



Heredity is an Open System: Gregory Bateson as Descendant and Ancestor

Author(s): John Tresch

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Heredity is an open system

Gregory Bateson as descendant and ancestor

**JOHN
TRESCH**

With a BA in anthropology from the University of Chicago (1995), John Tresch is a PhD candidate in the Department of History and Philosophy of Science at Cambridge University and élève at the Ecole Normal Supérieure, Paris. He is working on a cultural history of nineteenth century Paris that will situate Baudelaire's translations of Edgar Allan Poe in the context of Auguste Comte's Religion of Humanity and other contemporary accounts of science and society.

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1. For example, in a letter to Malinowski in 1936, he described the approach of *Coral Gardens and Their Magic* as 'a hopeless muddle out of which simple scientific generalizations can never come' (in Stocking 1996:424).

2. In the Epilogue to *Naven*, Bateson suggests 'rhizome' instead of 'organism' as a more felicitous metaphor for the 'infinitely proliferating and ramifying' community, as 'something which continually divides and sends out offspring' (p.249). The concept of 'plateau' appears in the Bali work, in which the rapid rise and sudden denouement of Western climactic structure is contrasted with that of the Balinese, who focus upon the attainment of planes of consistent intensity, or plateaux.

3. David Bloor, 'Whatever Happened to Social Constructiveness?', paper presented 10 August 1998, Torres Strait Centenary Conference, St. John's College, Cambridge.

This paper, in slightly different form, was presented as part of the Torres Strait Centenary conference, held at St. John's College, Cambridge, 10-12 August 1998 (see report in A.T., October 1998). Several of the conference's participants lamented the gulf that grew between anthropology and psychology in the decades after the expedition. Bateson's methodologically diverse approach was suggested as a possible alternative trajectory for British social anthropology, had functionalism not eclipsed the work of Rivers and Haddon. What follows, then, is an introduction to and unapologetic advertisement for Bateson's writings, which are too often neglected for various reasons. Principal among these are the diversity of his references, his failure to claim an identifiable disciplinary identity, and the New Age thought with which he is often associated — to what I imagine would be his dismay. The article is intended for readers whose only exposure to Bateson has been through scattered, decontextualized writings; it aims to make clearer where he is coming from, and to suggest some of the directions in which his thought, at least as relevant today as when it first appeared, has been and may yet be taken.

I'd like to begin with a quote from Samuel Butler's book from 1903, *The Way of All Flesh*. The narrator wonders whether the hero deserves any praise for his sudden success in fulfilling a charitable duty. Since Ernest Pontifex was born into a line of talented people under privileged circumstances, should he really be given the credit for achieving much? The narrator concludes, however, that 'A man is not to be sneered at for having a trump card in his hand; he is only to be sneered at if he plays his trump card badly' (Butler: 319).

As the son of William Bateson, the dynamic reformer of St. John's College and the major advocate of Mendelian genetics in England and world-wide, Gregory Bateson began with many trumps in his hand. In this conference we are questioning the meaning of the legacy of the Torres Strait Expedition, of which Bateson is also an inheritor. Bateson continued the expedition's interest in descent and adaptation, in their biological, sociological and psychological dimensions, a holism that distinguished him from his contemporaries who accepted more willingly the new splintering, or schismogenesis, of the interests of the Torres Straits researchers.

Thus Bateson, as an object of study for intellectual history, is good to think with. His case is unique and important, as his theoretical systems stand at the point of intersection of at least four major lines of intellectual genealogy. The first is the tradition of Cambridge natural history that his father for a time embodied; second, the combination of experimental psychology, and physical and social anthropology that is the focus of this conference; third, Boasian culture and personality studies, partly thanks to his close interaction with Margaret Mead; and finally, cybernetics. In keeping with Bateson's own arguments, I'd like to consider intellectual descent, and the disciplinary gene pools to which it can be traced, as open systems.

