

## **System explained by Humberto Maturana**

*Our history - Structural coupling and structure determined systems*

### **Speaker 1, Humberto Maturana:**

SPEAKER 1: This opens up for me another avenue of your work, which is the history of the individual, I think you use the term structural coupling, and the relationship between an individual who lives in the moment as a result of a history of structural coupling and also who lives in a network of conversation, a social system. How do these issues, if at all, relate to your argument about taking responsibility?

HUMBERTO MATURANA: They relate in the explanation of how come that even though we cannot say anything about something independent from us, we do things together in a coordinated manner. We cannot distinguish in the experience between perception and illusion. We do not commit a mistake in the moment in which we commit a mistake because a mistake is a posteriority. And we live together doing things with a sufficient degree of coherence and mistakes we can claim that we have committed and correct them, and so on and so forth. Even we cannot make a reference to an independent reality.

To explain that, we have to look at the structure. We have to look at what it means to operate in a domain of experiential coherences. And it is in relation to that that this notion of structural coupling comes, and I would like to make a little drawing to explain this. And this has to do with our operation as what I call structure-determined systems, structural determinism and structure-determined system.

Now, we live in a world in which in the living, which we handle what we do and the experiences that we live in terms of the coherence of our experience are structure-determined system in the following sense. And let us suppose that they were to stand here and here we are in a church. This is not any more use as a church, it's an old building. And then I stand and go through the wall. You see me go through the wall. What would happen to the person that sees this?

Well, first of all, the first thing that will happen would be surprised because walls, you don't go through just like that. Why? Because of the coherence of experience, because of the structure

of the wall, the structure of the body. I mean, I do not penetrate into each other. You don't go through walls. Then, if you have seen me going through the wall after this initial surprise, you will see, aha, there must be a secret door because doors are openings to go through walls.

Now, if I have gone through the wall, I must have gone through a secret door. And so, you will try to find the secret door. That is, the observer will try to conserve structural coherences. To do everything to explain in terms of structural coherence is this curious event of going or appearing to go through the wall. And we'll say, aha, there is a secret door, or this was an illusion. In fact, he just moved very fast behind this particular furniture. And it will get to see behind this furniture whether I am behind the furniture did not go through the wall.

But this one tries to conserve structural determinism. And if you cannot conserve structural determinism, then there is a problem, there's miracle. Miracles are violations of structural determinism. So, the structural determinism is not an ontological assumption about reality. It's an abstraction of the coherence of experience. So, we explain using structural determinism. In these circumstances, a structure-determined system, which are the system that we deal with, is a system in which anything external that impinges upon it only triggers a change in it but does not specify the change.

For example, you have a recorder, you press the button, which says recording, and it begins to operate. It is not your doing, that is your finger that is doing the operation of the recorder, the structure of the recorder. The finger, by pressing the button, only the trigger this process. And if the tape recorder doesn't operate, you do not take your finger to be examined by the doctor. You take the tape recorder to be examined by somebody that understands it. OK so that is the circumstance.

Now, what happened with living systems is that the living systems are structure-determined systems that exist in a domain of interaction with other structure-determined systems. And these arrows indicate encounters. The medium insights on the living system, the living system insights on the medium. And in that encountering, the trigger in each other, they trigger in each other structural changes.

Now here is something very interesting that happens. If there is a history of recurrent structural changes, what happens is that system, a medium, change together coherently from the 0 to the end. And this is what structural coupling is, is a structural congruence and the history of structural congruence in conservation of the organization of the system and the coherence with the medium such that the encounters trigger all these structural changes without loss of organization. And the result of this is that whenever you have systems interacting recurrently, they change together congruently.

For example, here in this particular situation in which we are now, we came here, we encounter a situation, and we start talking with the persons that are making the film of this conversation. And some opinions were presented with respect to what could be done or what could not be done, then we talk among us, then we talk with them, and so on. And in the process, all of us change until a situation arose in which we are now, but which is not exactly the one that we thought at the beginning, not exactly the one that the team that is making the film thought at the beginning, is something else. We all change together congruently.

And if this had not happened, we would not have happened. And we say, oh, it cannot be done. I mean, these people want something that cannot be done, or we don't do it. For example, they could have, say, or we could have said, no, they don't want to do what we need. We go away, we don't do it. Instead of changing together concurrently, we have separated. No further recurrent interaction would have taken place. So, this is the fundamental thing. Whenever you have two systems interacting recurrently, they change together congruently as long as the recurrent interactions are concerned.

What happens when they're not concerned?

They separate or one or the other disintegrates.

And this connects with your understanding and use of conversation. Would you like to—

Yes, what I say here is that if the interacting beings are two living systems, here I have presented a living system and medium, but let's suppose you have two living systems interacting recurrently. Again, they are going to change together congruently, which I depict in this way. What you have is that the system that interact recurrently change together congruently.

Now, language is a manner of living together in recurrent interactions in such a way that the continuous outcome of the recurrent directions is seen, if there were an observer, is seen as a flow in coordination of behaviour. A, insights and B, insights and A. And what you see is a history of transformation together congruently. And this happens anyhow.

But this meta observer, this observer will see that the movie respects to the space and with respect to each other in a coordinated manner or they separate. Now, when what happens there can be acknowledged, can be seen by the observer as a flowing coordinations of coordinations of behaviour, a new phenomenon has arisen. And that new phenomenon is language. Coordination of coordinations of behaviour.

And not only that, I say consensual coordination of consensual coordinations of behaviour. Consensual in the sense that have arisen by the particularities of the interacting together. They have not been pre-established any way, have a reason there. Now, language is the manner of flowing in living together in coordinations of coordinations of consensual behaviour. And this is an entirely different phenomenon. It's completely new. You have a recursion in the interactions. And this new thing appears. Now a recursion takes place whenever the repetition of a particular operation is applied on the consequence of its previous application. And whenever that happens, a new phenomenon, a new kind of phenomena appears, a new dimension, a new fundamental dimension appears.

For example, working. If I were to work here, I would move my legs repeatedly. But the walking arises in the encounter with the floor. But not merely in the encounter with the floor, in the displacement of the floor, in the linear displacement of the floor as I repeat my circular movement of the legs. So, this linear displacement of the floor in my cyclic movement of the legs makes my cyclic moving of the legs a recursion in the interaction of the floor, and this new thing appears which is working.

So, language is a phenomenon appears in the recursion of the coordination of behaviour. This is why this coordinations of coordinations of consensual behaviors is something new. And language occurs in the flow of the coordinations of coordinations of consensual behaviour. But in this process, the structures of A and B change, according to the contingencies of the recursive interactions in coordination of behaviour.