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GREGORY BATESON

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1. Intellectual biography

Gregory Bateson was born in Grantchester, England, on May 9, 1904. He was the son of William Bateson, a prominent natural scientist who, with his Dutch colleague de Vries, rediscovered Gregor Mendel's work. William Bateson forged the word 'genetics', and named his son Gregory in honor of the Austrian monk. First trained in biology at Cambridge, Gregory Bateson was all his life interested in the problems of pattern and order in the natural world. Those questions were to him the major challenge of science. He never held any academic tenure, but left an impressive amount of work. From his father, Bateson inherited his fundamental attitude towards science: "[my father] had always a hankering after the problems of pattern and symmetry, and it was this hankering and the mysticism that inspired it that I picked up and which, for better or worse, I called 'science'. I picked up a vague mystical feeling that we must look for the same sort of processes in all fields of natural phenomena" (Bateson, 1941:74). But at that time biology was confined within the Darwinian orthodoxy; it was certainly not open to studies on patterns and order, so Bateson turned to anthropology: "But even though today I know that all immanent biological formalisms are, in some sort, ideas, Darwinian theory prevented me from even the beginnings of such a heresy. (Had I seen this clearly, I would never have left zoology for anthropology)" (1978:194). In 1925 he left England for a Baining tribe in the Sepik river valley, in New Guinea, with the project of studying the "feeling of culture", but he was soon appalled by the paucity of conceptual tools in anthropology. From 1928 to 1930 he did fieldwork among the Iatmul, again in the Sepik River valley.

There he met Margaret Mead (who was later to become his wife), and her husband Reo Fortune, who came to visit him in the field. On the basis of his New Guinea work Bateson wrote *Naven*, a book “about the nature of explanation”, which fell flat in the anthropological field when first published in 1936. An unusual piece of ethnography, *Naven* is an illustration of Gregory Bateson’s belief in the unity of the living world. His method (the description of a unique ceremony, the ‘naven’) is similar to the *specimen* descriptive method used in the natural sciences, and the conceptual tools he coined to describe the social organization of the Iatmul were inspired by the processes of segmentation of animals observed in zoology (1941:74). Actually, one can find in *Naven*, although muddled, most of the motifs that will later become central to Bateson’s thinking. But the most original concept of *Naven* is unquestionably the *schismogenesis*. Schismogenesis “is a process of interaction whereby directional change occurs in a learning system” (1978:196). With the concept of schismogenesis Bateson came close to cybernetics and its positive feedback loops; it allowed him to understand that “Competition, spectatorship, domination, and the like, were primarily words for potentially progressive patterns in relationship — not unipolar psychological words for ‘roles’” (1978:197). Such a statement illustrates Bateson’s position about behavior: that it ought to be explained not by individual psychology, but by the formal description of the relationships, of which the individual behavior is only a part — the priority of the relationships over the *relata*. With the concept of schismogenesis, Bateson didn’t know that he had identified a process typical of living processes. As he will state many times later: “Billiard balls do not respond to each other’s responses, which is the essential component of schismogenesis, armaments races, the creation of tyrants and willing slaves, performers and spectators, and so on” (1978:196) and, we should say, of the evolution of species.

When *Naven* appeared, Bateson was in Bali with Margaret Mead, where they realized the very first piece of work in visual anthropology. *Balinese Characters*, published in 1942, remains, with its 970 precisely commented photographs, a monument (and a model) for visual anthropologists today. The Bali fieldwork was aimed at studying how people “incorporate” their culture, and it was clear for Bateson that people (or, more precisely, babies and children) did not only learn “responses” but rather “aperceptive habits”. He developed this idea in a 1941 paper that was first a comment on a Margaret Mead article, and was further re-edited under the title “Social Planning and the Concept of Deutero-learning”. Deutero-learning, or second order learning, is defined as the acquisition of “a habit of looking for contexts and

sequences of one type rather than another, a habit of ‘punctuating’ the stream of events to give repetitions of a certain type of meaningful sequence” (1972a: 166). Because of deuterio-learning, the organisms (and people) learn to discern *contexts*. In this paper, one can also notice Bateson’s long-lasting distrust of the premature use of scientific tools, as well as the prefiguration of his later interest in the problem of conscious purposes.

