

Preface

. . . theories of evolution which, in accordance with the philosophies inspiring them, consider the mind as emerging from the forces of living matter, or as a mere epiphenomenon of this matter, are incompatible with the truth about man. Nor are they able to ground the dignity of the person.

– Pope John Paul II¹

In 1972, Gregory Bateson published a collection of cross-disciplinary essays under the provocative title: *Steps to an Ecology of Mind*.² Since that time, Bateson's ecological metaphor has been emerging as a root idea of current neuropsychology and cognitive science. We are beginning to understand the human mind as a kind of eco-system, doubly constituted by loosely stable firing patterns of a human brain and nervous system on one hand, and by participation in a natural and social environment on the other. The flip side of this ecological image is evolutionary and Darwinian – and, as such, anathema to traditional-minded people who see the mind as constituted top down from a supreme “command centre” of soul or spirit or consciousness.

In effect, we begin to understand the brain as a massively parallel information processor – or suggestion processor as I prefer to say. Animal brains give rise to animal minds. Human brains give rise to human minds. A great many inter-communicating human minds give rise to the collective mind of culture and society, which in turn shapes and is shaped by all the individual minds that comprise it. The over-all picture is not of sovereign minds thinking thoughts and making choices, but of human thoughts and choices formed as spontaneous outcomes from a competition of innumerable competing suggestions. As William James had already seen over a hundred years ago, “The thoughts themselves are the thinkers.”

We must expect some fur to fly when the import of these ideas is fully grasped – for, in extending the ecoDarwinian (eD) paradigm of self-organization from the origin of living species to the functioning of brains and minds, they directly challenge over 2500 years of religious and philosophical speculation on the nature and ground of human existence. This tradition taught us to see ourselves as nodes of immortal, conscious spirit created by a loving, omniscient God. Even when a secularizing mind-set abandons the theocentric vision, we still like to think of ourselves as more-or-less rational agents. By contrast, the eD paradigm and recent neuro/cognitive science stemming from it is teaching us to understand ourselves as self-organizing, bio-social, suggestion processors. In psychology and elsewhere, much of the cultural dislocation that we experience today can be ascribed to this shift from a top-down to a bottom-up perspective.

In this book I have attempted to sketch the landscape of possibilities and issues that appear when eD ideas are taken on board as a comprehensive world-view. To this end, I offer a series of dialogues between an amateur philosopher and his wife, a practicing psychotherapist. Guy (representing the author), speaks for the eD view that mental events correspond without remainder to physiological events, and that events of both types configure themselves spontaneously on bottom-up, self-organizing,

¹ Address to Pontifical Academy of Sciences, October 22, 1996. See www.newadvent.org/library/docs_jp02tc.htm

² I credit this ecological metaphor for cognition to Bateson, having been unable to trace it further. For a timeline of the evolution of cybernetics, see www.asc-cybernetics.org/foundations/timeline.htm.

ecological principles. He is fascinated by this new, biological understanding of brain and mind, and certainly does not find it devastating. His wife Thea, on the other hand, starts out largely ignorant of the new science, and dismayed by what she has heard of it. Its conception of the mind as an evolving eco-system is completely alien to her, and she is worried about its implications for her clients and for the public. One thing that Guy and Thea can agree on is that eD science proposes a cognitive revolution more radical than the heliocentric astronomy of Copernicus and Galileo.

Since those early days of science, there has been a growing rift between the world of ordinary experience and the world construed by what we call “science” – an intensive process of empirical, critical, abductive investigation. The central issue, we are now finding, lies between two opposing styles of explanation: between top-down and bottom-up thinking. From a top-down perspective, some idea of God, an Intelligent Designer, or at least transcendent Natural Law is practically an intellectual necessity as a First Cause from which the whole show proceeds. Things happen a certain way, ultimately, because that is God’s will – whatever you decide to mean by “God.” If you then ask why God wills it so, there is no rational answer.

Taking a bottom-up view, we find that it is not only possible, but very fruitful to conceive the whole show as having organized itself out of nothing – and to frame our explanations on that basis. In this dispensation, as Smolin says: “There is . . . no absolute or platonic world to transcend to. All there is of Nature is what is around us. All there is of Being is relations among real, sensible things. All we have of natural law is a world that has made itself.”

What Smolin says here, speaking probably for most living scientists, is quite radical when you stop to think about it. It’s radical because, in transforming our understanding of Nature, this paradigm shift changes how we understand ourselves. Just as we’d been accustomed to think of the world as designed and called into being by an act of volition, so we were accustomed to think of bodies and minds as separate entities under the control of a Self – a disembodied knot of pure consciousness. So much was this knot of consciousness conceived as separate from mind and body that we imagined a real entity, the Soul, which leaves the body after death to meet some posthumous destiny of its own. In a scientific psychology, this idea of a metaphysical Self is no longer tenable because no evidence for it has been found, and because it does not help to explain anything. On the contrary, it places the central phenomenon of this science, our sense of being minds that deal with other minds, beyond explanation.

