

References

- Bekoff, Marc (ed. 2000), *The Smile of a Dolphin* (New York: Discovery Books).
 Damasio, Antonio (1999), *The Feeling of What Happens* (New York: Harcourt Brace).
 Darwin, Charles (1873), *The Expression of the Emotions in Man and Animals*.
 Nagel, Thomas (1974), 'What is it like to be a bat?', *Philosophical Review*, **83** (4), pp. 435–50.
 Nagel, Thomas (1986), *The View from Nowhere* (Oxford: Oxford University Press).
 Pepperberg, Irene Maxine (1999), *The Alex Studies: Cognitive and Communicative Abilities of Grey Parrots* (Cambridge, MA: Harvard University Press).
 Tinbergen, Niko (1951), *The Study of Instinct* (Oxford: Oxford University Press).
 Watson, John B. (1914), *Behavior: An Introduction to Comparative Psychology* (New York: Henry Holt & Co.).

A DOUBLE DISSOCIATION IN TWENTIETH CENTURY PSYCHOLOGY? A commentary on Bernard Baars: The Double Life of B.F. Skinner

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In his target article in this issue of *JCS*, Bernard Baars convincingly argues that an understanding of B.F. Skinner's personal and professional trajectory may be exemplary for the understanding of the development of twentieth-century Anglo-American psychology and philosophy. This places the narrative about a young man's unresolved tensions and unfulfilled ambitions into a richer and much more interesting context.

The account of Skinner's double life is such a good story that one is left wondering why it has not long ago become part of the standard lore of psychology, along with Pavlov and his salivating dogs in the early days of the Soviet Union; and Freud and the hysteric Viennese women during the de facto break-down of the Central Europe of the double monarchy. Like these, this tragic *bildungsroman* of how the prospective stream-of-consciousness writer in small-town Pennsylvania became a denier-of-consciousness scientist has narrative qualities of an almost mythological nature. It is story of how the world (of psychology and related disciplines) came to be the way it is.

Baars demonstrates how the scientific taboo on consciousness has to be seen in relation to a parallel focus on consciousness within other intellectual traditions in the twentieth century such as literature and arts. It seems very probable that this split is but one instance of division between the sciences on one hand and the humanities on the other which was widespread in the century that we have just left. A split, which was first described as originating in two different cultures (Snow, 1959) but which is now often seen to be part of a peculiar modern constitution (Latour, 1993; 1999) that in a highly specific way separated the world into distinct entities such as nature and culture with the mental in strange ways located right in the middle.

No matter which perspective one accepts, this suggests that Skinner's life was, indeed, right in the vortex of processes that extends beyond the single individual. By implication, the story of psychological dissociation told by Baars could

perhaps be complemented by another one, told from a perspective of more general cultural and social processes, since the story is very much about how certain styles of thinking (Fleck, 1979) and reasoning (Hacking, 1992) became vindicatory at the expense of other perspectives.

Frederick Bartlett: Constructing memory, forgetting intentions

There are in this respect interesting parallels and contrasts to be found in the life-narrative of another of the founding fathers of psychology, Frederick Bartlett (1886–1969), who took up the first chair in psychology at Cambridge University in 1931. From this position, Bartlett resolutely promoted a pattern for psychology as experimental, practically minded, atheoretical and anti-intellectual that is still regarded as the hard-core of the discipline within most university departments in Great Britain (Costall, 1995). This understanding of psychology as a glorified button-pressing endeavour, easily integrated into the Faculty of Natural Sciences, helped to put the discipline firmly on the academic and scientific map. However, in spite of the obvious success of psychology as an established intellectual discipline, Douglas (1986) and Costal (1995) both claim that the actual content that became known as the Cambridge School was not at all what Bartlett had wanted. What had gone wrong? During his formative intellectual years, Bartlett was strongly inspired by the anthropologists W.H.R. Rivers and A.C. Haddon. They had both participated in the famous Cambridge expedition to Torres Strait in 1898 to study cross-culturally and in an evolutionary perspective the foundations of human cognition. Over the next decades they, each in their own way, attempted to formulate theoretical models that could integrate a societal and an individual level (Douglas, 1986, pp. 83–6). Along these lines, Bartlett attempted in 1913 to write a book on how eminently social processes like standardisation and conventionalisation affected individual cognition.