In 1942 Bateson was invited, with Margaret Mead, at an interdisciplinary conference on ‘cerebral inhibition’. There he met Norber Wiener and Julian Bigelow, from the Massachusetts Institute of Technology, the physicist Rosenblueth, the mathematician John von Neumann, the neurophysiologist (and mathematician) Warren McCulloch, the psychologist Lawrence Franck, the psychoanalyst Laurence Kubie, and the hypnotherapist Milton Erickson. Except for Erickson, those researchers were to become the core of the famous five Macy Conferences’ group on ‘teleological mechanisms’, *i.e.* Cybernetics. The word ‘cybernetics’ itself was coined by Wiener in his 1948 book *Cybernetics: on control and communication in the animal and the machine*.

Bateson was immediately enthusiastic about cybernetics. He saw in this emerging discipline a solution to the old problem of teleology; he recognized the dynamic of his *schismogenesis* in the runaways generated by positive feedback loops. He also found in the stabilization virtues of negative feedback loops the concept he was lacking when he had tried to explain why the Iatmul society didn’t split into parts in spite of schismogenesis. Cybernetics, and particularly the simple model of the steam engine, became one of Bateson’s favorite examples when he needed to illustrate the ‘mental’ characteristics of a system. Such a system as the steam engine is, first of all, operated by *information* and circular causality. The definition of information as “a difference that makes a difference” came late in Bateson’s career (cf. Bateson 1970a), but it is already implicit in his use of cybernetics for the description of social and natural phenomena.

In 1948, Bateson left New York for California. He was invited by the psychiatrist Jurgen Ruesch to do research on ‘communication’ at the Langley Porter Hospital. *Communication: the social matrix of psychiatry* (1951), co-authored by Ruesch and Bateson, inaugurated for Bateson more than 15 years of research on human and animal communication. In this book, Bateson applied for the first time the Theory of Logical Types to communication: he put forward the idea of a hierarchical organization of communication. This idea was to be fully developed in Gregory

Bateson's further and well-known research (with B. Fry, J. Haley, D. Jackson and J. Weakland) on "the role of the Paradoxes of Abstraction in Communication" (1953-1959). This work led to the double bind hypothesis and the publication in 1956 of "Towards a Theory of Schizophrenia".

In their 1956 paper, the authors developed the idea that the symptoms of schizophrenia were the product of some contingencies of relationship to which they were adapted responses. Those very special contingencies of relationship were paradoxical and were labeled 'double bind'. It was hypothesized that an individual living all his life in a double bind context would see his/her metacommunicational ability destroyed. As the very first attempt to understand schizophrenia as a pathology of communication, the double bind paper immediately had a resounding success. But the 1956 paper was imperfect in many ways; it was frequently misunderstood and, most of all, it led to the belief that a 'double bind' was necessarily noxious. To Bateson however, a double bind was a relational pattern much more widespread: it was a 'matrix' generating not only schizophrenia but also humor, creativity and evolution (cf. Bateson 1978).

In 1959 the Mental Research Institute of Palo Alto was created to develop the implications of the double bind theory and the general systems theory for psychotherapy. Haley, Weakland and Jackson went to work there. Bateson continued working on double bind theory until 1962, when John Lilly invited him to be the director of his dolphin laboratory in the Virgin Islands. At that moment, Bateson was more and more convinced that for the next advances in the study of logical typing in communication, he should work with animal material. But he stayed only one year at Lilly's laboratory; as he said himself: "I am not cut out to administer a laboratory". In 1963 he received a Career Development Award under the National Institute of Mental Health, and he moved to the Oceanic Institute of Hawaii, invited by Taylor Pryor of the Oceanic Foundation to work on cetacean and other problems of animal and human communication. There he refined his logical typing of learning and communication, worked on coding and developed his conception of animal communication as an assertion on the nature of the relationship between the animals. It is also in Hawaii that Bateson wrote the last part of *Steps to an Ecology of Mind*, which is concerned with 'conscious purposes' and their moral and aesthetic impact on natural systems (cf. Bateson 1991b).

