

Distinguishing the Observer: An Attempt at Interpreting Maturana

If there is no other, there will be no I.

If there is no I, there will be none to make distinctions.

Chuang-tsu, 4th Cent., B.C.*

“Languaging”, as Maturana occasionally explains, serves, among other things, to orient. By this he means directing the attention and, consequently, the individual experience of others, which is a way to foster the development of “consensual domains” which, in turn, are the prerequisite for the development of language. – Although the sentence (you might say, the languaging) with which I have here begun is at best a pale imitation of Maturana’s style, it does perhaps represent one important aspect of Maturana’s system: The circularity which, in one way or another, crops up again and again.

In my interpretation, it is absolutely indispensable that one diligently repeats to oneself, every time one notices circularity in Maturana’s expositions, that this circularity is not the kind of slip it would be in most traditional systems of our Western philosophy. It is, on the contrary, a deliberately chosen fundamental condition that arises directly out of the autopoietic model. According to Maturana, the cognizing organism is informationally closed. Given that it can, nevertheless, produce descriptions, i.e., concepts, conceptual structures, theories, and eventually a picture of its world, it is clear that it can do this only by using building blocks which it has gleaned through some process of abstraction from the domain of its own experience. This insight, which Maturana expresses by saying that all cognitive domains arise exclusively as the result of operations of distinction which are made by the organism itself, was one of the points that attracted me to his work the very first time I came across it.¹

On the basis of considerations, far from those that induced Maturana to formulate the biological idea of autopoiesis, I had come to the same conclusion. My own path (somewhat abbreviated and idealized) led from the early doubts of the Pre-Socratics via Montaigne, Berkeley, Vico, and Kant to pragmatism and eventually to Ceccato’s “Operational School” and Piaget’s “Genetic Epistemology”. This might seem irrelevant here, but since Maturana’s expositions hardly ever refer to traditional philosophy, it seems appropriate to mention that quite a few of his fundamental assertions can be substantiated by trains of thought which, from time to time, have

cropped up in the conventional history of epistemology. Although these trains of thought have occasionally irritated the official discipline of philosophy, they never had a lasting effect and remained marginal curiosities. I would suggest, that the reason for this neglect is that throughout the occidental history of ideas and right down to our own days, two requisites have been considered fundamental in any epistemological venture. The first of these requisites demands that whatever we would like to call "true knowledge" has to be independent of the knowing subject. The second requisite is that knowledge is to be taken seriously only if it claims to represent a world of "things-in-themselves" in a more or less veridical fashion. Although the sceptics of all ages explained with the help of logical arguments that both these requisites are unattainable, they limited themselves to observing that absolute knowledge was impossible. Only a few of them went a step further and tried to liberate the concept of knowledge from the impossible constraints so that it might be freely applied to what is attainable within the acting subject's experiential world. Those who took that step were branded outsiders and could therefore be disregarded by professional philosophers.²

A Closed Experiential World

It is not my intention here to examine why the philosophical climate has changed in the past twenty or thirty years. The fact is that today one can defend positions that take a relativistic view of knowledge without at once being branded a nihilist or dangerous heretic of some other kind. It is fortunate for Maturana, and for us, that he survived the last two decades in spite of his opposition to the reactionary Chilean dictator Pinochet. I say fortunate, because Maturana is undoubtedly one of those thinkers who, in past centuries, would have been led to the pyre without recanting. In philosophy, the authoritarian dominance of the realist dogma (be it materialistic or metaphysical) has certainly been shaken by the manifested unreliability of political and social "truths" as well as by the revolution in the views of physics. But the aversion against models of cognition that explain knowledge as organism-dependent and even as the product of a closed circuit of internal operations, has by no means disappeared. The comprehensive conceptual flow-chart that Maturana often shows during his lectures, has on the left (from the audience's point of view) the break-down of explanation with objectivity, and on the right side, explanation without objectivity. Whether, in one's own describing, one chooses to be on the left or the right side is, according to Maturana, a matter of emotion. As far as knowledge and language are concerned, the left side must cling to the belief that knowledge can capture objective reality and that language can refer to and signify it. The concept of objectivity that Maturana has in mind, is dependent on this belief.³ Maturana himself, if I have understood him correctly, does not share it, and places himself unequivocally on the right side, where objectivity is discarded ("put in parentheses") and the only realities possible are realities brought forth by an observer's operations of distinction.

