

BACK TO THE FUTURE: RETHINKING THE BIO-SOCIO DEBATE BY REASSESSING ITS PAST

A BIOLOGICAL CHALLENGE?

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AS RECENT PUBLICATIONS make evident (Barkow 2006; Freese et al. 2003; AJS 2008; Stone et al. 2007), the issue of sociology's relation to biology is as prominent as it ever was. From the seventies on, the debate has gone through various stages of intensity and substance (Segerstråle 2001). By now, the idea that sociology can, should, and will align with biology has become an important, albeit contested part of sociology's self-understanding. A new wave of biological insights into human social life has gained traction. This wave includes the most unsubstantiated theorising, flagrantly drawing comparisons between humans and other animals (for scorching critique see Kitchner 1985), and sophisticated research into bodily practice and human development (e.g. Gogtay et al. 2004; Paille 2005; Shonkoff & Phillips 2000). Consequently, a broad range of methodological and theoretical questions have arisen. But apart from these specific questions, the idea of the project as such still looms: Should sociology become a branch of biology? Is sociology's object really different from ethology and behavioural ecology? These questions are often accompanied by other concerns: Can biology provide a sound basis upon which a rigorous science of human sociality might be built? Can such an alliance mature sociology out of its pre-paradigmatic puberty?

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WHAT SUCH CONCERNS boil down to is the question of causal primacy. Biological causes are often thought to be primary to social ones. In this vision of social reality, humans are biological, living beings first only

after which their lives become complicated by social relations. Supposedly, biological existence in itself harbours qualities that must profoundly affect the possibilities and tendencies of association. Biological primacy can therefore be equated with the logic of methodological individualism (or, as we shall see, the logic of culturalist determinism). This idea of a *homo clausus* (Elias 1978) that only becomes social after it engages with others, has far-reaching consequences for the way in which we can envision the socio-bio debate. Typically, theories that pretend to connect sociology and biology maintain that biology provides knowledge about constituent parts and sociology provides insight into the interaction between these parts (for an overview see Sanderson 2006). Sociology is taken to be about relations and biology is taken to be about the entities that enter into those relations. But wouldn't the point of a merger be to blur the very distinction between entities and relations? Why is it so hard to depart from a causal hierarchy between nature and culture?

IF IT CAN be shown that what sociologists are interested in is, in fact, constrained, predetermined or constituted by biological causes which sociologists fail to understand, it would be necessary to ground sociology in biology. This might even be a great opportunity as sociology might then finally, after having been such a problem child of the enlightenment, grow up to be a healthy, elegant discipline. Because biological causes are consistently envisioned as primary to social ones, this argument can only really be rejected by differentiating sociology's object of study from the world of biological causes. Consequently, sociologists have tried to delineate such an object: 'culture', 'society', 'social structure', 'meaning', 'communication', 'interaction', 'social construction', 'discourse', et cetera. But this is essentially a defensive strategy, because it does not question the idea of causal primacy. It just retreats into a domain in which biology is thought to be absent, upholding the presumed boundary between biological and social causes.

SO BY SPEAKING about bridging, connecting or relating sociology and biology as if they are far removed and need to be brought together, we also uphold the unquestioned distinction between primary and secondary causes. This way, the debate takes on an entrenched structure in which two choices exist: (1) protectionism: stay out of each others way, try to find some hinge in reality which may serve as a definite border between the two forms of knowledge production (cf. Berger and Luckmann 1966; Giddens 1986; Habermas 1989), and (2) imperialism: assimilate to the best model, try to find out which science is the most scientific and assimilate to that model (cf. Wilson 1999; Barkow 2006; Sanderson 2006).

I would argue that both ‘solutions’ are not really solutions at all. They simply recreate the problem in slightly different terms. They never really overcome the dichotomy of causal worlds. What’s more, the consequences are undesirable. The first ‘solution’ creates an island of social construction in a sea of real things. It thus exiles sociology to the symbolic land of the imaged and the fanciful. The second ‘solution’ is even more foolish. It not only suggests that sociology is about imaginary things, as in the first ‘solution’, but also that those things are unimportant and can be ignored.