Bateson consistently opposed determinism. To return to Butler's metaphor, the version of Darwinism they both challenged attributed an organism's fitness to the 'luck of the draw'. 'Adapt' was a verb only used in the passive: An organism either was or was not adapted to its environment; the organism *itself* did not adapt. Similarly, Bateson's contemporaries in anthropology, especially Radcliffe-Brown, saw the individuals of a society as occupying fixed positions and performing set functions, roles which replicated themselves over generations. To understand society, one only needed to know the comparative but unchanging relations between the different players and the rules of the game.

Bateson found in Butler not only insightful satires of the Victorian educated classes, but a welcome critique of the received wisdom of Darwinian determinism. As the quote suggests, simply to describe the make-up of the different hands at the card table, with the assumption that everything has already been played out once the hands have been dealt, is to miss the entire point of the game.

Bateson's intellectual trajectory was far from a passive and unreflective perpetuation of his intellectual stock. His work stands as a record of ongoing experiments, combinations, reshufflings, bastardizations, starts and stops. Although he avoided enclosure within any single discipline, the 'hybrid' theories he presented were not, to use one of his favourite terms of abuse, a muddle¹; rather, Bateson's arguments sought always a greater clarity. While he placed an emphasis on haphazardness, play, and even faith and intuition, such moments were part of a larger dialectic of 'rigour and imagination'. Playing upon the differences between formalization and process, or crystallization and randomness, Bateson sought to transcend other dualisms – mind versus nature, organism versus environment, content versus context, and subject versus object. Like Rivers, he maintained that such topics as meaning, emotion and reflexivity, at times considered antithetical to rigorous science, could be made the subject of formal, empirical and generalizing analysis. By focusing on *interactions* rather than upon *fixed structures* Bateson questioned any study that treated behaviour, innovation or inheritance as a closed system.

Readers familiar with the general assumptions of Malinowski's and Radcliffe-Brown's functionalisms will be struck by the novelty of Bateson's *Naven* (1936), particularly in the self-critical epilogue. That work's perspectivalism, or holism, can also be seen as a modified continuation of the aims and methods of the Torres Straits expedition. His concern with the interaction of multiply defined functions (in *Naven*, he concentrates on three: emotional, intellectual, social-structural) was in keeping with the diverse lines of investigation and approaches of the researchers of 1898. However, where Rivers was convinced of the certainty and efficiency with which his concrete method would provide 'dry facts', Bateson is careful to define each of his explanatory registers as 'points of view', different aspects present in any example of behaviour. To consider these as distinct domains could be useful for gathering

Bateson, Gregory. 1958. *Naven: A Survey of the Problems Suggested by a Composite Picture of a New Guinea Tribe Drawn from Three Points of View*. 2nd ed. Stanford: Stanford U.P., 1958.

—1972. *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology*. London: Intertext.

—1979. *Mind and Nature: A Necessary Unity*. London: Wildwood House.

—and Mary Catherine Bateson. 1988. *Angels fear: Towards an epistemology of the sacred*. New York: Macmillan.

—and Margaret Mead. 1941. Principles of Morale Building. *The Journal of Educational Sociology*. 15: 206-20.

—and Margaret Mead. 1942. *Balinese Character: A Photographic Analysis*. New York: New York Academy of Sciences.

Bateson, Mary Catherine. 1972. *Our own Metaphor: A personal account of a conference on conscious purpose and human adaptation*. New York: Knopf.

Bateson, William and Gregory Bateson. 1928. 'On Certain Aberrations of the redlegged partridges *Alectoris rufa* and *saxatilis*' in *Scientific Papers of William Bateson*, ed. R.C. Punnett. Cambridge: CUP.

Benedict, Ruth. 1934. *Patterns of Culture*. Cambridge, MA.: Riverside P.

Butler, Samuel. *The Way of All Flesh*. 1976 (1903). London: Penguin.

Clifford, James. 1988. *The Predicament of Culture: Twentieth-Century Ethnography, Literature and Art*. Cambridge, MA.: Harvard U.P.

Deleuze, Gilles and Félix Guattari. 1983. *A Thousand Plateaus*. Minneapolis: U. of Minnesota P.

Galison, Peter. 1995. The Ontology of the Enemy. *Critical Inquiry*, Autumn, 178-193.

Haraway, Donna. 1990. *Simians, Cyborgs and Women: The Reinvention of Nature*. London: Free Association.