It seems to me that the left side of the schema was added only to explain the misguided paths of conventional philosophy and does not have the same didactic function as the right. That it is to be understood in this way, seems unquestionable to me, because the belief in the possibility of acquiring knowledge about an objective reality, a world-in-itself, as Kant would have said, can be demolished without biology

or autopoiesis by the arguments formulated by the sceptics. What then remains, from my point of view, is the necessity to substitute a new explanation for the relation between our knowledge (i.e. every conceptual structure we use successfully) and the "medium" in which we find ourselves living. This new explanation must be one that does not rely on the assumption of an isomorphy that can never be demonstrated.

In this context it is crucial to remember that Maturana set out to describe and explain all the phenomena that are called "cognitive" from a biological foundation. Insofar as his project is successful, he can afford to disregard the traditional theory of knowledge and to refer to it only for the purpose of emphasizing the difference of his way of thinking. By departing from the history of philosophy without entering into it, however, he runs the risk of being misunderstood by all those whose notion of cognition is still tied to the conventional idea of knowledge. Maturana therefore often finds himself having to face misconceptions of the same kind as Piaget had to face, who also reiterated that, in his theory, cognition is not a means to acquire knowledge of an objective reality but serves the active organism in its adaptation to its experiential world.

What Maturana calls "operational effectiveness" corresponds, in my constructivist perspective, to "viability" and coincides in the history of philosophy with the slogan launched by the Pragmatists at the turn of the century: "True is what works." Maturana's "operational effectiveness", however, is more successful in its application than the Pragmatists' "functioning". All operations and their effectiveness, according to Maturana's definition, lie and must lie within a domain of description that is determined by the distinctions the particular observer has made. The generalized "functioning" of the Pragmatists, in contrast, fostered the temptation to look for an access to an "objective" world, on the basis that certain ways of acting "function", while others do not. Maturana's model thwarts any such temptation in the bud, because it makes clear that "effectiveness" is a judgement made within a domain of experience which itself was brought forth by an observer's activity of distinguishing.

That experiential worlds and their domains can be brought forth only by an acting observer is, I believe, the one insight Hans Vaihinger lacked when he wrote his brilliant *Die Philosophie des Als Ob* (The Philosophy of As If) – and because of this lack he was unable to close his system without shifting the theory of evolution into an ontic reality.⁴

The Birth of the Observer

For me, one of the most difficult points in Maturana's conceptual edifice was his oft repeated assertion that the observer, too, could be derived, without further assumptions, from his formulation of the basic biological conditions governing the interactions and the linguistic activity of autopoietic organisms. It took me more than a decade to construct for myself an interpretation of this derivation. If I present it here, I do so with the emphatic warning that it is, indeed, a personal interpretation that makes no claim whatever to authenticity.

According to Maturana, all linguistic activity or "languaging" takes place "in the praxis of living: we human beings find ourselves as living systems immersed in it."⁵ Languaging, for Maturana, does not mean conveying news or any kind of "information", but refers to a social activity that arises from a coordination of actions

that have been tuned by mutual adaptation. Without such coordination of acting there would be no possibility of describing and, consequently, no way for the distinctions made by an actor to become conscious. To become aware of distinctions, is called observing. To observe oneself as the maker of distinctions, therefore, is no more and no less than to become conscious of oneself. Maturana has recently described this very clearly:

... if we accept that what we distinguish depends on what we do, as modern physics does, we operate under the implicit assumption that, as observers, we are endowed with rationality, and that this need not or cannot be explained. Yet, if we reflect upon our experience as observers, we discover that our experience is that we find ourselves observing, talking, or acting, and that any explanation or description of what we do is secondary to our experience of finding ourselves in the doing of what we do.⁶

The salient point in this closed circle is the basic condition that Maturana repeats so frequently, namely that what is observed are not things, properties, or relations of a world that exists "as such", but rather the results of distinctions made by the observer himself or herself. Consequently, these results have no existence whatever without someone's activity of distinguishing. Just as Vico, the first constructivist thinker, said, the cognitive subject can know only facts, and facts are items the subject itself has made (Latin: *facere*). The observer, thus, arises from his or her own ways and means of describing, which is to say, by distinguishing him- or herself.

