# GREGORY BATESON: THE CENTENNIAL
# 1904 — 2004

*[11.20.04]*

*ABOUT BATESON*
*by John Brockman with an Afterword by Gregory Bateson*

## Introduction

November 20, 2004 — In 1974, in honor of my friend Gregory Bateson's 70th birthday, I asked him if he would collaborate with me in a book about his work. He agreed the result was *About Bateson*, a volume of original essays about his work and ideas by interesting thinkers in various fields bracketed by my Introduction and his Afterword, both of which follow below.

At that time, Bateson contended that as a result of advances in cybernetics and fundamental mathematics, many other areas of thought have shifted. In *The Evolutionary Idea,* a proposed new book, he planned to gather together those new advances to present an alternative to then current orthodox theories of evolution. This alternative view was to stress the role of *information,* that is, of mind, in all levels of biology from genetics to ecology and from human culture to the pathology of schizophrenia. In place of natural selection of organisms, Bateson considered the survival of patterns, ideas, and forms of interaction,

"Any descriptive proposition," he said, "which remains true longer will out-survive

other propositions which do not survive so long. This switch from the survival of the creatures to the survival of ideas which are immanent in the creatures (in their anatomical forms and in their interrelationships) gives a totally new slant to evolutionary ethics and philosophy. Adaptation, purpose, homology, somatic change, and mutation all take on new meaning with this shift in theory."

Bateson had an endless repertoire of concepts and ideas to talk about. A typical conversation might be about metaphor versus sacrament, schismogenesis, metaphysics, explanatory principles, heuristic versus fundamental ideas, the value of deduction, steady state society, metapropositions, deuterolearning, cybernetic explanation, idea as difference, logical categories of learning, mental determinism, end linkage, and on and on.

While his ideas did take hold in some fields (schizophrenia, family therapy, among others), the natural audience for his work, the evolutionary biologists, had little interest in him. The mainstream thinkers in that field believed his ideas were muddled. This is one of several reasons why he ultimately abandoned the *The Evolutionary Idea,* which was to have been the first major restatement of evolutionary theory in half a century. Based on his previous experience, he was worried about the difficulty of getting across his ideas. The implications of the theory are based on acceptance of a radical new order of things, a worldview totally alien to our traditional Western way of thinking.

Aspects of this worldview derived from his association in the 1940s with Warren McCulloch, John von Neumann, Claude Shannon, and Norbert Wiener et al, who were all present at the creation of cybernetic theory. It was the radical epistemology behind these ideas seemed to inform a lot of this thinking. "The cybernetic idea is the most important idea since Jesus Christ.," he once told me.

And this is where we connected, as my book, *By The Late John Brockman*, which was very much on the radar screen at that time, was nothing if not a radical epistemological statement on language, thought, and reality. I had written the trilogy that ultimately comprised the book with no reference to Bateson as I had not read him and had barely heard of him until I was invited to the AUM conference in 1973 (my late invitation was sent when the organizers, John Lilly and Alan Watts, both strong supporters of my book, found out their keynote speaker, Richard Feynman, was ill, and they needed a replacement. Only when I arrived at the conference did I find out what I was walking into.)

"Evolutionists are an anxious, conservative, and spiteful bunch," Bateson said. "In fact, they kill each other." Bateson was referring to the famous affair involving his father, William Bateson, the preeminent British scientist of his day who, picking up on the work of Mendel, coined the word "genetics" and began the field, and William Kammerer, the Austrian biologist. Kammerer, a Lamarckian, committed suicide over research involving the inherited characteristics of the midwife toad. "I don't think they will like this book very much," Bateson said, realizing that he will be straying far from the traditional debate of natural selection versus inherited characteristics. "I shall not write the book. I am too old and too sick to fight the fight".

But he was always willing to travel, to interact with all kinds of people in order to present his ideas. This would lead him into strange surroundings, where the participants had no idea of what to expect and were not prepared for his depth and erudition. "Why do you bother?" I ask in reference to this particularly moribund gathering. It is clear that few here have any inkling of what he is saying. "One simply

keeps going," he says gently, "and leaves the name behind." It wasn't easy making a living as an epistemologist, he noted.

Yet, he did receive recognition. Charles Roycroft, British psychoanalyst, was quoted in the Seventy-Fifth Anniversary Issue of the *Times Literary Supplement* as saying that Gregory Bateson was the most underrated writer of the past seventy-five years.

Bateson is not easy. The only way to "get" Bateson is to read him. To spend time with him, in person or through his essays, was a rigorous intelligent exercise, an immense relief from the trivial forms that command respect in contemporary society

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*ABOUT BATESON*

(JOHN BROCKMAN:) It is March 1973 in Big Sur. California. A diverse group of thinkers are assembled to spend ten days together exploring the work of British mathematician G. Spencer Brown. Alan Watts and John Lilly, the coorganizers, are billing the event as "The AUM Conference." shorthand for The American University of Masters.

They have gathered together intellectuals, philosophers, psychologists, and scientists. Each has been asked to lecture on his own work in terms of its relationship to Brown's new ideas in mathematics. C. Spencer Brown lectures for two days on his Laws of Form. Alan Watts talks of Eastern religious thought. John Lilly discusses maps of reality. Karl Pribram explores new possibilities for thinking about neuroscience. Ram Dass presents a spiritual path. Stewart Brand lectures on whole systems. Psychologists Will Schutz, Claudio Naranjo, and Charles Tart are in attendance. Heinz von Foerster holds forth on cybernetic modeling. My own topic is "Einstein, Gertrude Stein, Wittgenstein, and Frankenstein."

Perhaps, of all the "Masters" present, Gregory Bateson, at sixty-eight, is at once the best known and the least known. Among his assembled peers, his reputation is formidable. At the AUM Conference, stories of his profound effect on postmodern thinking abound. Yet few outside the relatively small circle of avant-garde thinkers know about him or his work.

There is valid reason. Bateson is not very accessible. His major book, *Steps to an Ecology of Mind, is* just being published. It is a collection of essays he has written over a thirty-five-year period.

Bateson begins lecturing in the conference room. Clearly he is held in awe by his colleagues. Nothing in his imposing presence detracts from his reputation. He is a large man with a deep rich voice imbued with an unmistakable English accent. There is an air of authenticity about him.