Harries-Jones, Peter. 1995. *A Recursive Vision: Ecological Understanding and Gregory Bateson*. Toronto: U. of Toronto P.

Heims, Steve. 1980. *John von Neumann and Norbert Wiener: From Mathematics to Technologies of Life and Death*. Cambridge, MA.: MIT Press.

Hutchins, Edwin. 1995. *Cognition in the wild*. Cambridge, MA.: MIT Press.

Latour, Bruno. 1986. *Science in Action*. Cambridge, MA.: Harvard U.P.

Lipset, David. 1980. *Gregory Bateson: The Legacy of a Scientist*. Englewood Cliffs, N.J.: Prentice-Hall.

and assembling data, but this should not mislead us into thinking that a concrete entity like a 'social structure' exists – a misplaced concreteness for which he reproached many anthropologists.

Although Bateson came to ethnography after Rivers' death, the psychodynamic approach Rivers brought to shell-shock victims found an echo in the preoccupations of Bateson – themes that many of his contemporary British anthropologists had abandoned. Also encouraged by his encounter with Mead's cultural determinism and Ruth Benedict's studies of cultural patterns or configurations, *Naven* brought the study of culturally conditioned responses and modes of intellectual and emotional standardization to the fore.

Further, the reflexivity of Rivers' team – as in the comparison of their own responses to those of their subjects, or later, in the Rivers-Head experiments on nerve responses (Schaffer 1994) – was also central to Bateson's work. This emphasis increased over the course of his career: not simply did he consider the impact of his presence and prejudices upon what he was observing, but his own thought served as something to reflect upon. He continually returned to earlier analyses, reworking examples and anecdotes (from New Guinea, Bali, psychological clinics, Cambridge and the war) to suit the requirements of a new setting. For instance, questions of descent and adaptation were as central to his first printed work – an article co-authored by his father on variations in partridge feathers (Bateson and Bateson 1928) – as they were to his last – *Mind and Nature: A necessary unity* (Bateson 1979) and *Angels fear: Towards an epistemology of the sacred*, co-authored by his daughter, the linguist Mary Catherine Bateson (Bateson and Bateson 1988). These reflexive reworkings served as examples for his own analysis of learning, evolution, and inheritance.

The emphasis on holism, reflexivity and emotions reveals a continuity with the interests of the Torres Strait researchers. Yet the temporality that Bateson introduces in *Naven* opposes him to Rivers' diffusionism, as well as to Radcliffe-Brown's functionalism. According to George Stocking (Stocking 1984:143-156), the break between these two dominant figures in early 20th century English anthropology occurred around 1912. Rivers claimed that the co-existence of totemism and exogamy among Australian tribes was the result of the mixing of two historically distinct peoples; Radcliffe-Brown, on the other hand, saw the two components of Australian society as part of a single functional whole. Unconcerned with its origin, he was simply interested in its functioning.

Bateson's emphasis on process provides a temporality that is in a sense between these two. Unlike Rivers, he is not interested in 'what happened' to produce the situation that now exists; yet unlike Radcliffe-Brown, the relative stability of a social system is not a starting assumption, but instead, something to be explained. The appearance of fixed social roles or groups, an untroubled political regime, or a 'steady state' as in Bali, were the product of a 'dynamic equilibrium that is always changing', in which conflicting forces keep each other in check and may cancel each other out. Making the basic unit of analysis the interaction, the temporality is neither historical nor that of the 'ethnographic present'. Rather, the analyst (just like the social actor) is faced with a series of unfolding, open-ended events and situations.

The culture and personality studies of the Boasians, like structural-functionalism, have been criticized in the name of time, history and difference. Yet by focusing

on the ways in which specific character types, emotional responses and modes of thought are encouraged and produced, Bateson did not treat 'pattern' as a fixed, homogeneous or encompassing 'configuration', as Ruth Benedict arguably did. His usage was rather closer to Wittgenstein's treatment of 'forms of life'; both Benedict and Wittgenstein's concepts derive from Spengler's *Lebensgestalt*. From the level of culture contacts and international relations, to class and gender divisions, down to teaching methods and bodily techniques and, ultimately, to genetic encodings, Bateson considered the characteristic patterns formed by the elements of a system as habitual, ongoing but ultimately variable interactions. These interdependent *habits* were as rigid (or as alterable) as the 'rules' of a language game, as investigated in Wittgenstein's proposed 'natural history of mankind'.

