



Mind and Systems Theory

Abstract: This is a critical evaluation of Fritjof Capra's systems theory in his book *The Web of Life* (Anchor Books, 1996) in relation to the understanding of our mind. The features of systems theory cannot be consistently applied to mind. Our mind is not a system and does not function as one. In order to be a system, mind needs to be physically evolved or emerged from gradually complexifying processes in nature. This, however, is one of my strongest refutations. Since mind is not a system, it cannot be explained as a mere by-product of the evolution of an organism, specifically the brain. Mind is a complex whole that has no analyzable parts. The special relationship between the mind and its physical counterpart, the brain, is a relation of what I call enmethexis or intro-participation.

This is a critical evaluation of Fritjof Capra's systems theory in his book *The Web of Life* (Anchor Books, 1996). His theory states that properties of the whole cannot be found on the level of its components or parts. The interrelationship between parts creates new properties, so called emergent properties, that are only intrinsic to the system as a whole and not to any of its parts.

In a former essay I argued, however, that it is not possible that a whole can have properties that are completely extrinsic or foreign to its parts. I made this statement in relation to my thesis that mind cannot have emerged from the brain, because it is something completely different from the underlying neuro-chemical processes.

I want to show now, that my argument is not necessarily opposed to Capra's systems theory, but includes it. My thesis is written from a philosophical point of view, whereas Capra writes as a scientist. His view is absolutely valid within the wider framework of a higher philosophy of mind, that I propose.

First I introduce Capra's criteria of a systems theory and its definition as understood by Capra. Page numbers of where the quotations can be found are given in parenthesis after the quoted text.

- "...the essential properties of a living system are the properties of the whole, which none of the parts have. They arise from the interactions and relationships among parts." (29).
- "...systems cannot be understood by analysis." (29)
- systems thinking is contextual thinking (30, 37) or *vernetztes Denken* (38)
- systemic properties are properties of the whole (36)
- "Systemic properties are destroyed when a system is dissected into isolated elements." (36)
- different system levels represent levels of differing complexity (37)
- "The systemic properties of a particular level are called 'emergent' properties..." (37)
- patterns are relationships of parts/objects (37)
- pattern of organization is the configuration of relationships of a particular system (80)
- the pattern of organization of all living systems has the network pattern as its most important property (82)
- "...every structure is seen as the manifestation of underlying processes." (42)
- process thinking in Bertalanffy's *Cybernetics* (51 ff.) and in Bogdanov's *Tektology* (43 ff.)
- the pattern of organization of a system is distinguished from the physical structure of the system (64)

- "...self-organization is the spontaneous emergence of new structures and new forms of behavior in open systems far from equilibrium, characterized by internal feedback loops and described mathematically by nonlinear equations." (85)
- "The *pattern of organization* of any system, living or nonliving, is the configuration of relationships among the system's components that determines the system's essential characteristics." (158)
- example of bicycle: "The complete configuration of these functional relationships constitutes the bicycle's pattern of organization. All of those relationships must be present to give the system the essential characteristics of a bicycle." (159) [1]

If new properties can emerge from the interrelationship of parts, then the structure or organization of these properties, their essence, must somehow already be intrinsic in the parts, although in a latent way. Since a system cannot have arbitrary properties, but only properties relevant to its structure and within the limits of its structural organization, the emergent properties must somehow be connected to the properties and the physical structure of its components. Otherwise the emergent properties would be random and could not be traced back to the interrelationship of certain clearly analyzable parts. The properties of a system are therefore typical and characteristic of the way parts interrelate. Different parts interrelate differently. Substituting a system's component with another not only changes the interrelationship the former component had with other components, but through the changing pattern of relation, one or more properties of the system may change, too, although this is not usually the case (s. identity of organizational pattern = system's properties). If we replace a part with a functionally different part, then the system's whole pattern change, and with it, the properties of the system.

This fact is very important to understand that a system cannot have properties that are not somehow related to its parts, although the system properties are never found within the parts themselves. The way the components of a system interrelate, what Capra calls a pattern of the network, is characteristic of system properties, is the very essence and existence of system properties. System properties depend on the interrelated patterns of the components. Any change in the components is reflected in the organization of the system, in its idiosyncratic pattern. This close relationship between system properties and the pattern of relationship between the components show that my proposition, that a system is the product of its components and that system properties cannot be foreign to the components of the system, must be true. My view is the wider angle of philosophy which Capra lacks, since he is primarily a scientist.

The necessary connection between patterns or objects or parts of a system and the properties of the whole emergent at differing systems level is obvious, otherwise a system would not be a coherent, synergetic whole, but would either fall apart with every fundamental change of its parts or behave erratically and against all natural laws. Although there is a natural frame of determinism that regulates what kind of properties emerge at a particular level, Capra's definition of self-organization is still valid, because it allows the spontaneous emergence of new structures or forms of behavior, but only within certain limits.