Nora Bateson, Gregory Bateson, John Brockman at Aum Conference, 1973

His talk is filled with brilliant insights and vast erudition as he takes us on a tour of subjects that include zoology, psychiatry, anthropology, aesthetics, linguistics, evolution, cybernetics, and epistemology'. "The point," he says, "is that the ways of nineteenth-century thinking are becoming rapidly bankrupt, and new ways are growing out of cybernetics, systems theory, ecology, meditation, psychoanalysis, and psychedelic experience."

As he talks I look through a paper he has left for us as we entered the room. "Form, Substance, and Difference" is the nineteenth Korzybski Lecture, delivered by Bateson in 1970. In it he points out that he's touched on numerous fields but is an expert in none. He's not a philosopher, nor is anthropology exactly his business. This doesn't help me much. All I know about him is that he has an anthropological background, was once married to Margaret Mead, and was a prime mover behind the important Macy Conferences in Cybernetics in the 1940s.

His theme in the Korzybski Lecture was the same as his theme today: "the area of impact between very abstract and formal philosophic thought on the one hand and the natural history of man and other creatures on the other." His ideas are clearly of an epistemological nature. He asks us to do away with our Newtonian language, our Cartesian coordinates, to see the world in terms of the mind we all share. Bateson presents a new approach based on a cybernetic epistemology: "The individual mind is immanent but not only in the body. It is immanent also in the pathways and messages outside the body; and there is a larger mind of which the individual mind is only a subsystem. This larger mind is comparable to God and is perhaps what some people mean by 'God,' but it is still immanent in the total interconnected social system and planetary ecology."

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"Very few people have any idea of what I am talking about," Bateson says as he picks at a piece of fish in a Malibu restaurant. We are having dinner and discussing his plans

for a new book concerning evolutionary theory. It is June 1973. (At the AUM Conference in March, I had been pressed into service as a literary agent.)

Bateson defies simple labeling, easy explanation. People have problems with his work. He talks of being an explorer who cannot know what he is exploring until it has been explored. His introduction to Steps states: "I found that in my work with primitive peoples, schizophrenia, biological symmetry, and in my discontent with the conventional theories of evolution and learning, I had identified a widely scattered set of bench marks as points of reference from which a new scientific territory could be defined. These bench marks I have called 'Steps' in the title of the book."

But this is where Bateson gets difficult. Just what is this new scientific territory'? Most people look for the next place, the next piece of knowledge. Instead, Bateson presents an epistemology so radical that as one climbs from step to step, the ground supporting the ladder abruptly vanishes. Not easy, this cybernetic explanation of Gregory Bateson. Not comfortable. Not supportive. Not loving. The center dissolves, and man is dead; and in his place we have the metaphysical "I". So dismiss yourself; let go: There's nothing lost.

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Bateson's readers often find it difficult to grasp that his way of thinking is different from theirs. His students believe that he is hiding something from them, that there's a secret behind his thinking that he won't share. There's something to this. Bateson is not clearly understood because his work is not an explanation, but a commission, As Wittgenstein noted, "a commission tells us what we must do." In Bateson's case, what we must do is reprogram ourselves, train our intelligence and imagination to work according to radical configurations. Heinz Von Foerster points out that "the blessed curse of a meta-language is that it wears the cloth of a first-order language, an 'object language.' Thus, any proposition carries with it the tantalizing ambiguity: Was it made in meta or in object language?" Nobody, knows and you can't find out. All attempts to speak *about* a meta-language, that is, to speak *in* meta-meta-language, are doomed to fail. As Wittgenstein observed: "Remain silent!" But Bateson cannot remain silent. His childlike curiosity, his intellectual vigor and strength compel him to continue exploring new ground.

Yet he is hesitant about writing his new book. *The Evolutionary Idea will* be the first major restatement of evolutionary theory in half a century. Based on his previous experience, he is worried about the difficulty of getting across his ideas. The implications of the theory are based on acceptance of a radical new order of things, a worldview totally alien to our traditional Western way of thinking.

"Evolutionists are an anxious, conservative, and spiteful bunch," he says. "In fact, they kill each other." Bateson is referring to the famous affair involving his father, William Bateson, and William Kammerer, the Austrian biologist. Kammerer, a Lamarckian, committed suicide over research involving the inherited characteristics of the midwife toad. "I don't think they will like this book very much," Bateson says, realizing that he will be straying far from the traditional debate of natural selection versus inherited characteristics.

Bateson contends that as a result of advances in cybernetics and fundamental mathematics, many other areas of thought have shifted. In *The Evolutionary Idea,* he will gather together these new advances to present an alternative to current orthodox theories of evolution. This alternative view will stress the role of *information,* that is,

of mind, in all levels of biology from genetics to ecology and from human culture to the pathology of schizophrenia. In place of natural selection of organisms, Bateson will consider the survival of patterns, ideas, and forms of interaction,

"Any descriptive proposition," he says, "which remains true longer will out-survive other propositions which do not survive so long. This switch from the survival of the creatures to the survival of ideas which are immanent in the creatures (in their anatomical forms and in their interrelationships) gives a totally new slant to evolutionary ethics and philosophy. Adaptation, purpose, homology, somatic change, and mutation all take on new meaning with this shift in theory."

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It is the morning after our dinner discussion about the new book. Bateson, about forty other people, and I are together for a two-day seminar to explore "Ecology of Mind." Most of the people have paid one hundred dollars to hear Bateson talk. The auspices are an institute for humanistic development. The audience appears to be interested in self-help and personal awareness. This is the first opportunity I have had to hear him speak before a general audience. After the excitement surrounding his performance at the AUM Conference, I am preparing myself for another memorable experience.

Bateson slowly guides us through his endless repertoire of concepts and ideas. He talks about metaphor versus sacrament, schismogenesis, metaphysics, explanatory principles, heuristic versus fundamental ideas, the value of deduction, steady state society, metapropositions, deuterolearning, cybernetic explanation, idea as difference, logical categories of learning, mental determinism, end linkage, and on and on.

After a few hours, the attention of the group begins to wander. Many appear to be bored. By the end of the first day, at least one-third of the people have left. Bateson is unperturbed. Many people seek him out for the wrong reasons: for entertainment; for answers; as a guru. He explains that his receptions vary from the extreme boredom of this day to the excitement of the Macy Conferences of the 1940s. Still, he is always willing to travel, to interact with all kinds of people in order to present his ideas. "Why do you bother?" I ask in reference to this particularly moribund gathering. It is clear that few here have any inkling of what he is saying. "One simply keeps going," he says gently, "and leaves the name behind."

