

INTRODUCTION

Werner Callebaut

This issue of *Philosophica* is a modest dedication to the memory of Donald Thomas Campbell (1916–1996). Campbell was trained as a social psychologist at the University of California in Berkeley under Egon Brunswik and Edward Tolman, but he was to become highly influential in many other fields as well. In fact, it is no exaggeration to say that Campbell's career and impressive scholarship provided a "bellwether" to the most important issues in post-World War II social science methodology and epistemology, as Overman (1988) appreciatorily put it. I would add that he did not pursue scientific aims for their own sake but was motivated by germane humanistic concerns. This normative dimension is highlighted, for instance, in his Presidential Address to the American Psychological Association (Campbell 1975).

The five papers that follow, although severally focusing on (or responding to) a specific facet of Campbell's breadth of preoccupations only, jointly quite well illustrate the six themes that Brewer and Collins (1981) identified as recurring throughout his writings. (The development of Campbell's intellectual outlook is admirably summarized in his posthumously published paper, "From evolutionary epistemology via selection theory to a sociology of scientific validity" [1997], which is truly a kind of intellectual testament.) Positing an objective reality that can be—incompletely and fallibly—"seen" or known by us natural subjects (*hypothetical realism*), our epistemological predicament is to disentangle shared perceptions from shared reality. Brewer and Collins (1981) correctly regard addressing this challenge as the purpose behind almost all of Donald Campbell's contribution to social science theory and methodology. This is the common thread that unites his six main "themata":

(1) The *selection* model of the production and accumulation of knowledge

and moral wisdom.

(2) *Triangulation*: multiple perspectives of observation permit fixing on a common object of perception in a way that is precluded from a single vantage point.

(3) The *entitativity* of social groups and, more generally, the non-dispensability of higher-level principles and mechanisms (reductionism-cum-"downward causation").

(4) Our ability to recognize entities or make judgments of equivalence relies crucially on contextual features and on a process of *matching patterns* of stimuli or stored representations of stimulus patterns. This idea is also applied to cross-cultural research (how to assess the equivalence of instructions and translations of ideas across cultures and languages), the fit between theory and data, and scientific progress, which Campbell sees grounded in an implicit trust in the bulk of previous knowledge (his "99% trust/1% doubt ratio").

(5) The importance of assimilation, contrast, and adaptation level (deviation from experience enhances the salience and perceived intensity of stimuli) in perceptual and social judgment.

(6) Cue utilization and composite dispositions, resulting in a reconciliation of behaviorist and cognitivist (including Gestalt) traditions in psychology. One characteristic that singles out Campbell's approach is his insistence on the importance of "vicarious" modes of knowing or acquiring behavioral dispositions.

Awareness of the importance of (3) and (6) in particular should correct the still common perception according to which Campbell's evolutionary epistemology and selection theory are strictly neo-Darwinian (cf. Apostel 1987). In Campbell's view it is crucial to consider a *hierarchy of levels* on which Darwinian mechanisms operate, allowing for vicarious selection. Moreover, he placed great emphasis on *internal* selection factors and mechanisms. Both these features are departures from neo-Darwinian orthodoxy and bridge much of the gap between Campbell's account of cognition and the sort of evolutionary systems biology envisaged by, say, Clifford Hooker (1995), which itself extends Piagetian genetic epistemology. As an aside, let me note that Campbell's evolutionary epistemology had been around long before Karl Popper began to publish work in the same vein. In the exchanges that preceded the publication of his locus classicus, "Evolutionary epistemology," in the 1974 Schilpp volume devoted to Popper's philosophy, Campbell was very generous in allowing

Popper to imply priority or co-priority with him for a number of ideas that Campbell clearly had first. But "Campbell cared more for the fitness of his ideas than their credited source, and saw this as a strategy to increase their visibility to philosophers" (Bill Wimsatt, personal communication, 19 April 1997).

It is only appropriate that the Ghent-based journal *Philosophica* pay this tribute to Campbell-the-polymath. Quite a few Ghent alumni made Don's personal acquaintance in the "Blandijn" (the Faculty of Letters and Philosophy) in 1979, where he and his wife Barbara Frankel attended a conference on "Theory of Knowledge and Science Policy." (We had been introduced to his evolutionary epistemology and to some of his methodological ideas by Marc De Mey.) The paper he delivered there, "For vigorously teaching the unique norms of science: An advocacy based on a tribal model of scientific communities" (actually an excerpt from his William James Lectures at Harvard in 1977), left profound marks on our philosophical education. It was an attempt to reidentify the "*something* special about science, which gives it some greater legitimate claim to objectivity than other social systems" in the light of post-Kuhnian relativism, or, as he described it, "'cult-solipsism', portraying sciences as self-deceiving social systems incapable of distinguishing truth from tribal myth." In retrospect I would dare to claim that it was primarily Don's influence that made us sensitive to the message of the then emerging social studies of science (or "sociology of scientific knowledge," as many of its advocates prefer to call it), while making us wary of their excessive relativisms. It would be interesting to compare and contrast the development of Flemish and Dutch universities from the perspective of Campbell's "ERISS" ("Epistemologically Relevant Internalist Sociology of Science") and his later "sociology of scientific validity": whereas in the Netherlands, science and technology studies have more or less displaced epistemological concerns, philosophy of science in Belgium seems thriving, given the circumstances.