WHAT WE HAVE here are two thoroughly unsatisfying ‘solutions’ to a badly posed question. We should find another way to think about the relatedness of biology and sociology. If we can rephrase the question about this relatedness, we might find more satisfying answers. In the following, I want to argue that this relatedness can only be rethought effectively if we look at the common history of sociology and biology and re-evaluate what this common history could mean to us today. As I will argue, both sciences are the outcome of the one and same radical change in thinking that took place, albeit hesitantly, in the 19th century. By re-evaluating the common history of sociology and biology, we can begin to call into question the idea that they are somehow far removed. This will undermine both the idea that there is a kind of border between the two disciplines, as well as the idea that the disciplines need to be brought together.

ALL IS GIVEN

HENRI BERGSON, THE French philosopher of life and knowledge, has probably devised the sleekest, simplest way to understand what is so radical about European thought in the 19th century. I will use one of his arguments here to understand the intellectual changes that took place and to delineate what common intellectual revolution brought forth sociology and biology as sciences.

IN THE FIRST chapter of *Creative Evolution* (1998 [1911]), Bergson describes the antagonism between two grand intellectual doctrines: finalism and mechanism. Finalism holds that everything tends to a predestined point of perfection. The world is moving from amoral chaos to moral order, of which there is necessarily only one. Seemingly in contrast to this,

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mechanism holds that everything is determined by mechanical laws, no norms attached. The world is as it is, because of mechanical causalities. But, argues Bergson, there is a shared assumption here. Both doctrines hold that *all is given*. In both visions of the world change is only an illusion. Nothing really original can emerge in these worlds, because it is either already provided for (finalism) or already determined by previous states (mechanism). So while both doctrines seem to have very different understandings of the world, they are, as far as change and history are concerned, precisely the same. In order to think about real time, what Bergson called duration, we must depart from both these doctrines and not be tempted to choose between either side. At the risk of oversimplifying, this little conceptual argument highlights the most interesting aspect of 19th century European thought, the context in which biology and sociology emerged.

THE ADVENT OF REAL TIME

SO WHAT IS this common history? We must remind ourselves that what we now call sociologists and biologists were often the same people in the 19th century, and there was fluid conceptual traffic between both inquiries (Fuller 2006: 80-81). It is only gradually that sociology and biology became differentiated and subsequently institutionalised as different disciplines within academia. Well into the 20th century questions of biology and sociology were discussed alongside each other (Kwa 2005; Young 1969, 1985). Intellectuals did so, because both kinds of questions belonged, to them, to the same field of problems. Living beings and societies pose the same kind of challenges in that they:

- (1) develop in more or less regular ways and thus seem to follow laws;
- (2) have functional structures (or structural functions)ⁱ and thus seem to be striving toward a goal, norm or destiny;
- (3) can be in good or bad states and thus seem to involve moral qualities;
- (4) in short, progressed – became more like they ought to be considering what they tend to do – through regular stages of development.

ⁱ Much debate went into deciding which was more important, structure or function

EQUIPPED WITH THE established tool for thinking, developed for quite different purposes, it was very difficult to capture progressive phenomena in thought. On the one hand, there was a register of mechanistic ideas developed to understand movements in geometrical space. On the other hand, there was a whole range of finalistic doctrines developed to understand morality, beauty and mankind's destiny. In the course of the

19th century, intellectuals began to gradually realize that what interested them most about life and society – their progressive existence – couldn't be adequately expressed by either of these doctrines. Between the two grand cultures of Art and Science emerged a new way of posing questions (Lepenes 1988).

AT THE BEGINNING of this uphill struggle, both life and society were not easily thought of in mechanistic terms. Life was largely understood through classification. All living beings were classified according to their outer characteristics (Foucault 2002 [1966]: 133-179). This meant that living beings and indeed the whole of natural history did not really change. Living beings merely tended to their rightful place in the table of classification, a divine order. Society was also thought of in moral terms (Wittrock et al. 1998: 1-34). It existed through precepts. Although people disagreed about how to understand these precepts (contract, categorical imperative or collective conscience), society was nonetheless understood as a moral phenomenon.