It is also interesting that systems theory claims that system properties are destroyed when the system is severed into parts. Regarding the mind, we certainly do not have the possibility to disintegrate the whole. The mind is and remains a unity, even if we make some artificial differentiation in respect to its functions, such as will, reason, ratio, etc. A living system is always analyzable into parts, although by doing this we do not understand the system, but only the functionality of certain parts. Mind, however, cannot be analyzed into parts. What are the parts or elements of mind? Will, reason? This is not verifiable, because mind appears to us as an immaterial entity and as a unified whole, and as such, we cannot find will or reason located anywhere in the brain, although certain regions of the brain may be excited more if will or reason is exerted. Since mind is never will or reason alone, but always a unity that consists of different faculties interlocked into each other and working synergetically together, mind cannot be taken as a system in the sense of systems theory and therefore, the above-mentioned thesis of mind-brain identification is obsolete and fallacious. The properties of the mind, such as non-locality and immateriality and unity cannot be found in the brain processes, nor is there any logical and necessary connection between the patterns of the brain network and the properties of consciousness and mind. Any correlation is purely contingent. Also, I believe that correlation is

not understood in the right way by neuroscientists. Just because two completely different events occur simultaneously, that does not mean that the one is the cause of the other.

If we change the patterns of a system, the functional relationships, the properties of the whole change, too. If we change neuro-chemical processes in the brain or artificially fire neurons in a particular region of the brain, we do NOT change the properties of the mind, but only its contents. If we try to break down the mind into components, such as reason and will, or into cognitive functions, such as perception, the properties of the whole still remain the same. Capra's definition and criteria of a system do not hold for our mind. The mind is therefore not a system as a living organism is a system or the earth is a system. Therefore, modern theories of mind (emergentism, epiphenomenalism, identity-theory, materialism, physicalism, etc.) which generally tend to describe mind as a result of biological evolution must be refuted not only on the above-mentioned reasons but on other reasons, too, which I mentioned in other essays.

That also shows the inherent limitation of systems theory for the ultimate understanding of the human being. It may be the best tool for understanding nature, science has so far come up with, but when it comes to mind and consciousness, systems theory is inadequate. It will become widely popular as have been conventional views such as computationalism, cybernetics, Neo-Darwinism, etc. All these views had to be reviewed and were questioned seriously over the last few decades, as Capra clearly shows in his book. The same will happen with systems theory in the future. Currently it is a great theory for understanding the complex and intricate relationships in nature. The idea of the world as a vast network of relationships is not only intriguing, but moreover conducive to shifting rational thinking to a higher level of holistic thinking, that ultimately will lead to Transrational Thinking (Paranoesis). This shift of thought will not occur within the multitude of mankind, but only within the realm of science and philosophy, since higher forms of thinking are not necessary for everyday living or for technological applications. [2]

My argument is important for the study of consciousness, because it sustains the hypothesis that consciousness (here in the wider sense of 'mind') is neither a product nor an emergent system of the brain or any physical processes. Since mind is a complex whole that is not analyzable into parts, any underlying processes that are constitutive of the mind must have an implicate participation in the system properties of the mind (I call this kind of participation in regard to Plato: Enmethexis or intro-participation). No logical and scientific analysis will ever produce a coherent relationship between the mind as the system and the neuro-chemical processes of the brain as its components. No interrelationship of physical brain processes, however complex, will ever lead to emergent mind properties, nor have any links been found so far. All the correlations that scientists purport to have found as conclusive evidence for the mind as product of the brain are ill-founded, premature and mendacious. Since the working methodology of science is reductionism and materialism, it is not astonishing at all that scientists tend to find exactly what they want to be the truth. The method of science determines its results and findings. A value-free and objective method is necessary to study mind in its true nature. Philosophy and specifically metaphysics is *the* tool for investigating the mysterious depths of our mind. Although there are many dangerous paths and pitfalls through the metaphysical territory, with the right method and the right thinking it is possible to construct a metaphysics that is free of the deceitful sophisms that was the hallmark of former bloated and hubristic systems of metaphysics.

[1] Although the parts of a bicycle can be substituted by other parts with different or similar forms, the functional relationship nevertheless remains the same, otherwise the whole can no longer be called 'bicycle'. Capra concedes this but does not recognize the implications this has for the understanding of mind. He reduces mind to cognitive processes, but only because his understanding of mind is limited to the basic functions of our mind, such as perception, memory, emotion. He never covers thought, thinking or even philosophical thinking. His view is biological and ecological, but not philosophical. He writes as if he solved the mind-body problem. This is a pretentious drift in his book, based on his overly optimistic belief in the new systems theories. In my view, systems thinking is only an approach and a first step to an even higher thinking, philosophical and ultimately, Transrational Thinking (Paranoesis).

[2] Similarly, systems thinking is not necessary for us, although it may change radically the way we interrelate with nature. From the point of view of evolution, empirical thinking as we use it everyday is sufficient for survival. Higher forms of thought are not easily amenable to the average person, because it is actually an unnatural form of thinking. Empirical thought corresponds to the activities of nature, but philosophical thought doesn't. Therefore, even if systems thinking, for example, will become popular within the scientific community, it does not necessarily mean that it is also reflected and adapted within the rest of humankind. On the contrary. Since the beginning of this century, the theory of relativity and quantum physics have radically changed traditional views or the way empirical thinking perceives and conceives of the world and nature. Almost a century later, we still cling stubbornly to the empirical view, because this view is most inveterate in our mind and because it harmonizes deeply with our biological structure, with which most people in the world identify themselves.

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