Record of Clinical-Philosophical Pedagogy, Vol. 10, 2009

What in the World is Natural?

SHEILA WEBB
Institute of Education, University of London

The question of how children learn about the world, and questions around the development of concepts and the mind, have been approached in a variety of ways by theorists over the years. These different theories reflect different assumptions about the world and the way we know about it. In philosophy today there's an overwhelming commitment to 'naturalism', at least by philosophers in the English-speaking world, and this is a 'scientific naturalism'. Scientific naturalism is based on a particular view of nature, a scientific view of the world, and the high status of this view means scientific knowledge and scientific methods are increasingly seen as the *only* way to investigate and explain the world. If other intellectual enquiry, such as psychological and social investigation, doesn't fit this scientific framework it tends to be reduced to scientific language or eliminated altogether from explanations of the world. The assumptions of scientific naturalism have carried over into other areas of life, whether in education, economics or industry, scientific knowledge is privileged over other ways of knowing the world. Its evidence and its language override our other dimensions of experience.

But 'naturalism' is a contested term, and I want to suggest an alternative conception of naturalism, with different philosophical commitments and assumptions about the world that offers much more promise for thinking about the learning process. But let's start by looking at scientific naturalism, as clarifying it's assumptions helps show its strengths and limitations, and helps position our alternative naturalism more clearly.

Two leading assumptions of scientific naturalism have been put by Boyd, Gasper, and Trout (quoted in Putman, 2004), as: the view that all phenomena are subject to natural laws and that the methods of the natural sciences are applicable in every area of inquiry. On this view, all phenomena are subject to natural laws, natural laws being the causal laws of natural science. This means that what there is in the world, what's considered real, is what the natural sciences give us. The concern is with material reality, any non-physical properties, like psychological factors, ethics and meaning, are considered somehow un-real or mysterious. So on this view the world is atoms, molecules, cells, and the like, and things like colour and meaning, values and emotions are subjective qualities, projected on to physical reality by us. What is the nature of these important subjective qualities? How are they related to the physical world that science investigates? How do we acquire them in the first place? On the scientific view these questions are difficult to answer and mostly not even asked. Yet this is what we're interested in. On this scientific view the image of the mind is internal machinery, a sort of processor, and all too often it's reduced to the 'brain' and accounted for in a sub-personal way. In educational research there's a growing amount of literature that assumes this law-like mechanical picture of the

learning process and talks about our brain learning and thinking and remembering.

Let's take a look at what Kenan Malik tells us about scientists, after the discovery of DNA by Watson and Crick. Wilson who is a biologist described his feelings on the arrival of James Watson at Harvard in 1956. ' "He arrived", Wilson observes, "with a conviction that biology must be transformed into a science directed at molecules and cells and rewritten in the language of physics and chemistry. What had gone before, "traditional biology"—my biology—was infested by stamp collectors who lacked the wit to transform their subject into a modern science. . . . it is impossible to imagine the impact that the discovery of DNA had on our perception of how the world works" ' (Malik, 2000, p. 165). Evolutionary biologists responded by transforming their discipline into a more mathematically driven science, and a new discipline, sociobiology, brought the explanation of human behaviour into this scientific framework. Physics had become the standard for judging other approaches, with its own concepts and commitments being taken on by other disciplines. We can see the main assumption at work here: the law-like regularity of what's investigated by the sciences is assumed to hold true of all phenomenon, even human behaviour. And this mechanistic view, of what life is, uses the concepts and language of these sciences to talk about human affairs.

But much of what makes us human doesn't occur with this law-like regularity. We're talking about learning here, which requires other people, language and culture. . . Philosopher John McDowell talks of a distinction between the kind of thing that scientists study, the realm of *law,* and the space of *reasons* where normative relations between concepts means they don't act in a rule-governed way. Concepts that belong in the space of reasons—like judgement, values, knowledge—require a different kind of intelligibility and understanding. Scientific naturalism denies this distinction and attempts to explain phenomena that belong in the space of reasons out of scientific concepts and language that describe things in the realm of law. For instance, learning is explained in neuroscientific terms of the inner-workings of the body. What gives these explanations a high status—objective and rigorous—is the exclusion of subjective, normative and social factors, the very things we're interested in for an insightful picture of the learning process.