But at the same time, knowledge was accumulating about how living beings and societies could be rationally controlled as if they were mechanical. Medicine, breeding, government statistics, state economics, warfare and political revolutions produced insights into the law-like processes that determined the development of living beings and societies. The inkling that life and society, moral as they were, followed regular patterns of development that could be grasped with the exactitude of mechanistic laws sparked the ambition to somehow marry mechanistic and finalistic thinking into a positive science of history. August Comte is the great champion of this ambition, closely followed by Herbert Spencer, but many others began to work on this problem in their own ways. In the course of the 19th century we see the creation of a whole new field of inquiry, neither strictly moral, nor strictly mechanical. Animals and societies, organisms and collectivities were the prime objects of scrutiny in this new, positive vision of world history.

BY STATING THAT there is something like 'socio-logy' and 'bio-logy', that it was possible to positively understand the laws that governed the historical becoming of life and society, intellectuals in the 19th century weren't just subjecting organisms and societies to the gaze of science, but recasting the ambitions of knowledge as such. They did not 'mechanicise'

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what was formerly understood to be moral. Rather, they started to think of and discuss problems of a new kind: the problem of progress and the problem of change. How do living and social objects develop? What functions are involved in their existence? Which states or elements are pathological to the organic or social whole? In what way could animals and societies be amended? So, it is not just that analogies were drawn between life and sociality. That would render the commonalities of the new sciences merely metaphorical. These new questions were part of an entirely new way of thinking. Intellectuals started thinking about life and society as organizations. Let us look at a particularly beautiful and groundbreaking example in Spencer's *The Principles of Sociology*:

“And here we see more clearly how the two classes of things [living bodies and bodies politic, RvR] we are comparing distinguish themselves from things of other classes; for such differences of structure as slowly arise in inorganic aggregates, are not accompanied by what we can fairly call differences of function. Why in a body politic and in a living body, these unlike actions of unlike parts are properly regarded by us as functions, while we cannot so regard the unlike actions of unlike parts in an inorganic body, we shall perceive on turning to the next and more distinctive common trait. (...) In either of these the changes in the parts are mutually determined, and the changed actions of the parts are mutually dependent. In both, too, this mutuality increases as the evolution advances. (...) A respiratory surface to which the circulating fluids are brought to be aerated, can be formed only on condition that the concomitant loss of ability to supply itself with material for repair and growth, is made good by the development of structure bringing these materials. So it is in a society. What we call with perfect propriety its organization, has a necessary implication of the same kind.” (Spencer 2002 [1898]: 450-451; emphasis added)

Now, I would not say that the conception of organisation was perfect in the 19th century. Thinkers only slowly, hesitantly and imperfectly created this new way of thinking. Let me highlight the particularities of thinking with the concept of organisation.

THE QUESTION BECAME how progressive objects are organised: How should their changing states be understood? Are they conducive or destructive of their organisation, are they normal or pathological? It is important to realise how groundbreaking this new image of thought was. It involved a number of new possibilities. First, the concept of organisation implies that progression is not something that happens to organised objects from the outside. In finalism and mechanism, objects are either determined by their future or their past. Their actual existence is merely the reflection of external forces and is itself irrelevant. With the concept

of organisation everything changes radically. By way of their functional integration, through which all parts participate in the reproduction and maintenance of the internal order, organised objects are able to determine their own fate. Progressive change is not something determined by forces, mechanical or moral, which exist outside or apart from organisation. Rather, the organising forces are part of organisation, they produce the organisation and are reproduced by it, exist and disappear with the organisation. The question becomes how this reproductive system works and is transformed. A certain form of organised existence is itself a specific form of reproducing that organised form. Organisations produce the norms to which they strive and by striving to them reproduce norms.

