still trips us up. Unwary theorists continue to think that since peripheral activity is mere sensitivity (since of course eye-balls aren't conscious), there has to be some central place where the sentience is added - and real awareness appears. Of course Dennett argues there is no such need. The way forward is to think functionalistically about the mind and body together, without appealing to a controller in charge of the rest of the body. It doesn't need one.

He goes on to explain his "Tower of Generate and Test", first put forward in his evolutionary masterpiece *Darwin's Dangerous Idea.* The first floor contains the Darwinian creatures. Darwin's genius was in seeing that the evolution of design can be explained by natural selection - that is, a process which generates lots of creatures and tests them by death. This is a marvellously effective, but extremely wasteful, design process. It created us all but took a very very long time.

Next in the tower is less wasteful and quicker. Skinnerian creatures don't have to die every time they do something wrong, they can learn. Behaviours are generated and then tested by feedback. Only behaviours that are rewarded are done again. As Skinner pointed out, operant conditioning is an extension of natural selection.

Third come the Popperian creatures. This step is perhaps the one most often overlooked (at least I had overlooked it until I read Dennett). Yet it creates crucial differences between kinds of minds. Popperian creatures don't need to actually emit the

behaviour in question. They can just imagine it. They think through the likely consequences of an action, if these are good (in terms of their own values) they act; if not they don't. This is a kind of internal "generate and test". Interestingly it is not obvious which creatures are only Skinnerian and which are also Popperian.

Finally, and this should surely please *Perception* readers, come the Gregorian creatures. It was Richard Gregory who pointed out that if you give someone a pair of scissors you are increasing their intelligence - or give them a wheel, a pencil, a coffee-maker or a tractor. Better still, give them mind tools - words. It is words that allow us to reflect on our actions and our selves, to assess the truth of propositions, to evaluate hypotheses, and develop culture. And with writing we can offload much of our thinking into the environment. It is words that give us higher-order intentionality and all that goes with it.

I love Dennett's tower, for yet again he has provided me with a new mind tool. But in the end I was disappointed by this book, mainly because he seems to have backed off from the most exciting of his own ideas. In both *Consciousness Explained* and *Darwin's Dangerous Idea,* Dennett played with the idea of memes. The term "meme" was originally coined by Dawkins (1976) to describe instructions stored in a brain and passed on by imitation. Memes are true replicators, just as genes are, and will act in their own interests to perpetuate themselves, even against the interests of the genes. Dennett had begun to explore selection in the memosphere and how memetic evolution speeds up the design process yet again. It transforms communication within the human brain and a new kind of mind emerges. We are, he claimed, brains infested with memes, and consciousness is a huge meme-complex. Yet Dennett doesn't mention any of this in *Kinds of Minds.*

Without this idea Dennett's fourth floor lacks any true evolutionary theory of the mind. His Gregorian creatures use tools and share ideas, but the principle of "generate and test" is not truly exploited. Surely the competition between memes could be used to reveal how minds are designed without a designer and how meme groups create illusions of intentional selves. I hope that one day Dennett or someone else will work out just what kind of evolution is happening on Gregory's floor.

References

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