

Understanding Systems: Conversations on Epistemology and Ethics¹

A Review of the book by Heinz von Foerster and Bernhard Poerksen²

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Ever since (some 30 years ago) I first came across Heinz von Foerster, the man and the academic/author, I have been waiting for him to write a book. Not just a book, but the book in which he would collect together all the various strands of his immensely rich work. And for years he disappointed me. I am sure I am not alone in this!

Nevertheless, various people had a go at getting something book-like published, notably the (no longer obtainable) generously assembled *Observing Systems* compiled and edited by Francisco Varela.

Von Foerster steadfastly downplayed the value of his work and his own contribution. I think he has liked to portray himself more as a ring master rather than a performer: and he has certainly managed to orchestrate conditions so that others have been enormously enabled in their own work. Just to take one example, the Biological Computer Laboratory (BCL) at the University of Illinois can be looked on as a glasshouse in which the talents of many were appreciated and developed—from the already distinguished (including Ashby, Beer, Günther, Loefgren, Maturana, Pask and Varela) to students who came to be current significant masters of the field of cybernetics (Umpleby and Weston, for instance).

Even interviewing von Foerster has only lead to him discussing his own work in moments of temporary lapse while under extreme pressure. I know this, for I spent a week interviewing him ten years ago, only to find the camouflage still largely intact (although I did eventually manage to oblige him to spend one begrudging session on his work).

So it seemed, to me at least, that my hope for “the book” was a lost cause. There would never be the general, co-ordinating statement, the coherent assembly, the simple account by the master himself made available in one place and in one neat package: it would be left for us to read and to construct our own realities

1. Kluwer Academic/Plenum Press, New York, Boston, Dordrecht, London, Moscow; and Carl-Auer-Systeme Verlag, Heidelberg. Price, from Carl-Auer Systeme Verlag, ₤ 25.5 plus postage. The price quoted at Amazon.com in the USA (the only web source bookshop I have been able to find that has this book on its lists) is U.S \$68.

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(interpretations) from what we understood. And I could appreciate this position, even while I hoped against hope for more guidance and the presentation of an (already) integrated whole.

And then, about five years ago, a different strategy was brought to bear. During the 1990s, von Foerster was at last discovered at large in the German speaking world. Suddenly he was feted in Germany and Austria (peaking when he was given the freedom of the City of Vienna in 2001; and through the establishment of the von Foerster Society and Archive at the University of Vienna, together with the von Foerster lecture), in his home town, where he had previously been largely ignored.⁴

There was an unexpected side effect that arose out of this. Suddenly there was a number of (younger) German speaking intellectuals who wanted to converse with von Foerster in German (most of his revolutionary cybernetic work having been written in English), and who were prepared to put in many hours studying his published work with a fresh eye. They came to his home in California to speak with him on his balcony, to walk in the forests and on the Pacific shore, assembling from the conversations a number of books in which von Foerster does, at last, talk generally of himself and his work and world view. I know of three such collaborations. One, with Monika Broeker, exists also in a draft English translation. Another, with two (unrelated) Muellers who run the von Foerster Archive, is currently only in German. And a third, with Bernhard Poerksen, which now appears in English and is the subject of this review.

This book, the particular outcome of this process which I am considering here, is named *Understanding Systems*. Although this title contains an enticing ambiguity, it is not the title von Foerster had in mind. He wanted the book to be called “Truth is the Invention of the Liar.” The reversal that his preferred title presents, and the consequent jolt of awakening and puzzlement, is typical von Foerster. It’s a shame that the publishers couldn’t accommodate his wish.

What is this book *Understanding Systems* about? When I started reading the book, and was composing possible reviews—or, at least, approaches—in my mind, I wondered about giving the traditional and normal paraphrase. As I read I began to withdraw from this idea. Of course, all the usual von Foerster suspects are there: self-organisation, trivial and non-trivial machines, constructed realities, the lack of meaning in communication (à la Pask), the cybernetics of cybernetics, cybernetics and ethics,⁵ responsibility and choice (and our determinations), memory without record and so on.

But there are two problems with summarising (and then commenting, possibly even arguing against). Firstly, the presentation is, as is usual in von Foerster’s papers, unusually terse, dense, to the point—in two words, in Heinz’s “inimitable English.” This is a book of wide-ranging yet lean interviews, although interviews in which both

4. There were, of course, notable exceptions: Niklas Luhmann and his school, and artists such as Trash Treasure, in Aachen.