Bateson came back to California in 1972, where he joined the faculty of the University of California at Santa Cruz. He also came back to his very first interest in

biology and evolution theory (which he never completely abandoned) and worked at a synthesis of his thinking about nature, order and patterns. This ended in *Mind and Nature. A necessary unity*, the centerpiece of Bateson's work, first published in 1979. The whole book is an attempt to build a bridge between natural and social processes.

Bateson died on July 4, 1980, at the Zen Center of San Francisco, while he was working on a new book with his daughter Mary Catherine. This book appeared in 1987 under the title *Angels Fear*.

2. Central tenets in linguistics and pragmatics

In the course of his research on communication, Bateson was above all interested in pragmatics. But here the word 'pragmatics' is to be understood in a very large sense, concerning not only the use of language by humans, but also animal communication and the creation of forms and order in nature as well as in social systems. According to Bateson the forms were achieved, in nature as well as in social systems, by some use of *ideas* or *injunctions*.

This central interest in pragmatics is present in the very definition that Bateson gives for information: "in fact, what we mean by information — the elementary unit of information — is a difference which makes a difference" (1970a: 453), or "news from a difference". (Defined as such, information could be a 'building block' for the behavioural sciences, or "a fiction that would do for psychiatry what the Newtonian particle did for physics", Bateson, 1977a). According to Bateson, in the world of communication, organisation, etc., 'effects' are brought about by differences (1970a: 452).

In his own research, Bateson used his definition of information to characterise mental systems: "A difference is an elementary idea. It is of the stuff of which minds are made. [...] And the moment you set up your hard science circuits in such a way as that difference will make a difference, then the thing you have created — it may be out of hardware, it may be out of God knows what — the thing which you have created begins to show characteristics of mind. It operates with ideas." (1973:162). An important part of *Mind and Nature* is devoted to the description of six Criteria of Mental Process, among them the second one is "the interaction between parts of mind is triggered by difference" (1979:101). In "The Cybernetics of 'Self': A Theory of Alcoholism" (1971), the concept of information as "a difference which makes a

difference” is the starting point of a cybernetic description of the ‘self’ and in his later work, Bateson saw in the difference the ‘psychological input’. In this context he often referred to the Weber-Fechner law, which establishes that perception works with ratios instead of absolute values — and the difference *is* a ratio: it has no dimension. Finally, Bateson relied on his previous work on the nature of the difference to argue for an epistemology which is a branch of natural history (cf. Bateson 1977b).

2.1 Metacommunication and The Logical Typing of Communication

At the very basis of Bateson’s work on communication, one finds the Theory of Logical Types, by Whitehead and Russell. Bateson was introduced to the theory by Norbert Wiener. Reference to this logico-mathematical theory, devised to solve the old problem of the Epimenides’ paradox, first appears in *Communication, the social matrix of psychiatry* (1951). It is later referred to in a research report, “A Theory of Play and Fantasy” (1955), and it is explicitly stated as the theoretical background of the double bind theory in the first paragraphs of “Towards a Theory of Schizophrenia”. According to the authors, “the central thesis of the theory is that there is a discontinuity between a class and its members. The class cannot be a member of itself nor can one of the members be the class, since the term used for the class is of a different level of abstraction — a different Logical Type — from terms used for members.” (Bateson *et al.*, 1956:202). The theory also states that logical paradoxes appear when logical types are confused. In a long and technical paper often referred to (“The Message ‘This is play’”, 1956), Bateson applies in detail the Theory of Logical Types to animal communication, and examines the paradoxical nature of play. From that on, the logical typing of communication will be a given in his work.

Play is a very clear instance of the logical typing of communication; others are crime, threat, ritual, and so on. All are categories of behaviour, which are of a different level of abstraction than the actions they are made of. Words such as play refer to the context or the frame of the behaviour. But the occurrence of play also means that there are actions that label other actions, it is an evidence of metacommunication: “Now, this phenomenon, play, could only occur if the participant organisms were capable of some degree of meta-communication, *i.e.*, of exchanging signals which would carry the message ‘this is play’.” (1955a: 179-180).