The study of the characteristic ways in which a society incites and sanctions different emotions continued in Bateson and Mead's work in Bali – which refined the usage of film for ethnographic research, first used in the Torres Strait. Later, similar 'national character studies' were commissioned as part of wartime mobilization, as in Bateson's pioneering works of visual anthropology, including an article that compares the iconologies of Nazi and Soviet propaganda films, focusing not only on recurrent images and themes, but on the climactic structure of each (in Mead and Métraux 1953). The work in Bali, both the stills and the films, was a milestone for ethnographic film-makers. Yet Bateson's wartime film analysis, carried out under the auspices of New York's Museum of Modern Art, is innovative in a different way. Studying the ways that people use the camera to make films of *themselves* opened another important line for visual anthropology.

These analyses of the ways in which cultural performances provide basic narrative structures, a rhythm, tempo and emotional tenor, were of interest to the US government; the appeal of an analysis of those aspects of American national character that could be played upon to improve morale – or, conversely, the culturally-specific algorithm that, once applied, would demoralize an enemy population – was clear. Yet Mead and Bateson's involvement in such 'applied anthropology' led to ethical dissonance. In a joint article from 1941 (Bateson and Mead 1941), it is difficult for the present-day reader to distinguish between the methods of the praiseworthy 'morale builder' and the 'manipulative propagandists' they believe themselves to be opposing. Finding themselves obliged to condemn unequivocally the beliefs and practices of the Axis nations, while at the same time participating in the very kinds of social manipulation for which those nations were condemned, Bateson and Mead were compelled to rethink the relations between social science and social policy.

Interestingly, their new perspectives rejected the means–ends logic of social engineering in much the same way that Bateson rejected the determinism of both functionalism and Darwinian evolution. In 1942, Mead advocated 'recognizing the importance of including the social scientist *within* his experimental material' and 'working in terms of values which are limited to defining a *direction*' (Mead 1942). Likewise, Bateson later discussed learning as an open-ended process, in which one should 'look for the "direction" and "values" implicit in the means, rather than looking ahead to a blue-printed goal' (Bateson 1972:160).

Immediately after the war, Bateson and Mead participated in the meetings of the Macy group, in which scientists gathered to discuss what was emerging as a



Gregory Bateson, in the herringbone tweed favoured by male American academics of his generation, at the age of 44, around the time of his giving up his work towards the end of World War 2 for the American Government in the Office of Strategic Services.

Marcus, George. 1985. A Timely Rereading of Naven: Gregory Bateson as Oracular Essayist. *Representations*. 12:66-82.

Mead, Margaret. 1942. 'The Comparative Study of Culture and the Purposive cultivation of Democratic Values' in *Science, Philosophy and Religion, Second Symposium*, New York: Harper & Row.

Mead, Margaret and Heinz Foerster, eds. 1949-53. *Cybernetics: Circular Causal*

potentially unified approach to many fields under the name of 'cybernetics'. The influence of these discussions on subsequent research in numerous fields, among them cognitive science and information theory and technology, cannot be overestimated. Bateson quickly translated his anthropological and psychological studies into the new idiom: cybernetics' focus on different logical levels, circular causality, and its analysis of information, communication, systems and feedback, all played a crucial role in Bateson's later work – as witnessed by the 1958 epilogue to Naven, a 'feedback' to the original epilogue's 'self-corrections'.

But while Norbert Wiener's attempts to redeem these wartime technologies occasionally veered disturbingly close to the Manicheanism he sought to oppose (see Galison 1994), Bateson's post-war work questioned the obsession with 'control' that seemed to drive the other cyberneticists. For instance, John von Neumann, whose *Theory of Games* is still a key text for management and policy analysts, at one point 'proved' mathematically that the best strategy for winning the arms race was a pre-emptive all-out nuclear attack on the Soviet Union (Heims 1980).

and Feedback Mechanisms in Biological and Social Systems: Transactions. New York: Josiah Macy Jr. Foundation.