Like Skinner's attempt to write a stream-of-consciousness novel some ten years later, this project was never finished, and it apparently took Bartlett on the verge of a nervous break-down. He saw the limitations to the experimental models pursued by the Gestalt psychologists, who mainly worked on particular mental faculties, but it was impossible for him to turn his interest in the social processes guiding attention into actual experimental designs (Douglas, 1986). Meeting up in 1913 with the then 19-year old wiz-kid Norbert Wiener, the father-to-be of cybernetics, gave Bartlett the tools to prove how cognition was indeed an active process where 'observers constructed a terminating design before they had reached it and reported having seen detail which in fact was not there' (Bartlett, 1958, p. 142, quoted in Douglas, 1986, p. 88). However, his experimental designs, which became increasingly strict, subtle and amenable to objective scoring, effectively led him, and the discipline at large, still further away from the initial interest in the interplay between individual, social and institutional processes in perception in cognition. As concluded by Douglas: the experimental stringency required that the particular differences of emotional interest affecting each subject to be strictly excluded. The social dimension of

their experience was peeled away from the subjects (Douglas, 1986, p. 88). It was arguably this development, and the fact that the psychology, of which Bartlett became the founding father, increasingly became a technical matter of statistics and experimental design that led Bartlett to be increasingly dissatisfied with his intellectual brain-child, to the extent that anecdotally he is said to have claimed, at a reception celebrating applied psychology in Cambridge, that ‘It had all gone badly wrong, *I wish I had written novels instead*’ (Costall, 1995, italics added).

A double dissociation in psychology?

There is an interesting symmetry between these two men: Skinner, who tried but failed to become a novelist, and Bartlett who wished he had become one. Skinner whose life embodied a fenced off polarity between a scientific life of disciplined objectivity and an inner life of lush and conflictful subjectivity (Baars, this volume) and Bartlett: the expert on memory who himself managed to forget his own teachings. He who taught that intentions guide cognition, forgot his own intentions (Douglas, 1986, pp. 88–9). In the juxtaposition of these two founding fathers, both exposing what seem like mechanisms of dissociation, we are perhaps left with the contours of some of the practices and ideas that became central in mainstream Anglo-American psychology in the twentieth century.

There appear to have been at least two process of dissociation, this time at an epistemological level rather than at a psychological level. On one hand, a dissociation of the subjectivity of lived experience from the objectivity of observable stimulus–response paradigms. On the other hand, a dissociation of the generalizable experimental subject from those concrete, individual persons, embedded in social and cultural relationships, who volunteer to play the roles of subjects for the psychological examinations (Roepstorff, 2002). Whereas the narrative of B.F. Skinner, in Baars’ excellent reading, gives us the narrative of the former, the trajectory of F. Bartlett, through the readings of Costall and Douglas, gives the other story. In both instances, we are witnessing the inner conflicts and unsolved struggles of real persons that, in a way, are much more complex than the intellectual traditions that have come to be identified with them.

Lifting the taboo: bringing within limits

Baars uses the notion of taboo to describe the role assigned to consciousness by Skinner and his followers. The word entered into English usage through James Cook’s explorations in Polynesia in eighteenth century, but as with many imported concepts, the actual meaning of the word remains somewhat obscure. Based on a re-interpretation of ethnographic evidence, it has recently been suggested that the proper translation of the Polynesian word *tapu* is neither sacred nor forbidden, as is the standard English usage, but rather off limits (Keesing, 1985). Something is *tapu*, off-limits, only if some agent defines it as such, only given a certain perspective and always to someone. It cannot be *tapu* in and of itself. Being *tapu*, implies a context. A place, act or thing that is *tapu* this

afternoon from the perspective of people and in the context of a particular ritual or circumstance may be *noa* [within limits, AR] or *tapu* for different people tomorrow (Keesing, 1985).