Here, then, I do see a connection to Descartes, but it is not the connection to Cartesian dualism that was mentioned by Volker Riegas in his "Conversation with Maturana". Descartes, set out to defeat scepticism by using doubt as the tool to separate all that was dubious from the certain truths he hoped would be left. He found at the end of his endeavor that there was only one thing he could be certain of, namely that it was he himself who was engaged in the reflective activity of doubting. Since his investigation had been motivated by the hope that, in spite of the sceptics' arguments, a way could be found to reach an ontic reality, he now formulated the certainty of his own doubting as an ontological principle: *cogito ergo sum*.

For Maturana this formulation is not acceptable, precisely because the "*sum*" asserts existence in the ontological sense. Had Descartes seen – as Maturana explicitly does – that the doubting he was so certain of, rested necessarily on distinctions which he himself was making in his own experiential world, and not in any ontic reality, then he might have said: "by distinguishing, I create myself as observer." – If I have understood Maturana, he could easily accept this new formulation of the Cartesian principle.

From my perspective, Maturana supplies, as it were, the ladder which a consciousness must ascend in order to become observer. About the origin of that consciousness he says nothing. That I, as a living organism, "find myself immersed in language", means to me that I have the capability to find myself, and this capability, which involves a kind of reflection, belongs to what I call consciousness.

Representation and Memory

In “The Bringing forth of Pathology”, an article Maturana recently wrote together with Carmen Luz Mendez and Fernando Coddou, there is a section about language and the various forms of conversation. Two of these forms are described in some detail:

The first we shall call conversations of characterisation if they entail expectations that have not been agreed upon about the characteristics of the participants. The second we shall call conversations of unjustified accusations and recriminations if they entail complaints about unfulfilled expectations about the behaviors of the participants that were not previously agreed upon.⁷ (p.155)

Given that Maturana, at various places in his writings, makes it very clear that he considers unacceptable the concept that is usually linked with the word “representation”, it may surprise one at first that, in the passage quoted here, he bases a discrimination of conversations on “expectations”. In my analysis, to have an expectation means to represent to oneself something that one has not yet isolated by means of distinctions in the present flow of actual experience. The apparent contradiction disappears, however, if one considers that the English word “representation” is used to designate several different concepts, two among which are designated in German by the two words *Darstellung* and *Vorstellung*.⁸ The first comes to the mind of English-speakers whenever there is no explicit indication that another is intended. This concept is close to the notion of “picture” and as such involves the replication, in a physical or formal way, of something else that is categorized as “original”. The second concept is close to the notion of “conceptual construct”, and the German word for it, *Vorstellung*, is central in the philosophies of Kant and Schopenhauer.

Maturana’s aversion against the word “representation” springs from the fact that, like Kant and Schopenhauer, he excludes conceptual pictures or replications of an objective, ontic reality in the cognitive domain of organisms. In contrast, representations in Piaget’s sense are repetitions or reconstructions of items that were distinguished in previous experience. As Maturana explained in the course of the discussions at the ASC Conference in October 1988, such representations are possible also in the autopoietic model. Maturana spoke there of re-living an experience, and from my perspective this coincides with the concept of representation as *Vorstellung*, without which there could be no reflection. From that angle, then, it becomes clear that, in the autopoietic organism also, “expectations” are nothing but re-presentations of experiences that are now projected into the direction of the not-yet-experienced.