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Christmas time, 1973. I am about to approach a publisher to sell rights to *The Evolutionary Idea.* I had phoned Bateson requesting a biographical sketch. His letter arrives:

"John Brockman suggests that I write you a personal letter telling you who I am. I enclose an outline curriculum vitae,* to which I will add as follows.

> "My father was William Bateson, F.R.S., geneticist, a fellow of St. John's College, and first director of the John Innes Horticultural Institute, which was and still is a large genetical research institute.
>
> "Boyhood was mainly devoted to natural history: butterflies and moths, beetles, dragonflies, marine invertebrates, flowering plants, etc.

"Cambridge was mainly biology until I got a chance to go to the Galapagos Islands, where I realized that I did not know what to do with field natural history. In those days, biology, both in field and lab, was mainly taxonomy, and I knew that was not what I wanted to do. So, on return to Cambridge, I took anthropology under A. C. Haddon, who sent me out to the Sepik River, New Guinea, to study historical culture contact between the Sepik and the Fly River peoples. This was the equivalent in anthropology of taxonomy in biology. The result was two field expeditions, groping very unhappily for what one could do to establish some theory in anthropology. The final product was *Naven,* a book which was then very difficult for people to read but is gradually coming into almost orthodoxy. Levi-Strauss has worked on some of the problems of cultural structure which I raised then, and I think he's done a good deal to make my stuff readable and 'safe' for anthropologists.

"After that, field work in the Dutch Indies, in Bali, with my wife Margaret Mead. Then I did an elaborate photographic study of personal relations among the Balinese, especially interchange between parents and children. This was published with about 700 photographs as *Balinese Character.*

"Not much of my period of fellowship at St. John's College was spent in Cambridge. I was mostly in New Guinea and Bali. But of course it was an important piece of my life, and there were important people-L. S. B. Leakey, Harold Jeffries, Claude Guillebaud, Reginald Hall, Teulon Porter, Sir Frederick Bartlett, and others.

"In those days I was on the sidelines of the anthropologically famous battles between Radcliffe-Brown and Malinowski. I'd taught under Radcliffe-Brown in Sydney and learned a great deal from him, some of which got built into *Naven* (the hook-up with French anthropology came down to me from Durkheim and Mauss through Radcliffe-Brown, who was a great admirer of them). I enjoyed Malinowski very much, loved him, but thought him a lousy' anthropological theorist. Most of my colleagues (other than his students) hated his guts but were dreadfully afraid that he was a great theorist.

"In World War II, I came running back to England in September 1939 while Margaret was having a baby* in New York. I was promptly advised to return to America to help America join England. The Japanese finally did that for us. And I went through the war with the American Office of Strategic Services as a psychological planner. I don't think I helped the war much, but we did run four issues of an underground newspaper behind the Japanese lines in Burma.

(* Mary Catherine Bateson)

'Oh yes, before I went overseas I had a job analyzing German propaganda films in the Museum of Modern Art, New York City, and just before going overseas, I had met Warren McCulloch and Bigelow, who were all excited about 'feedback' in electronic machinery. So while I was overseas, and mostly bored and frustrated, I occasionally comforted myself by thinking about the properties of closed self-corrective circuits. On arrival back in New York I went straight to the Macy Foundation to ask for a conference on these things. Fremont-Smith said, 'McCulloch was here a week ago with

the same request, and he's going to be the chairman.' Membership in those conferences, with Norbert Wiener, John Von Neumann, McCulloch, and the rest, was one of the great events in my life. Wiener coined the word 'cybernetics' for what it was we were discussing.

"I was gently dropped from Harvard because a rumor got around, 'Bateson says anthropologists ought to be psychoanalyzed.' I did not say this, and I don't think I even believed it, but if they thought this was a good reason for dropping me, then I was probably lucky to be dropped. I was immediately picked up by Jurgen Ruesch for his research project in the Langley Porter Clinic, a psychiatric institution. This was the beginning of fourteen years of association with psychiatry, where I did my best, again, to bring formal theory into a very unformed Augean stable. The result was the so-called double bind hypothesis, which provided a framework for the formal description of schizophrenic symptoms and the experience of the schizophrenic in his family. I think this held up and still holds up pretty well in the face of a lot of misunderstanding and a little criticism. I am still pretty sure that something like the double bind story is an essential part of the phenomenon called 'schizophrenia.' In England my chief admirer in this field is Ronnie Laing. (By the way, you will probably run into rumors that Ronnie got too many of his ideas from me. I don't think this is really true. He certainly got some, and it is after all the purpose of scientific publication to spread ideas around, and I don't think he could at all be accused of plagiarism. I, too, have benefited by reading his stuff.)

"Enough mental hospitals and schizophrenic families is after a while enough, so I went off in 1963 to study dolphins, first under John Lilly, and then in Hawaii with the Oceanic Institute. A fascinating but terribly difficult animal to study. But they forced me to straighten out my contributions to learning theory and what's wrong with B. F. Skinner. But alas, the Institute went broke.

"So here I am, corrupting the minds of the youth in the University of California at Santa Cruz. And also the minds of the faculty. I have a class for seventy students called 'The Ecology of Mind.' For this I have six section leaders, who are fully grown-up professors, a molecular biologist, an astronomer from Lick Observatory, a tidepool zoologist, a historian, a literary bloke, and a self-unfrocked Jesuit. What I mean is that my stuff is relevant and sometimes difficult for all sorts of people. On the whole, the students get more out of it than the grown-ups.'

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Fifty-odd pages of *The Evolutionary Idea* have arrived. It is April 1974. The material is dense and difficult. I have responded with faint praise and well-intentioned criticism, urging Bateson to open it up, be more chatty, try to include the human, the anecdotal, and so forth. I have asked if the format of a metalogue between a father and a young daughter is necessary. Why can't the ideas be presented in a more traditional form? Bateson's letter is biting:

"I have now your letter of April 16th, your long-distance telephone call of the day before yesterday, and some pieces of telephone talk in New York. All these tend in the direction of 'please be more prolix.' I tossed the first two chapters in the wastepaper basket at four o'clock this morning and

shall probably do so again tomorrow. I think the real difficulty is that some readers *(et tu, Brute?)* just do not believe that I mean what I say. I suspect they think it is all a sort of entertainment and hope to come out at the end feeling refreshed. Believe me, John, that is not at all what it is about. Anybody who really reads and notices what is said and after several readings be gins to understand it, will come out in despair and nearer to tears than laughter.

