On the reflective aspect of Experience:
Varela and Luhmann

Shinya Noé (Tohoku Institute of Technology)
noe@tohtech.ac.jp

Francisco Varela (1946-2001), one of the most eminent cognitive scientists and most staunch defenders of the theory of autopoietic system, acknowledged that he was deeply influenced by Husserl in criticizing the classical scientific tradition of objectivism, which presupposes the standpoint of an "outer observer" and at the same time conceals it. Scientists ask, "What is mind?" "What is cognition?" and in the course of these investigations they forget just who is asking this question. In short, science lacks self-included reflection. But of course, by including ourselves in the reflection, we immediately run into the problem of self-reference, which has been investigated in the phenomenological tradition from Husserl on. Varela dared to carry out the conversion from the standpoint of an "outer observer" to the standpoint of the "system itself" and committed to the problem of self-reference, that is, the recursive structure which was not viewed as an empirical reality in the scientific thinking of the time. In this paper we try to assess the degree to which his position approaches and departs from Husserl's transcendental phenomenology.

In the introduction to *The Embodied Mind* (1991), a joint work with Evan Thompson and Eleanor Rosch, Varela refers to the works of cognitive scientists such as Douglas Hofstadter, Daniel Dennett, Ray Jackendoff, etc. and says as follows:

> Although we share the concerns of these various works, we remain dissatisfied with both their procedures and their answers. Our view is that the current style of investigation is limited and unsatisfactory, both theoretically and empirically, because there remains no direct, hands-on, pragmatic approach to experience with which to complement science. As a result, both the spontaneous and more reflective dimensions of human experience receive little more than a cursory, matter-of-fact treatment, one that is no match for the depth and sophistication of scientific analysis.[1]

The distinctive characteristics of modern science consist in objectifying all things and formalizing the knowledge of the objective. Cognitive science is and has been such an activity characterized by objectification and formalization. In the beginning Varela, as a cognitive neuroscientist, sought to find the essence of cognition in the activities of neural systems of the brain. In due course, however, he felt as though he was standing in front of a door he could not open. For him it seemed that there is an unbridgeable gap between the internal descriptions of lived experience and the scientific

[1] F. Varela, E. Thompson and E. Rosch, *The Embodied Mind: Cognitive Science and Human Experience* (MIT Press, 1991), p. xviii.

descriptions of its natural biological basis. He sought a connecting link between the world in front of the door and the world behind the door and finally found the key to open the door in phenomenology as a "direct, hands-on, pragmatic approach to experience with which to complement science."

Historically speaking, Goethe was the first to recognize that there is an unbridgeable gap between the world of lived experience and the world of scientific descriptions. In his *Farbenlehre* (1810) he criticized Newton who tried to explain the phenomena of color formally (mathematically) by the spectrum analysis of light wave in his *Opticks* (1704). He thought that the colors perceived in direct experience could not be reduced to the formal properties such as refractive index of light wave etc. and sought to establish the color science based on intuitiveness. Goethe's attempt at the color science has a relevancy for the leading motive of Husserl's phenomenology. Husserl, like Goethe, had a strong feeling of crisis toward the tendency of modern science to separate from the basis of intuitiveness. Starting his academic career as a mathematician in the end of the nineteenth century, Husserl opposed formalistic methodology in nineteenth century mathematics and tried to found the concept of number on the basis of intuitiveness of mental act of counting in his *Philosophie der Arithmetik* (1891). There is a close affinity between the fact that Goethe opposed Newtonian optics and the fact that Husserl opposed formalistic mathematics. Although it was almost inevitable that their attempts took on untimely character in their respective times, their attempts implied radical criticism of the methodology of modern science. Swimming against the current, both Goethe and Husserl returned to the basis of intuitiveness and sought to reconstruct knowledge on it. If the leading motive of phenomenology consists in reconstructing knowledge on the basis of intuitiveness, we may say that Goethe was the first phenomenologist before Husserl (in fact, Goethe's color science is worthy of the name "phenomenology of color").

The motto of phenomenology "to the things themselves" means in the first place that we should return to the basis of intuitiveness (direct experience). In the second place it means that we should adapt the method to the thing and should not adapt the thing to the method. The point is that phenomenology, in the course of the analysis of things themselves, pressed by the thing itself, seek an appropriate method and thereby continually opens new horizons. Modern science, on the contrary, attempts to adapt all things to its method (objectification and formalization) indiscriminately and compulsorily.

Varela had the critical mind that was common with Goethe and Husserl in essence. He thought that, in order to understand the essence of cognition, he should enter into the dimension of the unobjective underlying the objective that is captured by the method of objectification in science and, in the end, encountered phenomenology as the method to capture the unobjective.