Mead, Margaret and Rhoda Métraux. 1953. *The Study of Culture at a Distance*. Chicago: U. of Chicago P.

Pickering, Andrew. 1995. *The mangle of practice: time, agency and science*. Chicago: U. of Chicago P.

Schaffer, Simon. 1994. *From Physics to Anthropology – and Back Again*. Prickly Pear Press Vol. 3. Cambridge: Prickly Pear Press.

Slobodin, Richard. 1978. *W.H.R. Rivers*. New York: Columbia U.P.

Spengler, Oswald. 1926. *The Decline of the West*. Translated by Charles Francis Atkinson. London: Allen & Unwin.

Stocking, George W. Jr. 1996. *After Tylor: British Social Anthropology 1888–1951*. London: Athlone.

—ed. *History of Anthropology Vol. 4: Malinowski, Rivers, Benedict and Others: Essays on Culture and Personality*. Madison: U. of Wisconsin P., 1986.

—Radcliffe Brown and British Social Anthropology' In Stocking ed., *HOA Vol. 2: Functionalism Historicized. Essays on British Social Anthropology*. Madison: U. of Wisconsin P. Strathern, Marilyn. 1988. *The gender of the gift: problems with women and problems with society in Melanesia*. Berkeley: U. of California P., 1988.

Traweek, Sharon. 1988. *Bentimines and lifetimes: the world of high energy physicists*. Cambridge, Mass.: Harvard U. P.

Von Neumann, J. and O. Morgenstern. 1944. *Theory of Games and Economic Behavior*. Princeton: Princeton U. P.

Wagner, Roy. 1974. *The Invention of Culture*. Chicago: U. of Chicago P.

—1986. *Symbols that Stand for Themselves*. Chicago: U. of Chicago P.

Wiener, Norbert. 1948. *Cybernetics: Control and Communication in the Animal and the Machine*. New York: J.Wiley & Sons.

Wittgenstein, Ludwig. 1953. *Philosophical Investigations*. Translated by G.E.M. Anscombe. Oxford: Blackwell.

—1979. *Remarks on Frazer's 'Golden Bough'*. Edited by Rush Rhees; English translation by A.C. Miles, revised by Rush Rhees. Retford: Brynmill, 1979.

Yans-McLaughlin, Virginia. 1986. 'Science, Democracy and Ethics: Mobilizing Culture and Personality for World War II' In Stocking ed. 1986 (184–217).

As I've argued, Bateson, along with Mead, sought forms of intervention that would be guided by values, or a general direction, rather than a fixed goal or endpoint. The attempt to bring about a specific goal usually wound up making matters worse. The 1968 conference that led to the publication of *Steps to an Ecology of Mind*, sought

a formal description of the ways in which human planning and applied science tend to generate pathology in the society or in the ecology or in the individual (in M.C. Bateson 1972:31).

As a complement to the value he placed on clarity and rigour, Bateson emphasized the importance of random, stochastic processes – such as trial and error or brainstorming. Faced with conflict or paradox, the organism may be forced into a pathological adaptation, as in the schizophrenic's double bind, or may indeed become aware of the recurrence of a pattern and stumble upon a creative solution.

This unguided play is crucial to learning, one of the ways individuals adapt to their environments – or more precisely, one of the ways in which the system formed by an organism and its environment co-evolve. In a stance that did not rule out the possibility of Lamarckian inheritance of acquired characteristics, Bateson held that individual adaptation was a crucial and neglected unit in evolutionary change. To fit such arguments to a world marked by models provided by Mendel and Bateson Sr., as well as by Crick and Watson, he held open the possibility of a dynamic interaction between the genetic code and adaptations undertaken in a single lifetime.

It would appear that in learning, when the solution of the given problem has been passed on to habit, the stochastic or exploratory mechanisms are set free for the solution of other problems, and it is quite conceivable that a similar advantage is achieved by passing the business of determining a somatic characteristic to the gene-script (Bateson 1972:254).