"In any ease, my colleagues writing in the same field, whether terse or prolix, are incredibly difficult. The ideas which we deal with are difficult, painful, and foreign ideas. If you doubt this, I suggest a dose of Immanuel Kant as an example of the prolix, or a dose of Wittgenstein's *Tractatus* as an example of the terse. Honestly, I believe Kant is the more difficult.

"There are good and serious reasons why one party in the metalogues has to be in the period of sexual latency. This is not just in order to be cute; it is in order to be *acute.*

"For the rest, I will try not to let your remarks disturb me. I am, alas, too liable to let that sort of thing enrage me.

"There is a cute story going around about Picasso. A gent wanted him to paint things in a more representational manner, 'like this photograph of my wife. It is really like her.' Picasso looked at it and said, 'She is small, isn't she? And fiat.'"

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New technology equals new perception. The English biologist J. Z, Young points out that man creates tools and then molds himself in their image. Reality is manmade. An invention, a metaphor.

"The heart is a pump" is a statement we all accept as a truism. "The brain is a computer" is a statement that usually brings forth cries of humanistic horror. We seem to forget that the first statement is a creature of Newtonian mathematics. Newton created a mechanistic methodology. We invented ourselves in terms of its descriptive language.

We don't say the heart is *like* a pump. The heart is a pump. The metaphor is operational.

Although many of us are not ready for it, within a few years we will all recognize that the brain is a computer. This will be a result of the cybernetic ideas developed by such men as Gregory Bateson, Norbert Wiener, Warren McCulloch, Cordon Pask, Ross Ashby, John Von Neumann, Heinz Von Foerster, and John Lilly, to name a few. New technology equals new perception. The words of the world are the life of the world. Nature is not created. Nature is said.

We are just now beginning to recognize the new order resulting from the development of the science of cybernetics. Bateson believes that the cybernetic explanation is the most important fundamental intellectual advance of the last two thousand years. It tears the fabric of our habitual thinking apart. Subject and object fuse. The individual self decreates. It is a world of pattern, of order, of resonances.

Bateson is special. He is the only living person fully equipped to construct a bridge between the world of nineteenth-century science and the cybernetic world of today. He has lived on both sides of the bridge. On one side, the solid world embodied by his father, William Bateson, on the other side, the undone world of Gregory Bateson, a world of language, communication, and pattern.

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Bateson is sitting in my living room in May 1974. Today is his seventieth birthday. As we prepare for a big party, I suggest the possibility of organizing a hook in his honor. "I hope that if there were such a book that it focus on the ideas and what they are doing to us," he says.

We talk and plan. Bateson gives his blessing to the project. *Steps to An Ecology of Mind is* by no means an easy or popular presentation of the core problems he has addressed himself to. We decide to invite a number of his friends and colleagues to contribute original essays, using *Steps* as a springboard, something either to disagree with or to take off from. Bateson writes a letter for the invitees. In the letter he suggests:

"Possible angles which the authors might cover include: changed perceptions of the Self; changed concepts of responsibility; changed feelings about time; money; authority; attitudes toward environment; sex; children; family; control and law; city planning; biological bases for human planning and ethics; the seeking of optimal and homeostatic goals rather than maxima; population control; changes in the balance between 'feelings' and 'intellect'; changes in educational methods; new horizons in psychiatry; etc., etc.

"The possible field is very wide, but in sum what I would like to see would be a thoughtful forum on the subject of what you all (and I, too) are doing to the premises of civilization."

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Eight people, myself included, will contribute to the book. Mary Catherine Bateson (anthropologist and the daughter of Bateson and Margaret Mead), Ray L. Birdwhistell (expert in kinesics and communication), David Lipset (Bateson's authorized biographer), Rollo May (humanistic psychologist), Margaret Mead (anthropologist and Bateson's first wife), Edwin Schlossberg (physicist and environmental designer), and C. H. Waddington (geneticist). Unfortunately, Waddington dies *before his* piece is completed.

Other invited people are too busy with their own work or have problems with Bateson's ideas. His insistence on strict, as opposed to loose, thinking is most apparent with regard to his attitude toward his close friends and colleagues. It is December 1974, and I have just received his correspondence with a famous psychologist and author (who is not represented in this book). The psychologist plans to write about energy. "Everybody talks about it and nobody knows what it means," he says.

Bateson's response typifies the rigor of his precise thinking.

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"You say 'energy' and qualify the word by saying that neither you nor anybody knows what it is.

"But that (the qualifying comment) is not quite true, because, after all, we (scientists) made up the concept and therefore know (or *should* know) what we put into it.

"What is on the other side of the fence, of course, we do not know. But we made the concept to cover what we thought was 'out there' and gave the concept what we thought were appropriate characteristics. These latter we know, because we put them where they are, inside that word 'energy.'

"I am strongly of the opinion that these well-known characteristics are not appropriate to the sort of explanatory principle which psychologists want to make of the concept.

"1) 'Energy' is a quantity. It is indeed rather like 'mass,' which is another quantity. Or 'velocity.' None of these is a 'substance' or a 'pattern.' They are quantities, not numbers.

"2) 'Energy' is a very tightly defined quantity, having the dimensions ML (2)/T(2) (i.e., (mass X length X length) ÷ (time X time), or, more familiarly, mass X velocity (2)).

"Now the rub is that no quantity can ever generate a pattern, and to assert that this can occur is precisely the entering wedge of the new supernaturalism, for which Freud, Marx, and Jung are much to blame. (They 'could' have known better.)

"Quantity, of course, can and often does develop and intensify latent difference but never creates that difference. Tension may find out the weakest link in the chain but it is never the explanation of how that particular link came to be the weakest (Indeed the characteristic called 'being weakest' is not inherent in that link but precisely in the *relation* between that link and the others. 'It' could be 'protected' by filing one of the others!).

"3) The next step in supernaturalism alter the invocation of 'energy' is the belief in Lamarckian inheritance and ESP. After that the next step is the assertion that man contains two real existing principles, viz., a Body and a Soul. After that, any sort of tyranny and oppression can be rationalized as 'good' for the victim."

"So there is a slot in our proposed book for arguments in favor of 'energy' as an explanatory principle, but such arguments in that context will necessarily be controversial. I urge you to treat 'energy' as a controversial issue, not as a 'matter-of-course.'

"Personally I have never been able to see or feel why this very 'mechanical' metaphor ('energy') appeals to especially humanistic psychologists. What are the arguments for this metaphor rather than 'entropy' (which is still a sort of quantity)? What characteristics of the original concept (energy or entropy) are to be carried over when the

concept is used metaphorically to explain action or (?) anatomy?