The unobjective underlying the objective is the act of objectification of consciousness that constitutes the objective as such a thing. The problem now arises: The act of objectification itself remains anonymous as what cannot be objectified as long as the process of objectification is pursued. Science goes directly toward the objective that is considered to be "out there" in itself and thereby neglects the act of objectification underlying the objective. As Ulrich Claesges says, "the

world of objective science is determined by a particular relation of consciousness to its object, but this relation itself remains concealed."[2] Science therefore cannot realize the total knowledge that expresses the totality of experience. Or rather, as Gadamer said, science relinquishes the claim for total knowledge from the beginning. Anyway, it is inevitable that scientific knowledge remains partial and fragmentary. Phenomenology, on the contrary, attempts to turn its gaze of reflection on the act of objectification underlying experience and thereby realize the total knowledge of experience.

The further problem now arises: To reflect on the act of objectification means inevitably to objectify it. Phenomenological reflection, therefore, is a paradoxical effort to objectify what cannot be objectified, an endless chain of reflections, and bears the indication of unfinished nature. Merleau-Ponty linked the task of phenomenological description of human experience to the painstaking work of modern writers and painters such as Balzac, Proust, Valery, and Cézanne.[3] The unfinished nature of phenomenology is inevitable because we always live our experience as a whole and the claim for total knowledge of experience belongs to the essence of life. (We cannot live our experience as a part or a fragment. The most inherent characteristic of life is what the Greek called *hen kai pan*.) To be total, in this case, does not mean to be complete. Because of its incompleteness, it is natural that phenomenological description as total knowledge is to be complemented by scientific description as partial knowledge.

Varela himself, however, was dissatisfied with the procedure of endless chain of reflections. As we saw, he complained about the lack of "direct, hands-on, pragmatic approach to experience with which to complement science." He asks: "Where can we turn for a tradition that can provide an examination of human experience in both its reflective and its immediate, lived aspects?"[4] At this point he took a bold step toward "non-Western traditions of reflection upon experience"[5] and focuses on the Buddhist method of examining experience.

> We have argued that it is necessary to have a disciplined perspective on human experience that can enlarge the domain of cognitive science to include direct experience. We suggest such a perspective already exists in the form of mindfulness/ awareness meditation.[6]

Mindfulness means to be present with one's mind. According to Varela, "mindfulness techniques are designed to lead the mind back from its theories and preoccupations, back from the abstract attitude, to the situation of one's experience itself."[7] What he learned from Buddhist teachers is that knowledge, in the sense of prajna (wisdom or maturity), is not knowledge *about* anything.

---

[2] U. Klaesges, *Edmund Husserls Theorie der Raumkonstitution* (M. Nijhoff/Springer, 1964), p.11.
[3] M. Merleau-Ponty, *Phenomenology of Perception* (Routledge, 1962), p. xxi.
[4] *The Embodied Mind*, p. 21.
[5] *Ibid*.
[6] *Ibid.*, p. 33.
[7] *Ibid.*, p. 22.

"There is no abstract knower of an experience that is separate from the experience itself."[8] Cognitive sciences cannot reach direct experience as far as they remain knowledge *about* experience. What he suggests is a change in the nature of reflection from "an abstract, disembodied activity" to "an embodied (mindful), open-ended reflection."[9] By *embodied*, he means reflection in which body and mind have been brought together. What this formulation intends to say is that "reflection is not just *on* experience, but reflection *is* a form of experience itself."[10] At this point Varela argues that the phenomenological tradition, from Husserl on, was able to offer only a project of theoretical reflection *on* experience. This is the point at which he departs from Husserl's transcendental phenomenology.

Such a complete coincidence between reflection and experience seems to prepare the way for a kind of mysticism. In fact, if we think of such coincidence as perpetual, we are drawn into a genuine mysticism and must abandon the viewpoint of systems theory. We should remember here Husserl's insight into the temporality of experience, that is, the thesis that experience always endures in time. Reflections, too, always occur in time. Therefore, the identity of reflection and experience, what is reflecting and what is reflected (the identity of the "self") is always mediated by time. It is, so to speak, "identity through difference." At this point, Niklas Luhmann (1927-1998), another most staunch defender of the theory of autopoietic system, speaks of *reflexivity*, that is, "processual self-reference" based on the distinction between *before* and *after*. A "process" emerges with the help of the before/after difference. The "self" is nothing but the "system" as a network of these "processes." The "system" is able to sustain itself as self-identical in time. It seems that Luhmann's view suggests a possibility of speaking of the "identity through difference" between reflection and experience in the terminology of systems theory. Luhmann said as follows:

> Ein Akt kann intentional nur auf etwas anderes gerichtet sein, nie auf sich selbst, denn er hebt sich selbst im Vollzug auf. Systeme hingegen können sich im Zeitlauf identisch halten; nur sie können daher reflexive Aktformen entwickeln, die zwar nicht den intentionalen Akt selbst, wohl aber das handelnde System intendieren.[11]