Bateson suggests that to enable further random explorations within the environment, well-established habits become more deeply embedded; the most efficient information storage mechanism may be the gene. Rather than see changes in the phenotype as the result of random mutation, or dumb luck, he argued for the cunning of nature — whether at the level of the individual, or at the level of any of the wider systems he characterized as 'mind'.

This focus upon system and interdependence resonates with the ontology of cybernetics, in which it is assumed that all is information: there is neither matter nor energy, simply meaningful differences. Bateson ceased to speak of objects, speaking rather of 'object-events', which are what they are by virtue of their location in interlocking systems of various orders, as when he speaks, not of a lumberjack at work, but of 'the system tree-eyes-brain-muscles-axe-stroke-tree'. Thus cybernetics recapitulates Butler, who argued in 1903 that:

In the end we shall be driven to admit the unity of the universe so completely as to be compelled to deny that there is either an external or an internal, but must see everything as both external and internal at one and the same time, subject and object (Butler: 327)

Bateson eventually characterized any system, human, animal, organic or inorganic, that shows a resistance to entropy – that is, any system in which order appears – as 'mind'. In his later years, he discovered that to describe the interweaving of such systems, their logical relations and interdependencies and the intricate ecologies thus formed, was the project that he had been pursuing all along. □

It would be wrong to view Bateson's continuation of certain of the concerns and approaches of the Torres Strait expedition as a survival or vestigial organ ill-adapted to the disciplinary environment that emerged after the World Wars. The 'fitness' of Bateson's work has been repeatedly demonstrated, especially by contemporary authors who, as in Butler's quote, are forcing us to rethink relations between subject and object. To conclude, I'll mention some of these offspring, who demonstrate their fidelity to the ancestor by failing to resemble him.

Bateson's work enjoyed a brief vogue in France in the 1970s. The work that perhaps bears the most visible imprint is Deleuze and Guattari's *A Thousand Plateaus*, whose title, as well as one of its central concepts, the *rhizome*, derive from Bateson's writings,² which could themselves perhaps fall under that book's slogan: to 'arrive at the magic formula we all seek – PLURALISM=MONISM – via all the dualisms that are the enemy, an entirely necessary enemy, the furniture we are forever rearranging' (Deleuze and Guattari 1983:20). Closer to home, the studies of Melanesian society undertaken by anthropologists Roy Wagner and Marilyn Strathern can be placed in continuity with many of Bateson's concerns — in their explorations of the culturally variable relations between 'nature' and 'culture', and their deft tacking between the foreground and background of self and other, necessity and invention.

The last years of Bateson's life were spent in California, where as guru-in-residence he had a decisive impact on the development of UC Santa Cruz and, arguably, on the work undertaken there, in the department of History of Consciousness, by James Clifford and Donna Haraway.

Finally, Bateson's extension of the cybernetic model of intelligent machines to social systems – or more interestingly, to systems combining humans, nature and technology in increasing proximity and interdependence – as well as his reflections on the processes of science and the nature of human knowledge and action – have found stimulating echoes throughout the field of the 'anthropology of science': in the thickly descriptive ethnography undertaken by his student, Sharon Traweek; in Haraway's strident 'cyborg manifesto'; in Edwin Hutchins' study of the 'cognitive system' of a US Naval boat; in the 'mangle' of Andrew Pickering and the 'hybrids' of Bruno Latour.

Far from being a lost, withered branch on the human sciences' family tree, Bateson's work is at the root of many of the most interesting developments in the study of human behaviour, development and knowledge in the last decades. Describing a forgotten line of research proposed in the work of another descendant of Rivers, F.C. Bartlett's *Remembering*, David Bloor has asked, 'Whatever became of social constructiveness?'³. One answer may be that Bateson wound up with it, and passed it along, with modification, to many who are currently contributing their own mutations to the strain.

Bateson was interested not so much in starting points and ending points, as in everything between them. It's not the makeup of the hands that are first dealt, nor the final ranking among the players that is interesting, but the unpredictable succession of moves between them. And, perhaps, the possibility of recognizing and making explicit the rules of the game, in order to play differently. □