2.2. *The double bind hypothesis*

Originally, the research on “The role of the Paradoxes of Abstraction in Communication” (1953-1959) was not specifically aimed at ‘explaining’ schizophrenia. It was partly because it was meeting in a psychiatric ward, partly because of the origin of its funding that the Bateson’s group turned more specifically to schizophrenia. According to Bateson, the “first definite step” to the formulation of the double bind hypothesis occurred in 1952, when he “discovered” the paradoxical nature of play while observing monkeys playing at the San Francisco Zoo. Fundamentally, a ‘double bind’ is a paradoxical relational pattern. It is, in its simplest form, the situation of a child being punished for certain actions, and being punished for showing that he knows he is going to be punished. Simply stated, the double bind is an experience of “being punished precisely for being right in one’s own view of the context.” (1960:236).

In their famous paper, the authors of “Towards a Theory of Schizophrenia” hypothesise that, if a child is permanently living in a relational context shaped as a double bind, he will develop as an adaptive response the full symptomatology of schizophrenia. First of all, his/her ability to metacommunicate and to identify the logical type of messages will be destroyed. The authors observe that schizophrenics misunderstand the literal for the metaphoric, they have hallucinations, that is to say fantasmatic productions which are not recognized as such by the brain, and in the domain of social relationships they are unable to ascribe a context to any particular utterance. For example if, in a restaurant, a waitress comes and asks the patient “What can I do for you?” he might be unable to answer the question because he doesn’t know how to classify the message: is it a sexual proposal? A threat? A casual remark? To Bateson’s team, those symptoms are evidences of a loss of the ability to metacommunicate in schizophrenia. “That which is attacked is the use of what I have called the ‘message-identifying signals’ — those signals without which the ‘ego’ dare not discriminate fact from fantasy or the literal from the metaphoric.” (1955b: 199).

But those ‘message-identifying signals’, *i.e.*, meta-messages, are also messages about (personal and social) relationships:

Observably, the schizophrenic avoids or distorts anything which might seem to identify either himself or the person whose he is addressing. He may eliminate anything which implies that his message refers to, and is

a part of, a relationship between two identifiable people, with certain styles and premises governing their behaviour in that relationship. (1960:235)

From its first formulation in 1956 until the last contribution of Bateson's group on double bind in 1963 (Bateson et al, 1963), the double bind hypothesis was frequently revised. The authors have often insisted (in vain) that the double bind is not a 'thing' that can be counted, but rather a relational model. One can find a good synthesis on double bind in Sluzki et al (1976).

2.3 Context and deuterio-learning

The double bind theory is closely linked to the concept of context, and the term is used by Bateson as an equivalent of metamessage: "Context of stimulus is a *metamessage* which *classifies* the elementary signal." (1972c: 289). Bateson has in fact a rather loose definition of the context: metacommunication, expectancies about contingencies in the interchange, aperceptive habits, and context, are frequently used one for the other. To understand what he means by 'context' we must come back to the 1942 paper, "Social Planning and the Concept of Deuterio-Learning". There Bateson defines deuterio-learning as the learned habit of punctuating the stream of events in significant sequences. It is the "habits of punctuating the stream of experience so that it takes on one or another sort of coherence and sense" (1942b: 163) *or* "the habit of looking for one or another sort of contextual frame for behaviour". (1942b: 162). But deuterio-learning is not only a synonym for contextual learning; it is also a synonym for what psychologists call the 'character' (an idea already present in *Naven*): "'learning to learn' is a synonym for the acquisition of that class of abstract habits of thought [called] 'free will', instrumental thinking, dominance, passivity, etc." (1942b: 166) *or* "in the language describing relationship many words which are commonly used to describe individuals now become technical terms for systems of contingency in the interchange. Such words as *dependency*, *hostility*, *trust*, and even the names of feelings or emotions such as *fear* and *anger*, can be translated by the formal characteristics of the sequences in which they occur" (1963:130), *i.e.* their context.

At the beginning of "Problems in Cetacean and other Mammalian Communication", we can find a synthesis that shows how 'context', 'contingencies

of the relationship', deutero-learning and the 'character' of the organism are articulated together in Bateson's theory of communication (1966:364).