Don and Barbara returned to Ghent in 1984 to participate in one of the handful evolutionary epistemology conferences that were held worldwide (Callebaut and Pinxten 1987) as well as in the George Sarton Centennial conference convened by EASST (the European Association for the Study of Science and Technology), 4S (the U.S.-based Society for the Social Study of Science), and the local think tank, Communication and Cognition. Don had this notion of a "structural selection" of scientific

ideas: in order for an idea to become accepted by a scientific community, it typically has to pass a whole series of more or less severe survival tests in a nested hierarchy of selection environments, starting with the originator's self-doubts. It is fair to say that by their own example, the Campbells conveyed to many scholars accustomed to the competitive spirit of academia the incomparable advantage of being able to function intellectually in a hospitable, warm atmosphere of personal complicity (and even vulnerability) that encourages cooperation like nothing else (cf. Campbell's disarmingly honest autobiographical essay, "Perspective on a scholarly career" [1981]).

Evolutionary Naturalism is seen by many today as the most appropriate philosophico-scientific umbrella under which not only students of science with empirical and/or theoretical inclinations but also psychologists and social scientists and even moral and political philosophers can unite to face the tremendous task of (re)constructing a world view that is neither dualistic (Freedman 1997) nor reductionistic (in the sense of "nothing but"-reductionism) or scientific, while yet allowing to avoid the intellectually suicidal and practically laming deadlock of postmodernism.¹ Campbell's variety of Evolutionary Naturalism turns out to be not only remarkably coherent; it also resonates surprisingly well with many of the nicer philosophical developments today (see, e.g., Azevedo 1997; Callebaut 1993).

In *Built for speed, not for comfort: Darwinian theory and human culture*, the ecologist Pete Richerson and the anthropologist Bob Boyd—the co-authors of the widely acclaimed book *Culture and the Evolutionary Process* (1985)—reflect on the obvious difficulty of fleshing out a satisfactory theory of the evolution of human behavior along Darwinian lines. Darwin's original naturalistic project (in the philosophical sense of "naturalism") to minimize qualitative differences between humans and other animals, based as it was on a flawed theory of inheritance, failed utterly. Paradoxically, his insistence of the inheritance of acquired variation—the hallmark of human cultural evolution—made his account more plausible in the human than in the nonhuman case! Richerson and Boyd vindicate Campbell's path-breaking work on BVS (blind-variation-and-selective-retention) as an epochal attempt to fill the major gap in evolutionary theory that Darwin left. They argue that human-scale societies may have evolved because the peculiar properties of the cultural inheritance system lend themselves to group selection, giving gene selec-

tion a difficult time "correcting" the situation.

Anthropologist Rik Pinxten in *Donald Campbell on cultural relativism* and sociologist of science Sal Restivo in *In the wake of the winnower: Donald T. Campbell and the sociology of objectivity* recall their personal interactions with Don and probe the potential and limitations of the "push and pull" attitude (Pinxten) of this convinced ontological realist towards cultural, linguistic, and moral relativism. Pinxten shows how Campbell's initial path-breaking cross-cultural work on perception and language learning finds its abstract correlate in his later systems ontology and epistemology, which allows to give a new respectability to cultural relativism as "one of the most messy and depreciated attitudes in social science research." Restivo reviews the various ways in which the sociology of science can be epistemologically relevant, and defends a critical sociology of science in opposition to Campbell's "strong program" that contrasted an "immature" sociology to the more mature physical and biological sciences.

Pragmatic eliminative induction: Proximal range and context validation in applied social experimentation by political scientist William N. Dunn is a sophisticated contribution to the methodology of social experimentation. Eliminative induction of rival hypotheses representing "threats to validity" (Campbell) builds on John Stuart Mill's normative logic of causal reasoning and is the distinctive feature of Campbell's methodology of quasi-experimentation. It permits a critical examination of social systems contingencies which cannot be directly managed by the experimenter, which is not (usually) necessary when conducting a fully randomized laboratory experiment. Dunn argues that it is not necessary to restrict pragmatic eliminative induction to the identification and testing of *some* rival hypotheses—as called for by Campbell—but possible to estimate the likely range of plausible rival hypotheses which, in specific sociotemporal contexts, may be invoked to challenge an initially favored hypothesis.

