

System explained by Humberto Maturana

The Santiago School of Cognition / Epistemology

Speaker 1, Humberto Maturana:

SPEAKER 1: Humberto, Fritjof Capra in his recent book, *The Web of Life*, has coined the phrase the Santiago School of Cognition, which you are a central player and contributor. I wonder if you would care to tell us what Capra means by the Santiago School of Cognition.

HUMBERTO MATURANA: He is referring to a curious historical occurrence. I began this work on the organization of living systems and on systems in general in Chile 1960. And then at the end of the decade in the 1967, I had a student who was Francisco Varela, who later on in 1970 became my collaborator. And there we wrote a little book which contained what I had developed during these 10 years, which we call *About Machine and Living Systems* which represented the fundamental approach to living systems and cognition. I had also written an article called *Biology of Cognition*.

So, when the military coup took place, Francisco Varela left Chile and went to the United States eventually and there he met Gregory Bateson. And Gregory Bateson knew through Francisco Varela of the work that we had been done and of me who was in Chile. And he is the person who coined this expression Santiago School of Epistemology. And I felt very happy.

SPEAKER 1: You've just called it the Santiago School of Epistemology. I think Capra talked about the Santiago School of Cognition. So that introduces two terms that I think it would be very helpful to talk about. Perhaps if we start with cognition, would you care to tell me what you mean by cognition and the work that you've done on cognition?

HUMBERTO MATURANA: Yes. My study in biology as a neurobiologist has been during my time in Chile in the domain of perception, colovision. And in this work, I realized that I had to take into account a normal experience which is illusions. We live, illusions we commit mistakes. And not only that, when we commit the mistake, we do not know that we are committing a mistake. And when we live an illusion, we do not know that we are living an illusion. We only know afterwards through comparing with another experience.

So, in the moment in which we commit a mistake or in which we have an illusion, we do not commit a mistake, we do not have an illusion. The illusion of the mistake rises commentaries about one experience in reference to another. So, in order to understand the phenomena of perception in general, I had to take this into consideration or dismiss it. I decided to take this into consideration.

Now if you do that, then the question of cognition appears because if one take seriously the fact that when one commits a mistake, one does not commit a mistake, I mean, one is saying something or doing something that one considers valid. But afterwards, they evaluate, or when one is having an illusion, one does not know that one is having an illusion, only afterwards. So how does one know that one is not committing a mistake or is not having an illusion? Only afterwards. But in the moment.

So, what is to know then? I mean, this was my question. What is to know? What makes the phenomenon of knowing if one has no way of claiming that is committing a mistake when the mistake is being committed? Now, I correct, I say, aha, yesterday I committed a mistake, but how do I know that now I'm not committing a mistake, and so on and so forth.

SPEAKER 1: I think you use an example of thinking you recognize someone that you know. Do you want to perhaps—

HUMBERTO MATURANA: This is a good with example because it's very frequent that then one goes for example in the street and you see a friend and say, hello, John. And you are happy or worried or whatever it is that happens to you when you meet John. And a moment later you realize that it is not John. And say, excuse me, I committed a mistake.

But in the moment that you saw John, if you like your friend, you were full of joy. If you have some conflict with this person then you leave the conflict. But afterwards you know that all was for nothing because it was not John. But in the moment in which you think you saw John, or you have the experience of seeing John, this was what you lived.

So, under these circumstances one never knows whether what one is leaving at any moment will or will not be evaluated as an illusion or as a mistake afterwards. So, the question is then, what is it to know? And in the attempt to handle this as a neurobiologist, I had to come to the matter of cognition seriously. In the biological tradition, the matter of cognition has been left originally to philosophers or as a psychological problem without looking to the fundamentals of the phenomenon.

So, what I have done is to pursue the question of cognition of knowing as a biological phenomenon. And to do that, then I have to handle all the characteristics of the nervous system. And I have to take the serious constitutive condition the fact that in the experience we cannot distinguish between perception and illusion.

But if you enter into the question of cognition, you enter entering the question of epistemology on the grounds that you have to claim that something is the case, which are the grounds through which you give validity to your cognitive statements. So, these two things mixed together in the biological understanding of how the nervous system operates, how we operate as living systems, even though we cannot distinguish in the experience between perception and illusion without that being a limitation but a condition of existence in us.