"Are you familiar with Larry Kubie's paper,* long ago, in which he neatly and (I think) completely exploded the whole Freudian 'economics' of energy? It was that paper that earned him his place at the Macy Cybernetic conferences. But he never contributed anything there. I guess they slapped his wrist for heresy.

(* "Fallacious Use of Quantitative Concepts in Dynamic Psychology," *Psychoanalytic Quarterly* 16 (1947): 507-18.)

"Finally, believe me that the intensity of passion and care spent upon this letter is a function of both my esteem for you and my hatred of the principles which hide behind the use of 'energy' (and 'tension,' 'power,' 'force,' etc.) to *explain* behavior."

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It is January 1977. The publisher has called. The book is overdue. The pieces have been written, discussed, and edited. They provide an excellent entry into areas of Bateson's thought. The contributors have measured his work in terms of its effect, in terms of information.

I call Bateson in Santa Cruz to discuss the introduction. Before we get down to business, he tells me that Governor Brown has just named him to the Board of Regents of the University of California. Also, Charles Roycroft, British psychoanalyst, is quoted in the Seventy-Fifth Anniversary Issue of the *Times Literary Supplement* as saying that Gregory Bateson is the most underrated writer of the past seventy-five years.

I would like to interview Bateson for the introduction, but this proves logistically impossible. Thus I must edit my thoughts, notes, and our correspondence to present him to the reader. The present piece, I realize, is hardly a comprehensive introduction to the man and his work. But, as Bateson might say, it is a "step." It is important that readers realize that although this book is an introduction to Gregory Bateson, the only way to "get" Bateson is to read him. Study him. Editing this book has been, for me, most important. I found it necessary to force myself to sit quite still for many, many hours and study (not *read) Steps to an Ecology of Mind,* a rich, exhilarating experience. Roycroft is correct. Bateson is the most underrated writer of the century. To spend time with him, in person or through his essays, is rigorous intelligent exercise, an immense relief from the trivial forms that command respect in contemporary society.

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I ask Bateson to write an afterword to the book. "What do you want me to write about?" he responds. I am most interested in his ideas on cybernetic explanation and epistemology. While pondering his question, I remember a conversation with cultural anthropologist Edward T. Hall, who pointed out to me that the most significant, the most critical inventions of man were not those ever considered to be inventions, but those that appeared to be innate and natural. To illustrate the point, he told a story of a group of cavemen living in prehistoric times. One day, while sitting around the fire, one of the men said, "Guess what? We're talking." Silence. The others looked at him with suspicion. "What's talking?" one of them asked. "It's what we're all doing. Right

now. We're talking!" "You're crazy," another man replied. "Who ever heard of such a thing?" "I'm not crazy," the first man said, "you're crazy. We're talking." And it became a question of "who's crazy?" The group could not see or understand because "talking" was invented by the first man. The moment he said "We're talking" was a moment of great significance in the process of evolution.

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A modern-day descendant of Hall's caveman is Gregory Bateson. He is busy inventing something, an invention so profound that once fully propounded, it will seem always to have been "natural." The full impact of Bateson's thinking is so radical that, yes, I have doubts that he fully believes in his own ideas. This is the way it has to be. He has entered no man's land. He is trying something new. "We're talking."

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*AFTERWORD by Gregory Bateson*

Dear John

When you first suggested this volume and undertook to put it together, I said, "Don't let it be a *Festschrift,*" and we agreed that you would ask your authors rather for some work and thinking of theirs that might have developed out of or alongside some part of my work. You would ask not for praise or criticism, but for some original material of theirs. So let me thank them, and then become, myself, one of your authors. Rather than replying to the other authors, let me tell you where I stand today and what, for me, came out of all that work in New Guinea and Bali and, later, with schizophrenics and dolphins.

As you know, the difficulty was always to get people to approach the formal analysis of mind with a similar or even an open epistemology. Many people claim to have no epistemology and must just overcome this optimism. Only then can they approach the particular epistemology here proposed. In other words, two jumps are required of the reader, and of these the first is the more difficult. We all cling fast to the illusion that we are capable of direct perception, uncoded and not mediated by epistemology. The double hind hypothesis, i.e., the *mental* description of schizophrenia—was itself a contribution to epistemology, and to evaluate it was an exercise, if you please, in a sort of metaepistemology. Epistemology itself is becoming a recursive subject, a recursive study of recursiveness. So that anybody encountering the double bind hypothesis has the problem that epistemology was already changed by the double bind hypothesis, and the hypothesis itself therefore has to be approached with the modified way of thinking which the hypothesis had proposed.

I am sure that none of us in the 1950s realized how difficult this was. Indeed, we still did not realize that, if our hypothesis was even partly correct, it must also be important as a contribution to what I have sometimes called the "fundamentals" our stock of "necessary" truths.

So what I have to do now is to tell you how, for me, an epistemology grew out of ethnographic observation and cybernetic theory, and how this epistemology determines not only double bind theory and all the thinking that has followed in the field of psychiatry but also affects evolutionary thinking and the whole body-mind problem.

I have to present here a description of an epistemology, and then I have to fit the

double bind hypothesis and thoughts about evolution into that epistemology. In a word, I have to invite the reader to come in *backward* upon the whole business.

From time to time I get complaints that my writing is dense and hard to understand. It may comfort those who find the matter hard to understand if I tell them that I have driven myself, over the years, into a "place" where conventional dualistic statements of mind-body relations—the conventional dualisms of Darwinism, psychoanalysis, and theology—are absolutely unintelligible to me. It is becoming as difficult for me to understand dualists as it is for them to understand me. And I fear that it's not going to become easier, except by those others being slowly exercised in the art of thinking along those pathways that seem to me to be "straight." My friends in New Guinea, the Iatmul, whose language and culture I studied, used to say, "But our language is so easy. We just talk."

So in writing about evolution—in trying to write about it—a second book has started to appear. It became necessary to tell the reader a number of very elementary (as it seemed to me) things which he certainly ought to have learned in high school but which Anglo-Saxons certainly do not learn in high school. This book, budded from the first, larger book, I called, tentatively, *What Every Schoolboy Knows,* an ironic quote from Lord Macaulay. what the good gentleman really said was, "Every schoolboy knows who imprisoned Montezuma and who strangled Atahualpa."

Let me start by trying to characterize my epistemology as it has grown under my hands, with some notable influence from other people.