Luhmann said that a "important preparatory work toward a theory of psychic systems based on consciousness was provided by Husserl." [12]In fact there are noteworthy internal relationships between Husserl's thought and the theory of autopoietic systems both in respect of historical contexts and in respect of theoretical results obtained from them. Historically stated, Husserl's turn from static to genetic analysis of consciousness corresponds to the development from structural to autopoietic standpoint in systems theory. In particular, Husserl's analyses of passive constitution

---

[8] *Ibid.*, p. 26.
[9] *Ibid.*, p. 27.
[10] *Ibid.*
[11] N. Luhmann, "Reflexive Mechanismen," in *Soziologische Aufklärung 1: Aufsätze zur Theorie sozialer Systeme* (7. Aufl., VS Verlag für Sozialwissenschaften, 2005), p.126.
[12] N. Luhmann, *Social Systems* (Stanford Univ. Press, 1995), p.263.

pursued in the 1920s under the title of "analyses of passive synthesis" could be interpreted as an anticipatory description of self-organizing process of consciousness as an autopoietic system.

According to Luhmann, consciousness is a self-referential autopoietic system, because consciousness is a living system and life is defined as autopoiesis. He presented the thesis that *Gedanken* or *Vorstellungen* are the components of consciousness in his article "Die Autopoiesis des Bewußtseins" in 1985. However, we immediately get into trouble in defining the components of consciousness as *Gedanken*, because it is only a particular type of act of consciousness and there are many other types as well. In 1992 Luhmann himself said:

> Man spricht von Wahrnehmen, Denken, Fühlen, Wollen als verschiedene Fähigkeiken des Bewußtseins und lässt dabei offen, was denn die Einheit (der Operationsweise) des Bewußtseins ist. Sicher geht es um ein Prozessieren von Aufmerksamkeit, aber welches Wort sollte man wählen, um dies zu bezeichnen? Ich habe vorgeschlagen, von Denken zu sprechen, bin damit aber nicht sehr zufrieden. Husserl hatte, und das wäre ein weiterer ernstzunehmender Kandidat, von intentionalen (gerichteten) Akten gesprochen.[13]

We can sill find the elementalistic bias of nineteenth-century empirical psychology in Luhmann's thesis. We should remember here that Husserl opposed elementalistic methodology in nineteenth-century psychology in terms of the concept of intentionality. Following Brentano, Husserl considered mental phenomena as those phenomena that contain objects intentionally within themselves and found inseparable correlations between acts of intention (noesis) and objects of such acts (noema)—for example, as Brentano said, no hearing without something heard, no believing without something believed, etc. We should think of the components of consciousness as an autopoietic system, following Luhmann's own suggestion and Husserl's insights, noetico-noematic correlations.

As Klaus Held says, "consciousness cannot be imagined as an empty beach, with the ocean washing random objects ashore. It is not a container indifferent to what fills it."[14] Consciousness consists of various acts (noesis) whose character is in each case determined by the kind of corresponding object, and the object can appear to consciousness only in the corresponding manner of givenness. Here Husserl sees the "universal a priori of correlation between experienced object and manners of givenness." (Hua VI. 169Rb.) That is to say, when we perceive an object, it is previously given as what is perceived in consequence of the productivity of consciousness (the productivity is not necessarily "active," it can be also "passive"); when we remember an object, it is previously given as what is remembered in like manner and we never confuse what is perceived with

---

[13] N. Luhmann, "Die operative Geschlossenheit psychischer und sozialer Systeme," in *Soziologische Aufklärung 6: Die Soziologie und der Mensch* (2. Aufl., VS Verlag für Sozialwissenschaften, 2005), p.31.

[14] K. Held, "Husserl's Phenomenological Method," in D. Welton (ed.), *The New Husserl* (Indiana Univ. Press, 2003), p. 14.

what is remembered.

To summarize the major characteristics of consciousness, self-reference and autonomy (absence of foundation) are of most significance. Transcendental consciousness is nothing else but the consciousness that bears these structural characteristics. Husserl speaks of the "transcendental self-constitution" of consciousness, which means that transcendental consciousness is "continuously constituting itself in itself." (Hua I. 100) Here we can see a noteworthy structural isomorphism between transcendental consciousness and autopoietic systems. The elements of transcendental consciousness are self-referentially constituted noetico-noematic correlations. They form a network by linking up together. Noetico-noematic correlations are recursively produced and reproduced by a network of noetico-noematic correlations.

In this way, with a revised concept of the components of consciousness, we can say that there is a possibility of integrating Husserl's transcendental phenomenology with the theory of autopoietic systems in the investigations of the structure of experience.