It is important to be clear about this: In the biological sciences, evolution and the ecological interdependence of life-forms are highly confirmed theories. In psychology and the social sciences however, what I’m calling the “ecoDarwinian paradigm” is not yet by itself a theory. Rather, it’s an approach – a strategy for seeing and making sense of things. Specifically, it’s a way to understand ourselves: as biological systems that evolve and self-organize, and fall spontaneously into ecology-like patterns that are temporarily and loosely stable. On this path, consciousness becomes a phenomenon to explain, not a primal substance that must be taken for granted.

And that is the scientist’s point: On this path, the phenomenon of mind potentially can be explained, where a top-down view can only find a mystery. Whether one properly responds to a mystery by singing hymns to it or laboring to understand it (or both, or neither) is a question that readers must answer for themselves. Stop reading here if you cannot bear to contemplate that the mind is not an impenetrable manifestation of God – only a scientific puzzle of extraordinary complexity.

Beginning with Locke and Holbach in the 18th century, a few philosophers and scientists came to suspect that the ancient mind-body dualism was wrong: that mind and brain are really the same thing from different points of view, or that a mind is what a brain is doing. By the time of Freud and William James in the late 19th century, this

idea was a commonplace in scientific circles. But only since about 1970 have we begun to understand just how a neurally grounded mind is possible. We are far from having all the answers yet, but we begin to have a general understanding of how the brain's workings produce what we experience as experience itself: as sentient, self-aware consciousness.

To understand anything at all, the first step is to choose a metaphor for its investigation. If mind is not a mysterious substance that arrives in the body at conception and departs at death, then what is it?

Leibniz thought of the mind as an elaborate mechanical device – like a windmill or a clock. Freud imagined it as an overheating steam engine with valves that got a bit sticky sometimes, allowing internal pressures to build dangerously high. Many 20th century psychologists conceived the mind as a kind of stored-program computer with cultural “software” running on the brain’s “hardware” – or “wetware” as organic computers have been called. Gregory Bateson saw that the mind had more in common with an evolving eco-system than with an externally programmed computer, and thereby launched the most promising metaphor to-date: the basis for most current research, and the one that we’ll be following. Skeptical Thea will say this metaphor is no more likely to be correct than any of its predecessors. She may be right – yet there is reason to think we are at last on the right track.

Bateson developed his ideas about the evolving, ecological mind in the currently prevalent language of information; but I believe a language of suggestion may prove more apt for the purpose, and for the theory of communication in general. Loosely, a suggestion is a message that prompts a person, a nerve cell or any responsive being, to think or do something. It may be thought of as exerting a weakly causal or influential force, in a way that information, in this term’s strict, quantitative sense, does not.

In ordinary language, information is comprised of statements and other representations of states of affairs in the real world. Information merely brings us news of what is going on. By contrast, suggestions exert an influence upon us to interpret our world and/or respond to it in some specific way. Our observable behaviour then – what we actually do – will emerge as an outcome of competing suggestions from various sources: e.g. to fight or flee, “stick it” or “chuck it,” welcome a friendly advance or not.

All meaningful information conveys suggestion, but information in the engineer’s sense, is not yet meaningful; and it is the “meaning,” rather information per se that is suggestive. As well, not all suggestions carry information. For example, the touch of another person is always highly suggestive, but how would you define or measure its information content? A similar difficulty exists when communication is thought to be based on the transmission of signs – marks or events that “stand for” something else. All signs suggest; they suggest what they are taken to stand for. But not all suggestions make use of signs. Signs refer through learned association to ideas and entities beyond themselves, but communication is much more than that, and it begins on a more primitive level altogether. Primordially, and above all, what communications communicate are feelings, relationships, values. A theory that commences at the level of information overlooks the most basic and urgent communications of all. More on this in Talk #3.

Our approach then will be to think of the brain not as an information processing device, but as a suggestion processor – and to identify what we call “mind” either with the stream of suggestions processed, or with the pre-existing structures of suggestion through which new suggestions are evaluated, and either turned down or accepted. These structures derive from various sources: from our families and cultures and personal life histories to be sure, but also, through our genes, from the whole biological history of our species. In tracing the interplay of all these influences, we can understand

human beings as self-organizing systems of suggestion that constitutes themselves on the fly, under the pressure of events. Thus, when you speak of your “self,” you mean yourself as a whole – a whole creature, body and mind together, embedded in your society and world. Or you mean a mentally constructed “self-image,” comprised of suggestions that you put to yourself and others, as a basis for their relationships with you and as a context for your own choices. Thus, a human mind can be identified with the patterns or structures that come together in its brain for the parsing and evaluation of suggestions – and with that processing itself. But there is no transcendent, metaphysical Self or “Soul” at the mind’s core. There doesn’t need to be.