First, it is a branch of natural history. It was McCulloch who, for me, pulled epistemology down out of the realms of abstract philosophy into the much more simple realm of natural history. This was dramatically done in the paper by McCulloch and his friends entitled "What the Frog's Eye Told the Frog's Brain." In that paper he showed that any answer to the question "How can a frog know anything?" would be delimited by the sensory machinery of the frog; and that the sensory machinery of the frog could, indeed, be investigated by experimental and other means. It turned out that the frog could only receive news of such moving objects as subtended less than ten degrees at the eye. All else was invisible and produced no impulses on the optic nerve. From this paper it followed that, to understand human beings, even at a very elementary level, you had to know the limitations of their sensory input.

And that matter became part of my experience when I went through the experiments of Adelbert Ames, Jr. I discovered that when I see something, or hear a sound, or taste, it is my brain, or perhaps I should better say "mind"—it is I who create an image in the modality of the appropriate sense organ. My image is my aggregation and organization of information about the perceived object, aggregated and integrated by me according to rules of which I am totally unconscious. I can, thanks to Ames, know *about* these rules; but I cannot be conscious of the process of their working.

Ames showed me that I (and you), looking through our eyes, *create,* out of showers of impulses on the optic nerve, images of the perceived that appear to be three-dimensional images. I "see" an image *in depth.* But the way in which that image is given depth depends upon essentially Euclidian arguments within the brain and of which the perceiver is unconscious. It is as if the perceiver knew the premises of parallax and created his image in accordance with those rules, never letting himself know at any conscious level that he has applied the rules of parallax to the shower of impulses. Indeed, the whole process, including the shower of impulses itself, is a totally unconscious business.

It seems to be a universal feature of human perception, a feature of the underpinning of human epistemology, that the perceiver shall perceive only the product of his perceiving act, He shall not perceive the means by which that product was created. The product itself is a sort of work of art.

But along with this detached natural history, in which 1, as an epistemology, describe the frog or myself—along with that natural history goes a curious and unexpected addition. Now that we have pulled epistemology down from philosophy and made it a branch of natural history, it becomes necessarily a *normative* branch of natural history. This study is normative in the sense that it will chide us when we ignore its strictures and regularities. One had not expected that natural history could be normative, but indeed, the epistemology which I am building for you is normative in two almost synonymous ways. It can be wrong, or I can be wrong about it. And either of those two sorts of error becomes itself part of any epistemology in which it occurs. Any error will propose pathology. (But I am the epistemology.)

Take the statement in a previous paragraph, The organism builds images in depth out of the shower of impulses brought to the brain by the optic nerve. It is possible that this statement is incorrect, that future scientific study of the act of perception may show that this is not so, or that its syntax is inappropriate. That is what I mean by being in error in the first way. And the second way of possible error would be to believe that the images that I see are in fact that which I am looking at, that my mental map is the external territory. (But we wander off into philosophy if we ask, "Is there *really* a territory?")

And then there is the fact that the epistemology I am building is *monistic.* Applying Occam's Razor, I decline to pay attention to notions—which others assert to be subjectively supported—that mind or soul is somehow separable from body and from matter. On the other hand, it is absolutely necessary, of course, that my epistemology shall allow for the natural history fact that, indeed, many human beings of many different cultures have the belief that the mind is indeed separable from the body. Their epistemology is either dualistic or pluralistic. In other words, in this normative natural history called epistemology there must be a study of errors, and evidently certain sorts of error are predictably common. If you look over the whole span of my work, starting with the notion of schismogenesis, or starting even with the patterns in partridge feathers and going from that to schismogenesis in New Guinea to end linkage in national character, to the double bind and to the material we got from the porpoises, you will see that up to a certain date my language of report is *dualistic.*

The double bind work was for me a documentation of the idea that mind is a necessary explanatory principle. Simple nineteenth-century materialism will not accept any hierarchy of ideas or differences. The world of mindlessness, the Pleroma, contains no *names,* no *classes.*

It is here that I have always in my thinking followed Samuel Butler in his criticisms of Darwinian evolution. It always seems to me that the Darwinian phrasings were an effort to exclude mind. And indeed that materialism in general was an effort to exclude mind. And therefore, since materialism is rather barren, it was hardly surprising to me as an epistemological naturalist to note that physicists, from William Crookes onward, have been prone to go to mediums and other tricksters. They needed solace in their materialism.

But the matter was always difficult. I could not tolerate the dualism seriously, and yet I knew that the narrow materialistic statement was a gross oversimplification of the

biological world. The solution came when I was preparing the Korzybski Lecture, when I suddenly realized that of course the bridge between map and territory is *difference.* It is only *news of difference* that can get from the territory to the map, and this fact is the basic epistemological statement about the relationship between all reality out there and all perception in here: that the bridge must always be in the form of difference. Difference, out there, precipitates coded or corresponding difference in the aggregate of differentiation which we call the organism's mind. And that mind is immanent in matter, which is partly inside the body—but also partly "outside," e.g., in the form of records, traces, and perceptibles.

Difference, you see, is just sufficiently away from the grossly materialistic and quantitative world so that mind, dealing in difference, will always be intangible, will always deal in intangibles, and will always have certain limitations because it can never encounter with Immanuel Kant called the *Ding an Sich*, the thing in itself. It can only encounter news of boundaries—news of the contexts of difference.

It is worthwhile to list several points about "difference" here,

1. A difference is not material and cannot be localized. If this apple is different from that egg, the difference does not lie in the apple or in the egg, or in the space between them. To locate difference, i.e., to delimit the context or interface, would be to posit a world incapable of change. Zeno's famous arrow could never move from a position "here" in this context to a position "there" in the next context,

2. Difference cannot be placed in time. The egg can be sent to Alaska or can be destroyed, and still the difference remains. Or is it only the news of the difference that remains? Or is the difference ever anything but news? With a million differences between the egg and the apple, only those become information that make a difference.