The actual, ongoing existence of organised objects is not a reflection of external forces, but the very bundle of processes that determine what direction history will take.

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THIS BRINGS US to a second point. The new way of thinking about progress means that history matters. Time is not some neutral container in which fate unfolds itself. On the contrary, history develops path-dependently. This means that current states of organisation can only be understood by historicising them, digging out the specific process through which an organisational form has come into being.

Moreover, it means that what happens now, in practice, alters the future direction of organisational change. Finally, all this means that positive science is about historical objects that exist in real time, not about some external and eternal Ideas or Laws of which experiential reality is merely a derivative. So from a new concept of how certain objects exist, organisation, we arrive at a new concept of what kind of knowledge we can have of them. This knowledge is not the Truth, eternal and unchanging, but truths adequate for grasping changing circumstances.

INSTEAD OF CHOOSING between mechanism or finalism, the 19th century thinkers of the new sciences began to situate their objects of study outside of this division of the world. They began to situate their objects in real time. This not only involved historicising their existence, but also historicising truths adequate to them. The common history of sociology and biology consists of a common problem, namely how to think about history without implicitly assuming that all is given. In this crucial sense, sociology and biology are not different and do not conceive of their 'worlds' in different ways. No bridging is needed here.

BUT IF SOCIOLOGY and biology share a historical world view which understands objects as ongoing, changing organisations, what is all the fuss about? How did the question of their remoteness ever emerge? Here we must add to our analysis a problem which only marginally manifested itself in the 19th century, namely the problem of reflexivity.

REFLEXIVE BIOLOGY

IN THE PRECEDING argument I have run the risk of suggesting that all exponents of the new sciences were actually proto-Nietzschians, who pushed a radically anti-metaphysical agenda. Although that would have been great, it is simply not true. As soon as ahistorical Truth was shown to be inadequate, biologists and sociologists started to contemplate little ahistorical truths of their own – ‘society’, ‘culture’, ‘modernity’, ‘vitality’, ‘intelligence’ – and defend them with quite the same zeal as thinkers they opposed. It seems it’s not only very hard to create the field of inquiry in which a historical world view could emerge, but even harder to preserve it. Particularly when institutionalised in modern academia, sociologists and biologists have consistently ignored, misunderstood or forgotten what their predecessors had actually stumbled upon. We need philosophers like Bergson to point out the truly original thoughts that were created.

THE MOST INTERESTING aspect of organisation is that it denotes an ongoing, changing reality which incorporates in itself the regularities that determine its development. But as soon as such regularities were discerned, they were often attributed the status of essential characteristics which somehow exist outside of time. Reliably, certain parts of the world are then imagined as if they cause development, but are not themselves developed. So when sociologists start saying that culture determines behaviours or rationality determines the outcome of social choices, they have forgotten what had actually enabled their science to emerge. Equally, when biologists start saying that genes determine organic development, they argue as if there are things outside of development which are nonetheless involved in development. How can we remedy these lapses into prehistorical thought?

IN ORDER TO preserve a historical world view we must be prepared to change it. That is, we can only historicise the world if we are prepared to historicise our knowledge of the world. A reflexive attitude is therefore needed. As historical scientists we must constantly search for fossilised concepts in our reasoning that have taken on the function of determining

everything but never being determined themselves: culture, society, vitality, genes, intelligence. These concepts inevitably become the object of grand Truths, because if we can know them we can know everything. These Truths effectively kill history, because everything is presumed to be given in them. A reflexive critique of knowledge is indispensable for a historical science and because both biology and sociology are historical sciences, the need for reflexivity is common to both.