This consideration leads to another question that often remains unanswered in the context of Maturana’s theory: the question of memory and the mechanism that makes it possible to remember. As Maturana reiterates, also in this context everything one can say lies on the level of descriptions, a level that is determined by the fact that one makes certain distinction and not others. Maturana discards – as does Heinz von Foerster – the notion of a “storage” in which impressions, experiences, actions, relations, etc., could be deposited and preserved. I fully agree with this. From my point of view, however, it is nevertheless clear that the observer who describes something as re-living, must have some indication that the experience referred to is

one that has been lived at least once before; and this realization of the repetition requires a mechanism that plays the role of what one calls "to remember" in ordinary English.

In an autopoietic organism, every perturbation, every experience, every internal event changes the structure of the network that constitutes the organism. These changes, of course, are not all of the same kind. Some could be the forming of new connections and thus of new pathways in the network; others could be what one might call "lubricating" or facilitating an already existing path. The observer, who speaks of re-living, must be able to distinguish a path that is being generated for the first time, from one that was connected at a prior occasion. This would seem necessary, regardless of whether the description concerns the operations of another organism or the observer him- or herself. But the repetition of an experience can be ascertained only if the observer is able, at least temporarily, to step out of the stream of experience, in order to distinguish the use of an already trodden path from the opening of a new one. In my terminology that means the observer must be capable of reflection.

Maturana makes it clear that in his model all acting and behavior of an organism is fully determined by the organism's structure and organisation; hence it requires no reflection. On the level of descriptions, however, where what can be described is brought forth by nothing but the observer's operations of distinction, one cannot, as far as I can see, manage without reflection. To my knowledge, Maturana says nothing about this point. I assume, however, that the observer generates his or her own ability to reflect simply by distinguishing him- or herself as the acting, observing, and eventually reflecting subject in the particular domain of experience.

The Excluded Reality

The question concerning the origin of the observer in Maturana's theory is answered for me by continually keeping in mind that not only the entire experiential world must be considered the product of distinctions one makes oneself, but also that the flow of experience is brought about by one's own distinguishing oneself as the observer. This, of course, is not a metaphysical answer that purports to explain the genesis of an entity which "exists" as ontic subject capable of "knowing" an ontic world. Maturana does science and is careful to do it in a scientific manner. This entails that he refrains from smuggling metaphysical assumptions into his model, assumptions that cannot be justified because they are logically unjustifiable. He has expressed this in various ways:

... an observer has no operational basis to make any statement or claim about objects, entities or relations as if they existed independently of what he or she does.⁹

And in the interview with Riegas he says: "nothing can be said about a transcendental reality." (p.53)

This position is by no means new. One can find it in Vico, Kant, Schopenhauer, and recently in Richard Rorty. New, however, is the biological interpretation of the experiential world, which lays out the circumstances under which an observer can be brought forth. If one takes this interpretation as working hypothesis, it has far-

reaching consequences for our conceptual relation to the experiential world. Like all scientific models, Maturana's "explains" the how of the phenomenon it deals with – the genesis of the observer --, not the why. This is par for the scientific course. Physics for example explains how it comes about that heavy objects "fall", by means of the concept of gravity; that heavenly bodies exert a gravitational pull, can perhaps be reduced to the curvature of space; but why space should be curved in an ontic world is a question to which the physicist neither has nor needs an explanatory answer – he may merely observe that the assumption of curved space makes possible some useful calculations and predictions. Those physicists who have become aware of the epistemological foundations of their science, have said this quite clearly, because, like Maturana, they have realized that it is their own concepts, their own operations of distinction that bring forth the experiential world which they describe in their science.

Consistency instead of Foundation

At the beginning I spoke of the circularity in Maturana's theory, and then I tried to explicate, from my perspective, some sectors of the conceptual circle. If I have been at all successful, it should now be easy to dismantle one of the major objections that are made from more than one side against Maturana. Gerhard Roth's precise formulation may serve as an example.

The conception of such a cyclical theory raises the problem of the foundation and of the beginning. Either one begins with the epistemological explication concerning the observer, the conditions and the objects of his observations (distinction of objects, system-parts, etc.) in order, then, to reach a constructivist theory of living systems; or one begins with an objectivist explanation of the organisation of living systems which then leads to a theory of the brain, of cognition, and eventually to a theory of the observer. Maturana attempts both simultaneously ...