3. Difference is not a quantity. It is dimensionless and, for sense organs, digital. It is delimited by threshold.

4. Those differences, or news of differences, which are information, must not be confused with "energy." The latter is a quantity with physical dimensions (Mass X the square of a Velocity). It is perfectly clear that information does not have dimensions of this kind*; and that information travels, usually, where energy already is. That is, the recipient, the organism receiving information—or the end organ or the neuron—is already energized from its metabolism, so that, for example, the impulse can travel along the nerve, not driven by the energy, but finding energy ready to undergo degradation at every point of the travel. The energy is there in advance of the information or the response. This distinction between information and energy becomes conspicuous whenever that which does not happen triggers response in an organism. I commonly tell my classes that if they don't flu] in their income tax forms the Internal Revenue people will respond to the difference between the forms which they don't fill in and the forms which they might have filled in. Or your aunt, if you don't write her a letter, will respond to the difference between the letter you do not write and the letter you might have written. A tick on the twig of a tree waits for the smell of butyric acid that would mean "mammal in the neighborhood." When he smells the butyric acid, he will fall from the tree. But if he stays long enough on the tree and there is no

butyric acid, he will fall from the tree anyway and go to climb up another one. He can respond to the "fact" that something does not happen.

(* But, of course, *a difference in* energy (not itself of the dimensions of energy) can generate news of difference.)

5. Last in regard to information, and the identity between information and news of difference, I want to give a sort of special honor to Gustav Fechner, who in the 1840s got a whiff of this enormously powerful idea. It drove him almost mad, but he is still remembered and his name is still carried in the Weber-Fechner Law. He must have been an extraordinarily gifted man, and a very strange one.

To continue my sketch of the epistemology that grew out of my work, the next point is recursiveness. Here there seem to be two species of recursiveness, of somewhat different nature, of which the first goes back to Norbert Wiener and is well known, the "feedback" that is perhaps the best-known feature of the whole cybernetic syndrome. The point is that self-corrective and quasi purposive systems necessarily and always have the characteristic that causal trains within the system are themselves circular. Such causal trains, when independently energized, are either self-corrective or runaway systems. In the wider epistemology, it seems that, necessarily, a causal train either in some sense dies out as it spreads through the universe, or returns to the point from which it started. In the first case there is no question of its survival. In the second case, by returning to the place from which it started, a subsystem is established which, for greater or less length of time, will necessarily survive.

The second type of recursiveness has been proposed by Varela and Maturana. These mathematicians discuss the case in which some property of a *whole is* fed back into the system, producing a somewhat different type of recursiveness, for which Varela has worked out the formalisms. We live in a universe in which causal trains endure, survive through time, only if they are recursive. They "survive"—i.e., literally live upon *themselves—and some* survive longer than others.

If our explanations or our understanding of the universe is in some sense to match that universe, or model it, and if the universe is recursive, then our explanations and our logics must also be fundamentally recursive.

And finally there is the somewhat disputed area of "levels." For me the double bind, among other things, as a phenomenon of natural history, is strong evidence that, at least in the natural history aspects of epistemology, we encounter phenomena that are generated by organisms whose epistemology is, for better or for worse, structured in hierarchic form. It seems to me very clear and even expectable that end organs can receive only news of difference. Each receives difference and creates news of difference; and, of course, this proposes the possibility of differences between differences, and differences that are differently effective or differently meaningful according to the network within which they exist. This is the path toward an epistemology of gestalt psychology, and this clumping of news of difference becomes especially true of the mind when it, in its characteristic natural history, evolves language and faces the circumstance that the name is not the thing named, and the name of the name is not the name. This is the area in which I've worked very considerably in constructing a hypothetical hierarchy of species of learning.

These four components, then, give you the beginnings of a sketch of an epistemology:

1. That message events are activated by difference.

2. That information travels in pathways and systems that are collaterally energized (with a few exceptions where the energy itself in some form, perhaps a light, a temperature, or a motion, is the traveling information). The separation of energy is made clear in a very large number of eases in which the difference is fundamentally a difference between zero and one. In such eases, "zero-not-one" can be the message, which differs from "one-not-zero."

3. A special *soft* of holism is generated by feedback and recursiveness.

4. That mind operates with hierarchies and networks of difference to create *gestalten.*

I want to make clear that there are a number of very important statements that are not made in this sketch of an epistemology and whose absence is an important characteristic. I said above that, as I see it and believe it, the universe and any description of it is monistic; and this would imply a certain continuity of the entire world of information. But there is a very strong tendency in Western thinking (perhaps in all human thinking) to think and talk as if the world were made up of separable parts.

All peoples of the world, I believe, certainly all existing peoples, have something like language and, so far as I can understand the talk of linguists, it seems that all languages depend upon a particulate representation of the universe. All languages have something like nouns and verbs, isolating objects, entities, events, and abstractions. In whatever way you phrase it, "difference" will always propose delimitations and boundaries. If our means of *describing* the world arises out of notions of difference (or what G. Spencer Brown's Laws of *Form* calls "distinction" and "indication"), then our picture of the universe will necessarily be particulate. It becomes an act of faith to distrust language and to believe in monism. Of necessity we shall still split our descriptions when we talk about the universe. But there may be better and worse ways of doing this splitting of the universe into nameable parts.

Finally, let me try to give you an idea of what it felt like, or what sort of difference it made, for me to view the world in terms of the epistemology that I have described to you, instead of viewing it as I used to and as I believe most people always do.

First of all, let me stress what happens when one becomes aware that there is much that is our own contribution to our own perception. Of course I am no more aware of the processes of my own perception than anybody else is. But I am aware that there are such processes, and this awareness means that when I look out through my eyes and see the redwoods or the yellow flowering acacia of California roadsides, I know that I am doing all sorts of things to my percept in order to make sense of that percept. Of course I always did this, and everybody does it. We work hard to make sense, according to our epistemology, of the world which we think we see.

Whoever creates an image of an object does so in depth, using various cues for that creation, as I have already said in discussing the Ames experiments. But most people are not aware that they do this, and as you become aware that you are doing it, you become in a curious way much closer to the world around you. The word "objective" becomes, of course, quite quietly obsolete; and at the same time the word "subjective," which normally confines "you" within your skin, disappears as well. It is,

I think, the debunking of the objective that is the important change. The world is no longer "out there" in quite the same way that it used to seem to be.

Without being fully conscious or thinking about it all the time, I still know all the time that my *images—especially the* visual, but also auditory, gustatory, pain, and fatigue—1 know the images are "mine" and that I am responsible for these images in a quite peculiar way. It is as if they are all in some degree hallucinated, as indeed they partly are. The shower of impulses coming in over the optic nerve surely contains no picture. The picture is to be developed, to be created, by the intertwining of all these neural messages. And the brain that can do this must be pretty smart. It's my brain. But everybody's brain-any mammalian brain—can do it, I guess.