Another assumption of scientific naturalism is that if we reduce things down to the lowest level and understand how things work at this level, we can from there build up a more complex picture of how everything else works, including human behaviour. Commensurability is assumed, all sciences are thought to fit together to provide a unified explanation, with physics underpinning everything else. But this needs to be challenged. Breaking everything down into its basic components and investigating these in isolation may give us insights into these isolated components but not necessarily how they behave as part of a whole. Even the sciences themselves are incommensurable; their concepts and explanations cannot be subsumed into each other. And as for the human level, say values, they're simply not hierarchical and unified; we're constantly faced with difficult choices that involve incompatible values, and these will vary according to the ethics of the situation. The heterogeneity we face in our everyday social contexts calls for an understanding that's immediate and qualitative rather than built up, bit by bit. Explanations of cells and genes contribute enormously to our understanding of the body, but not of the person; they're only part of a human being, whose being is continually shaped by others and the social, cultural and historical factors of the world in which she lives. So while

cognitive development might be dependent on cells and genes and the laws of the sciences, it can't be reducible to them without leaving out these essential elements.

The second main claim *that the methods of the natural sciences are applicable in every area of inquiry* is a hugely widespread assumption. Scientific methods are empirical, and seen to give us the world as it is 'in itself', independent of any 'knower'. The image is of a detached observer. What's studied is presupposed to conform to the regularity of the realm of law, thus the qualitative complexity of human affairs is reduced to the quantitative, with its fixed criteria of measurement. From the rich diversity of our social activity, bits of it are isolated, decontextualized and dehumanized so as to make it suitable for empirical investigation. By removing the humanizing effects the enquiry is taken to be neutral and wholly objective. And the precise codified terms preclude the possibility of contingency and misinterpretation. These empirical methods go a long way to giving science its apparent authority as the only true way to acquire knowledge about the world.

There are many criticisms of such scientism, not least its claim to neutrality. No matter how precise and careful an investigation, it's the background assumptions and conceptions that influence its design and the interpretation of its data. These conceptual questions *precede* empirical investigation and cannot be settled by it. And if we are conceptually confused, we will ask the wrong questions, and design the wrong experiments. These assumptions are subject to social and cultural shaping even if the law-like manner of what's being investigated isn't. We had a glimpse of the rivalries and jostling that were shaping scientists' assumptions about what science *is* and by what criteria it should be judged; this standpoint isn't neutral, it's a scientific one, culturally and historically situated. This illustrates again that the methods and concepts of science are inadequate to account for, in this case, the very normative forces that push reductionism forward.

And what about scientific methods for enquiry into learning, teaching, the development of the mind? In education empiricism has translated into a target-setting and performativity culture; efficiency is the measure. We break down the most complex of normative phenomena into formulable and measurable 'standards' in order to fit with empirically verifiable assessment and inspections. Aims, objectives and targets, and plans how to reach these targets, all must be carefully formulated and closely followed. Such methods aren't suited to the unpredictability and contingency, and dare we say spontaneity, of classroom activity. How does such impersonal and detached methodology capture a child's imagination, confidence, curiosity, creativity . . . and a teacher's responsiveness and sensitivity to what's going on? Where does judgement fit in? Such normative notions belong in the space of reasons and aren't at all easily quantifiable, because their expression will differ according to particular contexts, or even moments within a particular context. The measurable and precisely specified nature of targets, learning outcomes and empirical methods make them inadequate for capturing these perfectly legitimate concepts that describe classroom learning. A large part of what we want to investigate and explain is simply omitted from scientific naturalism's picture of the world.

And yet this naturalistic view is enormously widespread; this is illustrated by the high status of scientific knowledge and methods in both popular and intellectual culture. In public policy, from education to healthcare and industry, and in public debate, scientific knowledge is privileged and its methodology seen as the only reliable way to acquire genuine knowledge.