Advantages of our suggestion-based, eD paradigm include the following: First, the theory of communication can be grounded at a primitive level involving the formulation, reception and selective uptake of suggestions to feel, think and/or do something. The “meaning” of any suggestion is what it suggests we feel or think or do. The theory of knowledge can then be recast in a language of suggested ideas and values, rather than asserted “truths.” Epistemology is thereby personalized; values are brought back into the domain of reasoned (ie. justifiably suggested) argument; and intellectual arrogance becomes a bit more difficult.

In psychology and social science, the cybernetic notion of “control” can be replaced with a looser and more appropriate notion of influence or guidance based on a weighing and selective uptake of suggestions. This done, it becomes possible to think about and study various types of social relationship as the mutual exchange of suggestive guidance.

Richard Dawkins’ concept of a meme (a transmissible packet of culture) can be interpreted as a re-suggestive structure capable of putting more-or-less consistent suggestions to the persons who encounter it. Bateson’s “ecology of mind” can then be studied as a dynamic, loosely balanced system of suggestions that people tender to themselves and to one another. The concept of “mind” is thereby detached from the experience of consciousness, and the phrase “unconscious mind” loses its flavor of oxymoron. We find ourselves with a fairly precise language of “mind,” parallel and isomorphic to the physiological language of “brain.”

All this said, and radical as our paradigm shift is in some respects, it is well to remember that the change is more semantic than real: We continue to be the same creatures we have always been, though a new language of self-description becomes available. Just as modern astronomy does not alter our day-to-day perception of a unique Sun that sets and rises, so this ecological paradigm need not alter the way we ordinarily treat ourselves and each other as autonomous, morally responsible individuals. It is I – not a brain, or a system of suggestions – who writes these words. It is you who read them.

In the last reckoning, a scientific theory, even a solidly established one, is no more than a suggested way of looking at things – good for some purposes, not so good for others. A certain tension always remains between one’s personal experience of life, and the public story (or stories) in circulation. There is room for discrepancy – a legitimate one – between scientific and ordinary ways of seeing the world. At the same time, this new shift of understanding, like the earlier ones of Copernicus and Darwin, must be expected to have cultural and political consequences. Until we grasp that interpretations are just suggested cognitive strategies, the tendency to spin scientific theory into political and religious ideology is unlikely to disappear.

I also want to stress that these “Talks” are a product of collective intelligence in the sense of Talk #4. This writer makes one in a great swarm of minds, buzzing along a stigmergic trail laid down by many others, adding my own two scents (sic) to theirs. It goes without saying, then, that all the books and websites referenced, and the innumerable conversations (with friends in sympathy with these ideas and other friends

decidedly not) played a part in making this the book it is. Specific acknowledgements and thanks are due first of all to Gregory Bateson, Richard Dawkins, Daniel Dennett and Nick Humphrey who turned me on to the eD paradigm. In particular, it was Dennett's provocative book *Consciousness Explained* (1991) that made me see the enormity of the paradigm shift in progress, and launched me on the project of getting my head around these novel ideas.

And I gladly express appreciation to several friends, especially Carol Motuz, John McKeefery and Luis Oliver, with whom I discussed these ideas continually. Their reservations, or (as in Carol's case) outright hostility to the paradigm, were greatly helpful in this writing.

Instead of a conventional bibliography, I provide a list of books and Web sites, organized by topic. These serve as a starting point for further investigation, while the bare list of topics conveys the breadth of landscape to be surveyed. I have not provided a glossary, but suggest the use of Wikipedia and 1-Click Answers to supplement the definitions I've provided.

Finally, a word of caution: In this book I'm sketching a certain outlook, more than arguing the case for it. It is not a work of scholarship and close reasoning, but of Web surfing and synthesis. Though I have tried not to violate current knowledge in any way, my interpretations go beyond the current scientific consensus at several points. Call this "philosophic extrapolation" or even "poetic license" if you will, but I felt the liberties justified, since my purpose has been to gain a sense of where the new paradigm is taking us: what it tells us about ourselves and about the business of being human. Obviously, surprises are possible, though I think at least the broad outlines of brain/mind science are fairly clear by this point. Still, the reader should keep in mind that these fields are progressing rapidly, and that the ideas advanced here are suggestions only. It would be tiresome to keep saying this, so I do so only once, at the beginning.