This conception must fail, because it gets entangled in the contradiction between the constructivist and the objectivist approach.¹⁰ (p.88)

The problem of foundation and the problem of beginning, as becomes clear already from this introductory passage of his critique, are in Roth's view closely interwoven with one another. This may be adequate in the treatment of traditional theories of knowledge, but in the critique of a conceptual structure that explicitly excludes knowledge of an objective world-in-itself, such interlinking seems to me inadmissible.

In a theory that describes itself as circular, it is inappropriate to demand a beginning. A circle is characterized by, among other things, the fact that it has no beginning. In Maturana's edifice every point arises out of the preceding one – much as when, in thick fog on an Alpine glacier, one places one foot in front of the other without ever seeing what lies further ahead or further behind one; and as sometimes happens in such a fog, after hours of walking, one realizes that one is walking in one's own footsteps. The fact that one has begun the circle at a specific point could be perceived only from a higher vantage point – if the fog had lifted and made possible a view. But the fog that obstructs our view of ontic reality cannot lift, because, as Kant already saw, it is inextricably built into our ways and means of experiencing. For that

reason, a meticulous investigation such as Maturana's, can only show that, regardless of where we step into the circle, we can neither come to an end of the path, nor, if we retraced our steps, to a beginning. At best we could perhaps recall the point we distinguished as a presupposition at the beginning of our search.

With regard to the problem of foundation, Roth says:

The autopoietic system which is produced (observed) by our cognition – in the scientific description – is not ontologically and epistemologically identical with that of the autopoietic system (organism with brain), that is the cause, respectively foundation, of our cognition, because this exists in the world of "things-in-themselves" (whatever this might mean), and is for us wholly inaccessible. (p.88)

I am quite unable to explain what might have led a shrewd thinker like Roth to assert that Maturana has shifted the organism and its brain into an objective reality. Roth seems to see here a failed attempt by Maturana to find an ontological "foundation" for his concept of cognition. In my view, such an attempt is to be excluded, because it would be impossible to reconcile it with the main autopoietic principle: If everything said is said by an observer on the basis of his or her operations of distinction, this must be considered valid not only for particular domains of the experiential world but for everything we do, think, or talk about.

In Maturana's view of the world, one can request neither external ontological foundations nor an "absolute" beginning. Both requests are not only meaningless but also superfluous in such a view. "Foundation" in the ontological sense presupposes that one considers access to an observer-independent world possible. Maturana denies that possibility no less decidedly than does Roth; and the "beginning" that Roth misses, would require an obligatory starting point, i.e. an "unconditional principle" needing no justification, on which the theoretical edifice could be erected by pure logic. But Maturana's theory explicitly excludes such a linear construction by its deliberately circular development of the key concepts.

The misunderstanding may have originated from the fact that Maturana, like the rest of us, is obliged to use a language in his expositions that has been shaped and polished by more than two thousand years of naive realism and forces him to use the word "to be" which, in all its grammatical forms, implies the assumption of an ontic reality.

In the closing remarks of the cited critical article, Roth then explains:

Science has nothing to do with the objective world, because this world is unknowable ... "Truer" is that which possesses higher coherence – always of course with respect to self-generated criteria of coherence. (p.94)

Insofar as my interpretation of Maturana's autopoietic theory is a viable one, I cannot discover any inconsistencies in it that would destroy its coherence.

From my point of view, however, coherence is a necessary but not a sufficient criterion for the evaluation of an allcomprehensive philosophical system. Leibniz' monadology, for example, left nothing to be desired with regard to coherence; nevertheless it did not succeed as an applicable view of the world. In the final analysis, the value of Maturana's work will depend on whether the success, which his applications in the praxis of our experience are having at present, will turn out to be a

lasting one. And finally – what to me seems “emotionally” more important – we shall have to see whether the beginnings of an ethic he has recently brought forth will help to fulfill the hope that a consensual domain can be created on our endangered planet, a domain established around the consensus on collaboration that might make possible the survival of a human culture.