Let's turn to an alternative conception of what's natural in the world. Instead of picturing the world as colourless and devoid of meaning, we can see it as already rich with meaning. A child born into a cultural and social world is introduced into something that already embodies meaning and language. And through ordinary upbringing, as she interacts with others and the world, her conceptual capacities are developed—she acquires a mind. This process is seen as *natural.* McDowell calls this conception 'Aristotelian naturalism' as he draws heavily on Aristotle's ethics. He argues that our capacities to acquire knowledge are natural powers, and thinking and knowing are part of our natural way of being in the world. This more liberal view of what's natural encompasses all those normative notions—from reason to humour—that are left out in scientific naturalism's picture of nature. And we come to know much of this 'richer reality' not only through scientific tests but through our social practices that form our human mode of life that is natural, but not law-like.

This Aristotelian picture distinguishes between the realm of 'the invariable' and the realm of the 'variable' and recognizes both as natural, but as requiring a different kind of knowledge. Scientific knowledge is suited to the realm of law, but we need a more practical knowledge, 'phronesis' also, and this practical reasoning is developed through experience. We don't have much time to talk about this, but I think the following is illustrative. This is a quote by Stanley Cavell that John McDowell gives us, it's about learning to use words correctly:

> We learn and teach words in certain contexts, and then we are expected, and expect others, to be able to project them into further contexts. Nothing insures that this projection will take place (in particular not the grasping of universals nor the grasping of books of rules), just as nothing insures that we will make, and understand, the same projections. That on the whole we do is a matter of our sharing routes of interest and feeling, modes of response, senses of humor and of significance and of fulfilment, of what is outrageous, of what is similar to what else, what a rebuke, what forgiveness, of when an utterance is an assertion, when an appeal, when an explanation—all the whirl of organism Wittgenstein calls 'forms of life.' Human speech and activity, sanity and community, rest upon nothing more, but nothing less, than this (Cavell, 1998, p. 60).

Although Cavell is talking about the competent use of *words,* it could well be *concepts,* and what we get from this passage is the idea of a more experiential and flexible type of knowledge, that we can adapt to use in different contexts. A lot of our learning and 'knowing' the world—what to expect and what is expected—is learnt from interacting in these shared social practices and activities that Cavell refers to. It's this kind of practical knowledge that's missing from scientific naturalist accounts. The importance of others and language aren't apparent in the scientific naturalist's framework. For McDowell, others, language and cultural tradition are essential to our being thinkers at all; he argues that if a child is to acquire 'a mind, the capacity to think and act intentionally, at all, the first thing that needs to happen is for her to be initiated into a tradition as it stands' (McDowell, 1994, p. 126). Critical reflection is seen as 'a standing obligation', and explanation of cognitive development begins at the complex level of our sociality. The central place given to language and cultural tradition compares with the physical reality that's central to scientific naturalism.

We can see that different assumptions about what's natural, lead to different ways of thinking about the world and how we come to know it. By clarifying the assumptions of scientific naturalism, we can see more clearly its shortcomings as a way of thinking about intellectual development. It doesn't acknowledge the space of reasons, and it's reductive framework is simply too narrow to account for the rich diversity of interactional and social effects on our conceptual development. And yet it remains the orthodoxy within philosophy. We've outlined another conception of naturalism, an Aristotelian naturalism, which embeds a different picture of the world. This conception recognizes a distinction between scientific knowledge and 'phronesis', or practical reasoning. We've been arguing that this kind of practical knowledge is missing from the scientific view of the world but is equally as important, and this liberal conception of naturalism is more conceptually equipped to adequately explain it.

REFERENCES

Putman, H. (2004) The Content and Appeal of 'Naturalism', in: M. de Caro & D. Macarthur, (eds.) *Naturalism in Question* (London, Harvard University Press).

Malik, K. (2000) *Man, Beast and Zombie* (London, Weidenfeld & Nicolson).

Cavell, S. (1998) Must We Mean What We Say?, in: J. McDowell *Mind, Value and Reality* (London, Harvard University Press).

McDowell, J. (1994) *Mind and World* (London, Harvard University Press).