IT IS IMPORTANT to stress this last point. Reflexivity – thinking about how one is trying to think about something – is often seen as a specifically sociological hobby. This idea is reinforced by those who picture biology as a unified science in which it is already revealed how to think about biological objects. But in fact biologists do not agree on how to conceptualise their science. Synthesisers of biological theory, such as E.O. Wilson (1999; 2000 [1975]), Richard Dawkins (2006 [1976]) and David Hull (1989), act as if evolutionary biology operates with a stable paradigm, neo-Darwinism, which is only contested by religious nuts and ill-informed social scientists. But the most serious critique of the neo-Darwinian framework has come from other biologists (e.g. Lewontin 2000; Gould 2002). For our purposes here, the most interesting criticism has been formulated under the heading of *Developmental Systems Theory* (DST). By looking at the critique of DST we can come to understand that biologists need reflexivity just as badly as sociologists do.

IN HER GROUNDBREAKING book, *The Ontogeny of Information* (2000b), Susan Oyama radically denounces any biological concept that would have some causal primacy over others. Oyama argues that genes – the prime contender for special causal status – cannot, in any way, be a code, plan or predisposition for anything. While orthodox theory holds that genes are special because only genes are passed on to the off-spring, Oyama counters that if environmental conditions aren't passed on as well genes won't produce organisms, no matter how special they may be. Of course, no biologists would suggest that the environment doesn't matter, but that's not the issue here. Interactionism, the doctrine that genes interact with environments, doesn't need to be defended. It's quite obvious that DNA interacts with other stuff. Rather, Oyama and others (Jablonka et al. 2005; Oyama et al. 2003) are pointing towards the tendency among biologists to conceive of things – genes, memes, natural selection – as if they stand over and against historical reality. By treating genes as special causal sources which interact with other kinds of causes, strange questions become conceivable: how much of this trait is determined by genes and how much of it is determined by other factors? As if there is a zero-sum game between genetic and non-genetic causation!

Sociology could learn from the detachment with which biologists approach their research

NOW, RAISING THEORETICAL sloppiness to the level of orthodoxy is bad enough, but things really get out of hand when the same theoretical sloppiness is used to criticise the concepts and explanatory techniques of another science. So when biologists claim that human behaviour is biologically based, because genetic causes are necessarily primary to environmental ones, we should be very critical indeed. Not because, as sociologists, we are convinced of the all determining power of environmental causes, but because a hierarchy of causes is instated and causal hierarchies are what kills historical thinking. Through such a hierarchy we

risk effacing what makes historical science interesting. Although Oyama hasn't argued so herself, in her defence of what she calls causal democracy (Oyama 2000a) she has set up the theoretical position of a reflexive biology which is sensitive to its own ahistorical tendencies.

CONCLUSION

IN EVALUATING THE common history of biology and sociology I have tried to zoom in on their shared commitment to historical thinking. We have also seen that involved in preserving historical science is the arduous, often unsettling activity of reflexive critique. The notion of primary causes was exposed as a prehistorical idea, which nonetheless pops up every now and then. What is constantly at stake in the conceptual struggles of biology and sociology is how to think about objects that change and for which change is not provisional, but necessary. Moreover, it was shown that sociologists can only adequately critique overzealous biological determinism if they are willing to critique their own tendencies to instate metaphysical notions, such as 'society' or 'culture'.

BUT WHAT NOW remains of the ideal to merge sociological and biological knowledge and research? First of all, I think a set of commitments – to process, change and reflexivity – not only remains, but is strengthened as their application is widened. But more substantively, we might begin to conceive of the interrelation between sociology and biology in new ways. Rather than constantly coming back to the issue of integration, trying to bring the two sciences into one frame, we might suggest much more relevant and productive mingling. Biology could learn from the various ways in which sociologists have countered the tendency to solidify

concepts into ahistorical truths, thereby upholding science's emancipatory intentions. Sociology could learn from the detachment with which biologists approach their research, thereby increasing the possibility of finding unexpected explanations. Finally, we might stop the foolish business of trying to sketch some basic human nature in biology and sociology alike. 'Nature' as something fixed and grounded, as a stable vantage point from which mankind's variety might be objectively perceived, is an extremely anti-scientific concept. All it allows you to do in science is to claim you are right and others, who wish to paint a more complex and dynamic picture, are wrong. It affords no further analytical power.

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