As an exercise in what has come to be called "memetics" (after Richard Dawkins), the final paper, *Campbell's blind variation in the evolution of an ideology and Popper's World 3*, returns to the issue of cultural evolution. Arguing that a perfectly self-reproducing "mind virus" together with its self-reproducing social system "is an extremely delicate and vulnerable system." Its author, the philosopher and editor of the "Karl Popper Web" Ray Scott Percival reinforces Campbell's emphasis

on the "blindness" of the evolution of ideas. The "price" (which Percival is reluctant to pay) for this reinforcement is the quest to completely physicalize Popper's three stage scheme of evolution plus the beliefs, expectations, and attitudes undergoing this evolution. Percival also has interesting things to say about the "immunizing strategems" used to preserve ideologies.

Campbell's evolutionary epistemology is only marginally represented in the current issue. A critical evaluation of this aspect of his fine scholarship by fifteen specialists has been presented elsewhere (Callebaut and Riedl 1997).

Konrad Lorenz Institut für Evolutions- und Kognitionsforschung
Limburgs Universitair Centrum (Diepenbeek)
Universiteit Maastricht

NOTES

1. Campbell's "hypothetical, contingent mediational ethics" is one elaboration of normative naturalism. Once the goal — say, of human survival under humane conditions — has been chosen by some community, scientific hypotheses about human nature and the nature of the environment can be used. It is customary — especially in humanistic circles — to reject evolutionary ethics as thoroughly disproven. Campbell disagreed: "[The cultural evolutionary ethics of the last century] were contingent, hypothetical, *scientific* ethics. The fact that they did not provide apodictic grounding for moral norms makes them no worse than the critics, who haven't provided that either" (Campbell in Callebaut 1993:440). The parallel with naturalistic epistemology is complete: "There is no proof that one should want to know. But if one chooses the value of mapping (unobserved) physical reality better and better, then a *hypothetical, mediational, normative epistemology* that is contingent as to our guesses concerning the nature of the world and the problem-solving capacities and tools available to man is available. It is contingent, as science is contingent" (ibid.).

REFERENCES

- Apostel, L. 1987. Evolutionary epistemology, genetic epistemology, history and neurology. In W. Callebaut and R. Pinxten, eds., *Evolutionary Epistemolo-*

- gy: *A Multiparadigm Program*, 211—323. Dordrecht: D. Reidel.
- Azevedo, J. 1997. *Mapping Reality: An Evolutionary Realist Methodology for the Natural and Social Sciences*. Albany: State University of New York Press.
- Boyd, R., and P. J. Richerson. 1985. *Culture and the Evolutionary Process*. Chicago: University of Chicago Press.
- Brewer, M. B., and B. E. Collins. 1981. Perspectives on knowing: Six themes from Donald T. Campbell. In M. B. Brewer and B. E. Collins, eds., *Scientific Inquiry and the Social Sciences: A Volume in Honor of Donald T. Campbell*, 1—9. San Francisco: Jossey-Bass.
- Callebaut, W. 1993. *Taking the Naturalistic Turn, Or How Real Philosophy of Science is Done*. Chicago: University of Chicago Press.
- Callebaut, W., and R. Pinxten, eds. 1987. *Evolutionary Epistemology: A Multiparadigm Project*. Dordrecht: Reidel.
- Callebaut, W., and R. Riedl, eds. 1997. Special Issue in Honor of Donald T. Campbell. *Evolution and Cognition* 3(1) (100 pp.)
- Campbell, D. T. 1975. On the conflicts between biological and social evolution and between psychology and moral tradition. *American Psychologist* 30: 1103—1136.
- Campbell, D. T. 1977. From evolutionary epistemology via selection theory to a sociology of scientific validity (C. Heyes and B. Frankel, eds.). *Evolution and Cognition* 3: 5—38.
- Campbell, D. T. 1979. For vigorously teaching the unique norms of science: An advocacy based on a tribal model of scientific communities. In W. Callebaut, M. De Mey, R. Pinxten, and F. Vandamme, eds., *Theory of Knowledge and Science Policy*, Ghent, Communication and Cognition, 50—69.
- Campbell, D. T. 1981. Perspective on a scholarly career. In Brewer/Collins, eds., 454—501. Reprinted in Campbell (1988).
- Freedman, D. G. Is nonduality possible in the social and biological sciences? Small essays on holism and related issues. In N. L. Segal, G. E. Weisfeld, and C. C. Weisfeld, eds., *Uniting Psychology and Biology: Integrative Perspectives on Human Development*, 47—80. Washington, D. C.: American Psychological Association.
- Hooker, C. A. 1995. *Reason, Regulation, and Realism: Towards a Regulatory Systems Theory of Reason and Evolutionary Epistemology*. Albany: State University of New York Press.
- Overman, E. S. 1988. Introduction: Social Science and Donald T. Campbell. In D. T. Campbell, *Methodology and Epistemology for Social Science: Selected Papers* (ed. E. S. Overman), vii—xix. Chicago: University of Chicago Press.