This understanding of taboo moves the concept — and the social and cultural practices related to it — away from a sacred domain and into a somewhat more pragmatic interplay between authority, control, and accessibility. To cut a long story short, the main trend in the scientific field broadly characterized as consciousness studies has been an attempt to bring into focus some aspects of human subjectivity and experience, that had for long been considered off limits methodologically as well as conceptually. As argued by Baars (this volume) and McCrone (1999), recent developments in functional neuroimaging have been an important facilitator in this process. This seems probable, since the classic objection against introspective evidence and conscious processes was that such phenomena could not be measured. They were therefore inherently subjective and as they were bound to the individual, rendered them off limits for an objective scientific description.

However, in many brain imaging experiments, there are no discernible objective differences between the conditions as seen from a third-person outside observer. Instead, the effective contrast is established by differences in the ‘script’ enacted by the subject during the experiment, and this can best be validated by reports from the subjects on their emotional or attentional states during the experiment (Jack & Roepstorff, 2002; for recent examples see Blood & Zatorre, 2001; Gallagher *et al.*, 2002; Lutz *et al.*, 2002). We may, in other words, be witnessing a rather solid development where consciousness, understood as the acceptance and pragmatic use of a first-person perspective, is indeed increasingly used in a rather unproblematic way as a variable in cognitive experiments, publishable in mainstream scientific journals.

Are we effectively experiencing a weakening of the scientific taboo on consciousness? Perhaps consciousness is no longer a concept that scientists may talk about only through euphemisms, and it is no longer off-limits for examinations that would like to call themselves scientific. This suggests that Chalmers famous hard problem of the 1990s, which confronted the subjective first-person perspective with the objective third-person perspective, has indeed been transformed into a resource that may directly be used in generation of novel facts. Facts, which to paraphrase the epistemologist Ludwik Fleck (1979), become points of resistance that other researchers must take into account.

The second-person enigma

It seems, therefore, not unrealistically optimistic to believe that Skinner’s painful dissociation is indeed being left behind — and Baars’ narrative in this volume may assist in that development. But what about Bartlett’s problem? What about the fact that successful paradigms for psychological experiments seem to factor out social and intersubjective elements in cognition and perception and, by extension, in consciousness? Within cognitive science and consciousness

studies, the apparently inherent communicative and intersubjective aspect of human experience, which we by analogy to linguistic terminology may call the second-person perspective, appears to be investigated even less than the first-person perspective (see Thompson, 2001, for an overview). However, current brain imaging experiments pose an interesting challenge to this dissociation as well. A detailed analysis of the actual practices and procedures involved in brain imaging experiments demonstrates that this perspective seems an almost unavoidable aspect of the experimental situation. Even when studying apparently simple stimulus–response paradigms, such as the relation between a tickle-under-the-foot and a finger-tap, intersubjectivity — in the form of a shared understanding between the experimenter and the experimental subject — is crucial for setting up the experimental situation (Roepstorff, 2001). Indeed, one of the most stunning facts about brain imaging experiments is that it is so easy to convince people that they should lie completely still in an unfamiliar environment, expose themselves to strange sorts of radiation and magnetism, and then act as if they were simple stimulus–response automata (Roepstorff, 2002). That this is a special and incredibly useful feature in human interaction is at least clear to researchers doing monkey fMRI, where performing even a simple cognitive task adequately in the scanner (Nakahara *et al.*, 2002) requires many months of training the animals, while humans can simply be told what to do (Miyashita, personal information).

By an extension of Chalmers first-person hard problem, we may call this ability for humans to rapidly exchange, share and sometimes disagree on understandings of situations and models for action the second-person enigma. Factoring this perspective into cognitive brain-mapping experiments translates into embedding the objective stimulus–response setting of the behaviourists into a second-person script-report scenario (Jack & Roepstorff, 2002). Although this may not solve Chalmers hard problem, factoring-in the second-person enigma simultaneously renders that, which appeared as an insoluble problem, pragmatically useful (*op. cit.*) and theoretically somewhat more interesting. It takes as a starting premise what appears to be an unquestionable anthropological fact — in two senses of the word — that so much of human perception and cognition is directed against and mediated by other people (Roepstorff, 2001).

Styles of knowing for the twenty-first century?