Footnotes

- * Fung Yu-lan, *Chuang-tzu: A new selected translation*. Shanghai: The Commercial Press, 1933. Quoted by Alan Watts in *The Watercourse Way*, Pantheon Books, New York, 1975, p.52.
- 1. One difference is that, for me, with the activity of distinguishing, there arises the activity of relating, without which there would be no construction of more complex conceptual structures. That all knowing begins with making distinctions, was said not only by the ancient Chinese philosopher, but in our days also by George Spencer Brown (cf. his *Laws of Form*, London: Allen & Unwin, 1969).
- 2. Cf. my “Wissen ohne Erkenntnis”, in Gerhard Pasternak (Ed.), *Philosophie und Wissenschaften: Das Problem des Apriorismus*, Frankfurt/Bern: P.Lang, 1987.
- 3. Objectivity, in Maturana’s texts, does not indicate the opposite of the “subjectivity” of a single individual, but is used in the sense of classical philosophy, namely to signify the intention or requirement to represent the world as it is “in itself”, without any additions, subtractions, or distortions caused by the experienter.
- 4. Hans Vaihinger, *Die Philosophie des Als Ob*. Berlin: Reuther & Reichard, 2nd edition, 1913. In the “Preliminary Remarks” to the introduction to his brilliant work, Vaihinger reproaches Pragmatism because, as he says, it sinks to “Utilitarianism of the worst kind” (p.XI), when it calls true “whatever helps us to put up with life”. Some 300 pages later, however, he writes: “... today’s set of categories is merely the product of natural selection and adaptation.” He is referring to “categories” in Kant’s sense. With this statement he clearly places Darwin’s theory of evolution into an ontological reality and turns the “categories”, i.e., the key elements in our conceptualisation of the experiential world, into “utilitaristic” tools of survival.
- 5. Cf. Humberto Maturana, “Ontology of observing: The biological foundations of self-consciousness and the physical domain of existence”. *Texts in Cybernetic Theory*, American Society for Cybernetics, 1988; p.36.
- 6. Cf. Humberto Maturana, “Reality: The search for objectivity or the quest for a compelling argument”. *The Irish Journal of Psychology*, 1988, 9(1), p. 26.
- 7. Carmen Luz Mendez, Fernando Coddou & Humberto Maturana, “The bringing forth of pathology”, *The Irish Journal of Psychology*, 1988, 9(1), 144-172.
- 8. Further discussion of the conceptual muddle arising from the word “representation” will be found in my “Preliminaries to any theory of representation”, in C. Janvier (Ed.), *Problems of representation in the teaching and learning of mathematics*, Hillsdale, New Jersey: Erlbaum, 1987.-- Here I would merely mention that it would be quite wrong to conclude from this example that German is a richer or more precise language. Coincidences of different concepts can be found in the other direction as well. (e.g., the two English words “to isolate” and “to insulate” are invariably translated with one and the same

German word, in spite of the fact that there is a clearly specifiable conceptual difference.

9. Humberto Maturana, "Reality: The search for objectivity or the quest for a compelling argument". *The Irish Journal of Psychology*, 1988, 9(1), p. 30.
10. Gerhard Roth, "Wissenschaftlicher Rationalismus und holistische Weltdeutung". In Gerhard Pasternak (Ed.), *Rationalität und Wissenschaft*, (Vol. 6), Bremen: Zentrum Philosophische Grundlagen der Wissenschaften, 1988.

Acknowledgement

I am indebted to Heinz von Foerster for useful critical comments on a draft of this paper.

This paper was downloaded from the Ernst von Glasersfeld Homepage, maintained by Alexander Riegler.



It is licensed under the Creative Commons Attribution-NonCommercial-NoDerivs License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/2.0/> or send a letter to Creative Commons, 559 Nathan Abbott Way, Stanford, CA 94305, USA.

Preprint version of 4 Mar 2006