(1) a relationship between two (or more) organisms is, in fact, a sequence of S-R sequences (*i.e.*, of contexts in which proto-learning occurs); (this is argued and developed in Bateson 1963 and Bateson 1970b);

(2) deutero-learning (*i.e.* learning to learn) is, in fact, the acquisition of information about the contingency patterns of the contexts in which proto-learning occurs; and

(3) the 'character' of the organism is the aggregate of its deutero-learning and therefore reflects the contextual patterns of past proto-learning.

Although deutero-learning is responsible, among human beings, for the incorporation of culture, it is a type of learning that we share with all mammals:

“We are all members of a culture and have been trained in expectations regarding the contingencies of relationships. This training, of course, involves a more abstract order of learning — learning of a higher logical type [...] I call it a 'higher' type of learning because the gestalten with which it deals are larger, but this learning about the contingencies of relationship is in general more archaic and more unconscious than the learning of the single adaptive act.” (1963:129)

2.4 Communication about relationships

Bateson's view of animal communication is that mammalian communication is first of all concerned with relationship: “their discourse is primarily about the rules and the contingencies of relationship.” (1966:367). This is what Bateson calls the μ function of the message, but he had referred to this function in a previous paper: “The wag of the dog's tail which for individual psychology signifies an inner state of the dog becomes something more than this when we ask about the functions of this signal in the relationship between the dog and his master. I want to suggest to you that it becomes an affirmation or a proposal about what shall be the contingencies in that relationship.” (1963:127). It was Warren McCulloch (quoted in Bateson 1963) who pointed out that every message has a report aspect (it is a report on what previously happened) and a command aspect (it is a stimulus for the next behaviour). With the μ function of the message we are again at the centre of pragmatics, since this function is related to the 'command' aspect of a message, while the 'report' aspect is related to the 'signal of state' of the language of individual psychology. In Bateson's ~~thinking~~.

about the comparison of human and animal communication systems: “discussion of the evolutionary and other relationships between the communication systems of men and those of other animals has made it very clear that [...] there is a great deal of resemblance between the codes of kinesics and paralanguage and the codes of nonhuman mammals. We may, I think, state categorically that man’s verbal system is not derived in any simple way from [kinesics and paralanguage].” (1968:411) In the evolution of man, language has not replaced the cruder systems of the other animals. On the contrary, “both kinesics and paralanguage have been elaborated into complex forms of art, music, ballet, poetry, and the like, and, even in everyday life, the intricacies of human kinesic communication, facial expression, and vocal intonation far exceed anything that any other animal is known to produce.” (1968:412).

The old function of animal communication, the exchange of messages about relationship, is achieved in human communication by kinesics and paralanguage (cf. Bateson 1958c). But Bateson has never devised any method to describe those aspects of communication. He insisted on the fact that communication about the relationship must be “carried on by techniques which are relatively unconscious and only imperfectly subject to voluntary control.” (1968:413). Because “falsification of this discourse rapidly becomes pathogenic.” (id.).

2.5 Coding

The last contribution of Bateson to linguistics is his research on coding. But here, he didn’t accomplish more than the groundwork, paving the way for further research. When talking about how information about relationship is coded in mammalian communication, Bateson first distinguishes analogic from digital coding and states that animal communication is of the first type (1966). In a 1967 paper, with as its central question “In what form is information about the psychic integration contained or coded in the work of art?”, he opposes “the ‘arbitrary’ and digital coding characteristic of the verbal part of language [to] the iconic coding of depiction.” (1972b: 133). In “Redundancy and Coding”, a 1968 paper devoted to the problem of coding, Bateson mentions again the iconic coding, but then he describes the *pars pro toto* redundancies as the main coding system in the natural world. He also describes different kinds of relationship between part and whole and concludes that “animal communication is confined to signals which are derived from actions of the animals themselves, *i.e.*, those which are parts of such actions.” (1968:417). Finally, in a later

paper (Bateson, 1975), Bateson mentions some more sorts of coding: evolutionary, holographic, correlative, and ostensive.