The twentieth century was a time for creating new scientific disciplines that each — like a nation-state, the political ideal of the period — had to carve out their own unique and easily identifiable part of the total conceptual landscape. This joint reading of the personal trajectory of two founding fathers suggests that for much of Anglo-American psychology, this meant cutting out, for very sound methodological reasons, important aspects of mental life: on one hand, the subjective, individual experience, on the other, the interpersonal sharing of understanding. Instead of digging trenches, the challenge for this century may rather lie in outlining pragmatic research positions, from where one can see that

humans simultaneously and apparently seamlessly relate to and interact with three very different entities in the world: an inner self, an outer physical world, and a bunch of other subjects that also relate to themselves, to the world and to others. Theoretical positions, which try to accomplish this, seem to pop up from various corners of the established conceptual landscape such as anthropology (Ingold, 2000; forthcoming) and phenomenology (Zahavi, 2001). These approaches may give the initial contours for the styles of inquiry, reasoning and knowing, that could appear attractive and indeed vindicatory for the twenty-first century.

References

- Bartlett, F. (1958), *Thinking* (New York: Basic Books).
- Blood, A.J. and Zatorre, R.J. (2001), 'Intensely pleasurable responses to music correlate with activity in brain regions implicated in reward and emotion', *Proc Natl Acad Sci USA*, **98**, pp. 11818–23.
- Costall, A. (1995), 'Sir Frederic Bartlett', *The Psychologist*, June 1995, pp. 307–8.
- Douglas, M. (1986), *How Institutions Think* (Syracuse, NY: Syracuse University Press).
- Fleck, L. (1979), *Genesis and Development of a Scientific Fact* (Chicago: Chicago University Press).
- Gallagher, H., Jack, A.I., Roepstorff, A. and Frith, C.D. (2002), 'Imagining the intentional stance in a competitive game', *NeuroImage*, **16**, pp. 814–21.
- Hacking, I. (1992), "'Style" for historians and philosophers', *Stud. Hist. Phil. Sci.*, **23**, pp. 1–20.
- Ingold, T. (2000), *The Perception of the Environment* (London: Routledge).
- Ingold, T. (forthcoming), 'Three in one', in *Imagining Nature Practices of Cosmology and Identity* ed. A. Roepstorff, N. Bubandt, and K. Kull (Aarhus: Aarhus University Press).
- Jack, A.I. and Roepstorff, A. (2002), 'Introspection and cognitive brain mapping: From stimulus-response to script-report', *Trends in Cognitive Sciences*, **6**, pp. 333–9.
- Keesing, R.M. (1985), 'Conventional metaphors and anthropological metaphysics: The problematic of cultural translation', *Journal of Anthropological Research*, **41**, pp. 201–17.
- Latour, B. (1993), *We Have Never Been Modern* (New York: Harvester Wheatsheaf).
- Latour, B. (1999), *Pandora's Hope: Essays on the Reality of Science Studies* (Cambridge, MA: Harvard University Press).
- Lutz, A., Lachaux, J.P., Martinerie, J. and Varela, F.J. (2002), 'Guiding the study of brain dynamics by using first-person data: Synchrony patterns correlate with ongoing conscious states during a simple visual task', *Proc Natl Acad Sci USA*, **99**, pp. 1586–91.
- McCrone, J. (1999), *Going Inside. A Tour Round a Single Moment of Consciousness* (London: Faber & Faber).
- Nakahara, Y., Hayashi, T., Konishi, S. and Miyashita, Y. (2002), 'Functional MRI of macaque monkey performing a set-shifting task', *Science*, **295**, pp. 1532–6.
- Roepstorff, A. (2001), 'Brains in scanners: An Umwelt of cognitive neuroscience', *Semiotica*, **134**, pp. 747–65.
- Roepstorff, A. (2002), 'Transforming subjects into objectivity: An ethnography of knowledge in a brain imaging laboratory', *FOLK*, Journal of the Danish Ethnographic Society (forthcoming).
- Snow, C.P. (1959), 'The two cultures and the scientific revolution', in *The Two Cultures: And a Second Look* (Cambridge: Cambridge University Press).
- Thompson, E. (ed. 2001), *Between Ourselves*. Special issue of *Journal of Consciousness Studies*, **8** (5–7) (Exeter: Imprint Academic).
- Zahavi, D. (2001), 'Beyond empathy: Phenomenological approaches to intersubjectivity', *Journal of Consciousness Studies*, **8** (5–7), pp. 151–67.