I have the use of the information that that which I see, the images, or that which I feel as pain, the prick of a pin, or the ache of a tired muscle—for these, too, are images created in their respective modes—that all this is neither objective truth nor is it all hallucination. There is a combining or marriage between an objectivity that is passive to the outside world and a creative subjectivity, neither pure solipsism nor its opposite.

Consider for a moment the phrase, the opposite of solipsism. In solipsism, you are ultimately isolated and alone, isolated by the premise "I make it all up." But at the other extreme, the opposite of solipsism, you would cease to exist, becoming nothing but a metaphoric feather blown by the winds of external "reality." (But in that region there are no metaphors!) Somewhere between these two is a region where you are partly blown by the winds of reality and partly an artist creating a composite out of the inner and outer events.

A smoke ring is, literally and etymologically, introverted. It is endlessly turning upon itself, a torus, a doughnut, spinning on the axis of the circular cylinder that is the doughnut. And this turning upon its own in-turned axis is what gives separable existence to the smoke ring. It is, after all, made of nothing but air marked with a little smoke. It is of the same substance as its "environment." But it has duration and location and a certain degree of separation by virtue of its in-turned motion. In a sense, the smoke ring stands as a very primitive, oversimplified paradigm for all recursive systems that contain the beginnings of self-reference, or, shall we say, selfhood.

But if you ask me, "Do you feel like a smoke ring all the time?" of course my answer is no. Only at very brief moments, in flashes of awareness, am I that realistic. Most of the time I still see the world, feel it, the way I always did. Only at certain moments am I aware of my own introversion. But these are enlightening moments that demonstrate the irrelevance of intervening states.

And as I try to tell you about this, lines from Robert Browning's "Grammarian's Funeral" keep coming to mind.

> Yea, this in him was the peculiar grace . . .
> That before living he learned how to live.

Or again,

> He settled *Hoti's* business—let it be! —
> Properly based *Oun*—
> Gave us the doctrine of the enclitic *De,*

Dead from the waist down.

And again, there is the misquotation that is going the rounds today,

A man's reach should exceed his grasp,
Or what's a meta for?

I'm afraid this American generation has mostly forgotten "The Grammarian's Funeral" with its strange combination of awe and contempt.

Imagine, for a moment, that the grammarian was neither an adventurous explorer, breaking through into realms previously unexplored, nor an intellectual, withdrawn from warm humanity into a cold but safe realm. Imagine that he was neither of these, but merely a human being rediscovering what every other human being and perhaps every dog—always instinctively and unconsciously —knew: that the dualisms of mind and body, of mind and matter, and of God and world are all somehow faked up. He would be terribly alone. He might invent something like the epistemology I have been trying to describe, emerging from the repressed state, which Freud called "latency," into a more-or-less distorted rediscovery of that which had been hidden. Perhaps all exploration of the world of ideas is only a searching for a rediscovery, and perhaps it is such rediscovery of the latent that defines us as "human," "conscious," and "twice born." But if this be so, then we all must sometimes hear St. Paul's "voice" echoing down the ages: "It is hard for thee to kick against the pricks."

I am suggesting to you that all the multiple insults, the double binds and invasions that we all experience in life, the impact (to use an inappropriate physical word) whereby experience corrupts our epistemology, challenging the core of our existence, and thereby seducing us into a false cult of the ego—what I am suggesting is that the process whereby double binds and other traumas teach us a false epistemology is already well advanced in most occidentals and perhaps most orientals, and that those whom we call "schizophrenics" are those in whom the endless kicking against the pricks has become intolerable.

GREGORY

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## CURRICULUM VITAE
## Gregory Bateson

Born May 9, 1904, Grantchester, England, son of William Bateson, F.R.S. Naturalized U.S. citizen February 7, 1956.

1917-21
Student, Charterhouse, England.

1922-26
Cambridge University. Entrance Scholar St. John's College, 1922, Foundation Scholar, 1924; Natural Science Tripos, first class honors, 1924. Anthropologist Tripos, first class honors, 1926.
B.A., 1925, Natural Science.
MA., 1930 Anthropology.

1927-29
Anthony Wilkin Student of Cambridge University. The period of this studentship was

spent in anthropological fieldwork in New Britain and New Guinea.

1931-37
Fellow of St. John's College, Cambridge.
1931-33, Anthropological fieldwork, New Guinea, financed jointly by Fellowship and by the Royal Society.
1934, Visit to the United States. Lectured at Columbia and Chicago.
1936, Married Margaret Mead (divorced, 1950). One daughter.
1936-38, Anthropological fieldwork, Bali.

1938-39
Anthropological fieldwork, New Guinea.

1939
Brief fieldwork, Bali.

1940 Entered the United States as a resident.

1941
Film analysis with the Museum of Modern Art, New York City.

1942-45
Office of Strategic Services of the U.S. Government. Overseas in Ceylon, India, Burma, and China.

1946-47
Visiting Professor, New School for Social Research, New York.

1947-48
Visiting Professor, Harvard University, Cambridge, Massachusetts.

1947
Guggenheim Fellow.

1948-49
University of California Medical School. Research Associate with Dr. Jurgen Ruesch.

1949-to date
Ethnologist at Veteran's Administration Hospital, Palo Alto, California. Engaged in teaching and research on the borderline fields of anthropology, psychiatry, and cybernetics.

1951-to date
Part-time Visiting Professor, Stanford University, in the Department of Anthropology.

1952-54
Director, Research Project on the Role of the Paradoxes of Abstraction in Communication, under a grant from the Rockefeller Foundation.

1954-59
Director, Research Project on Schizophrenic Communication, under a grant from the Josiah Macy, Jr., Foundation.

1959-62
Principal Investigator, Research in Family Psychotherapy, under a grant from the Foundation's Fund for Research in Psychiatry.
Part-time Professor, California School of Fine Arts, San Francisco, California.

1961
Frieda Fromm-Reichmann Award for research in schizophrenia.

1963-64
Associate Director, Communication Research Institute, St. Thomas, U.S. Virgin Islands.

1964
Career Development Award, National Institute of Mental Health.

1965
Associate Director for Research, Oceanic Institute, Waimanalo, Hawaii.

1972
Visiting Professor, University of California at Santa Crux, Santa Cruz, California.

1976 Member, Board of Regents, University of California.

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Gregory Bateson: The Institute for Intercultural Studies

http://www.batesonconference.org/

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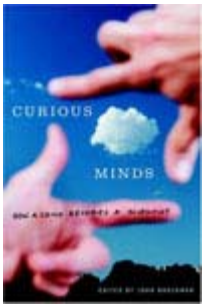





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