5. Naming my company CybernEthics Research was a tribute to von Foerster, though I did not realise it was also a quote!

the protagonists and those who make up the story they are developing are forcefully present. So, in a sense, it's already a summary. Secondly, at the heart of the book is an attitude that is inclusive, individual, and which argues against inappropriate reduction and inappropriate definition. By the latter, I refer to both von Foerster's dislike of labelling and being categorised, and the "inter-disciplinary" nature of his work, especially at the Biological Computer Laboratory, which he founded. I have placed "inter-disciplinary" in inverted commas because he argues strongly against the use of this term also. As he says, inter-disciplinary studies require expert knowledge of several disciplines: what he's talking about is the limitations of useful boundaries, the importance of not being bound (restricted) and, hence, non-disciplinary studies.

An important way in which von Foerster demonstrates the power of his ideas is as a debunker. The book is full of attacks ridiculing received wisdom and familiar and favourite ideas that von Foerster shows to be absurd or sentimental. He does this through the application of a rigorous logic that he uses to show absurdity. Generally, he does this with charm and a deftly light touch. Here are just four examples (in my paraphrase).

- We cannot speak about the certainty of death. At the moment a very considerable percentage of those who have been born are still alive.
- We have freedom to decide (ourselves) exactly when a matter is undecidable.
- Our individuality means we are all connected.
- Truth is the invention of a liar.⁶

It is through this debunking of the absurd that von Foerster shows the vigour of his thinking and its importance to us not only in science, but in our every day conduct of our lives.

I should like here to make a comment on the languages used by von Foerster. The language history of von Foerster's writings has always interested me.⁷ On his arrival in the USA, speaking no English, Warren McCulloch had him made editor and secretary of the Macy Conferences. This amounted to a crash course in English. The resultant use of language was exquisite. Perhaps von Foerster's progress in English was similar to that of Samuel Beckett in French, who used French so that he would write with more care and precision.⁸ To my mind there is a fluidity in English which allows the sort of thinking (a type of sloppy thinking, quite often pun-like and exploiting ambiguity) that permits the breaking of conventional boundaries, which is what was required for the sorts of concepts that von Foerster developed in cybernetics. German gives a sort of legalistic precision, when called upon to do so, which English does not manage so well. The quality of a mind that grew up speaking German and

6. Bringing to mind George Bernard Shaw's "All Great Truths begin life as lies."

7. I have always thought that the rather strange German of Ludwig Wittgenstein was an intuitive attempt to write German as if it were English. When I suggested this to Heinz, he agreed with me.

8. Von Foerster was my doctoral examiner. The main memory I have of the actual exam was his corrections of my English text, specially the spelling. I am a native speaker. What he suggested were genuine improvements!

then had to shift to English can be very powerful. I think von Foerster was a case in point. No matter how true or false this view may be, his groundbreaking work was written in English. It is as though he had to make a different space to do it in. But then, late in life, he could return to his native German and express his thoughts with a different type of clarity, for most of what he “wrote” in his last decade was in German. Perhaps this is an irrelevance, but I think not. This book, *Understanding Systems*, even in its English translation, shows an easy exactitude and precision that is extraordinarily clear, delightful and remarkable. The book, although often terse, is always somehow populated with people and with ideas.

There is another facet of the book I think is important: biography. I don't want to confuse the story with the teller. But, as von Foerster would be the first to point out, there is no story without a teller. Through the tales of his life, many aspects of von Foerster's ways of thinking and acting become ever more apparent. For instance, the importance of magic (not only that the world is magical, but in how magic (conjuring) works as the creation of a world by interaction of the magician and the audience);⁹ the human valuing and sustaining of difference (including a story of how he and his wife Mai sustained a Jewish couple in Nazi Berlin); and the significance of communication (von Foerster eavesdropped on the discussions of his parents' circle of artists and intellectuals in Vienna during his early childhood in Vienna and, after the second world war, acted as a radio journalist on scientific and cultural matters, interviewing many important and interesting people). Von Foerster comes across as a very social person who enjoys the interchange of meeting others. Many who read this review will have met him, and of those, many will have visited him at home. Yet there must also be those who have not had this opportunity. In this book, I hear his voice. It's not just that I can hear him speaking, that accent, that intonation, the infuriating habit of speaking very quietly and fast when he's saying something important; but also the person. I am lucky to have known Heinz for a long time, and (I believe) fairly well. For me this book brings me into his presence again. I imagine it will do this for all who have met him. For those who haven't, it does have his presence and so, perhaps, gives an opportunity to meet this fascinating and lovely man.