In a way, the work on coding was left unfinished. At the end of the sixties, Bateson was more and more concerned with the application of his ideas to political action and ecological problems. When he came back in California in 1972, he turned to a synthesis of his work on Mind and Nature.

3. The influence of Bateson's work on communication studies

The influence of Bateson's work on communication studies is rather diffuse: very few authors have borrowed more than one concept from Bateson, and he is often incidentally referred to. Actually, the most pervasive influence of Bateson's conceptual framework on communication studies is found in the therapeutic field, thanks to the work of Paul Watzlawick, Janet Beavin and Don Jackson who, in 1967, published *Pragmatics of Human Communication. A Study of Interactional Patterns, Pathologies, and Paradoxes*. The book is dedicated to Gregory Bateson, "our mentor and our friend", and it consists of a systematic application of Bateson's ideas about communication in the field of psychopathology and interpersonal communication. The book offered conceptual tools to many therapists who were, at that time, developing new practices around a central idea: an interactional view of human problems — an idea already found in *Naven*. Most of these therapists have later developed their own model for therapy, and founded 'schools'. Today, the numerous therapeutic models that use concepts such as feedback, paradox, complementarity and symmetry, frames and reframing, all bear, through *Pragmatics*, Bateson's influence. Besides, the fate of the double bind theory in the field of psychiatry reveals at least caution, and usually deep misunderstanding (cf. Watzlawick, 1963).²

In the years following its publication, *Pragmatics* was the most cited work of the Palo Alto Group.³ But the conceptual tools it developed never really spread into communication research (cf. Wilder 1979). Certainly, one difficulty with Bateson's work is that while his concepts provide original and powerful intuitions for research, he offers no indication as how to conduct an empirical study. Actually, one must understand that batesonian concepts do not refer to *things*, but to *models*.

Accordingly, the concept of *frame*, and the related notion of communication about frames, i.e. metacommunication, originally coming from the logical typing of

communication, was probably the most used in communication studies, because the researchers were able to translate in their own discipline the batesonian metaphors. In his introduction to *Frame Analysis*, Goffman explicitly refers to Bateson and the paper “A Theory of Play and Fantasy”, stating that he and Bateson share a similar representation of a ‘frame’. The idea of a framing of behavior was also basic to Birdwhistell and Shefflen’s analysis of interpersonal communication, but here, the batesonian model is mixed with Smith and Trager’s descriptive linguistics. In all the subsequent studies in face-to-face interaction, we may thus trace back to Bateson’s work on the logical typing of communication. In the field of ‘non verbal’ communication research that developed in the fifties and sixties, Bateson’s most cited pieces of work are *Balinese Character*, as a pioneer study, and, ironically, an unpublished piece of work: the “methodological introduction”, first chapter of *A natural history of an interview* (Mac Quown, Editor).⁴

On the whole, Bateson’s influence on communication studies is, as we stated above, rather diffuse. The only concepts that had some success in empirical research have been crossbred with the conceptual framework of well-established disciplines. On the other hand, Bateson has profoundly and definitively changed the way of doing therapy, a kind of irony for a man who dared not to touch what he was studying.

Notes

1. The ritualized behavior exhibited by the alpha male in this situation is derived from the behavior of adults weaning puppies.
2. The impact of Bateson on therapeutic models is thoroughly examined in Wittezalet Garcia, 1992
3. The ‘Palo Alto Group’ is the group of researchers who came to work at the MRI in Palo Alto in the sixties, some of them (Haley, Jackson, Weakland) coming from the team which worked with Bateson in the research on *The Role of Logical Paradoxes in Communication*.
4. The book was the result of an interdisciplinary study of a 10 minutes film showing a conversation between Gregory Bateson and a young woman seeking psychological advice for her son. The research group (Gregory Bateson, Ray Birdwhistell, Henry Brosin, Charles Hockett, Norman Mac Quown and Frieda Fromm-Reichman) first met during the summer of 1956, and then only Birdwhistell, Mac Quown and Brosin did sporadically work on it until 1967, when the book was finally written. For more details about the role of Bateson in this research, see Winkin (1981).

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