Finally, it would not do if I were to fail to mention the real magic that von Foerster tells us of in this book. I mentioned this as the key to his work in the obituary I wrote for this journal. Von Foerster wants to re-open our minds to wonder. And, for him, the first wonder is that we have to make the choice on how we will make our universes. This is the deep mystery from which all others follow: it is up to us. Since we cannot know without us being there to do the knowing, the choice is ours. There may or may not be other things that contribute to this choice (deciding which is again our choice), but we cannot escape making that choice. And that is cause for wonder, as is the resulting outcome of our choices. We cannot know whether there is a Mind

9. This review was completed shortly after von Foerster's death and was intended for publication in an earlier issue of *Cybernetics and Human Knowing*. My commemorative paper in this issue, “Machines of Wonder and Elephants that Fly through Air,” was written after this review.

Independent Reality. But we can chose to act as if there were, or there weren't: that is our choice. More than anything, von Foerster wishes us to wonder with astonishment and awe at who we are and what our experience is. This position derives from his assertion "My doctrine is not to have a doctrine."

I have spoken with a number of others who have read this book. One comment I find interesting is that it is very hard to understand (because, I think, of its density). I did not find this so: to me it was delightful and clear, and we sailed, Heinz, Bernhard and I, with our many shared references and people, through a most beautiful seascape almost without effort. I put this down to that famous remark of von Foerster's "uncle" (Nonnonkel) Ludwig Wittgenstein, who in the introduction to the *Tractatus* remarks that perhaps his text will only be understood by those who have already had these thoughts (I paraphrase). This book can be seen as the summary of the intent of the "project of second-order cybernetics." To those who were lucky enough to be able, early, to find the concepts, constructions and understandings of second-order cybernetics, this book will, I believe, be instantly clear and fluent. To those who have not, it may be a little harder. But the rewards (including later reading it fast) will be enormous.

I recommend this book not only to the cybernetics and systems community, but to anyone. In fact, if I could think of someone I would not recommend it to, I'd be certain to recommend it to them—and, then, to me. But there appears to be a snag. I have looked for this book on the web, and the only place I found it was at amazon.com and in the publisher's listings. It may be difficult to obtain. But please do try to obtain it. I have recently managed this by contacting the publishers Carl-Auer Systeme Verlag directly via the Internet.

And I want to thank the self-effacing Bernhard Poerksen, whose name has scarcely featured in this review, for the immense, and immensely valuable, effort he put into understanding Heinz's thought so that he could structure both the interviews and then the organising of them into a book, that is so redolent of "the essence of Heinz," and which brings him to us so clearly.

After this, I'm looking forward to reading the other collaborative texts. Can they be as good?

Reference

Foerster, H. von. (1980.) *Observing Systems* (compiled and edited by F. Varela). Seaside, CA: Intersystems.

The Lama and the telescope

Back in 47 some lamas left their Tibetan heaven.
They sailed down the Ganges over the Pacific to the South American Andes.
Here they met the wise men of the West.
Together they slowed down their hearts and put their minds to rest.
One day came a messenger of no hope.
He said, soon they will build a giant telescope.
Then came a bulldozer and mechanical toys.
You could here the ghost of Galileo screaming in the noise.
The lama went to the construction sight
to complain about the loss of the light.
The astronomers said he saw a black hole eating a red giant's face,
millions of galaxies racing to the same place.
On the large scale he could see the human form,
Long and thin held together by gravity and magnetic spin.
It had a long finger stretching out over millions of light years,
Pointing to some thing it loves, or fears.
With the new telescope, I can see if it can laugh or cry tears.
The lama said I'm going away to leave you.
I want to say goodbye.
Maybe a machine can see God in the sky?

Bill Schiffer
The cosmic flower,
Christiania, Copenhagen