東京大学教養学部哲学・科学史部会　哲学・科学史論叢第十三号　平成 23 年 3 月（1-17）

A free-will problem in contemporary sciences —A view from applied phenomenology

Junichi MURATA

1 The age of *application*

Today, everyone talks about application in the academic world. Philosophy is no exception.

For the last few decades, almost every philosopher has tried to discuss issues related to the application of philosophy and ethics.

In the field of applied ethics, new streams such as bioethics, environmental ethics, information ethics, engineering ethics, and now neuroethics have been introduced consecutively, and have been discussed. Various societies whose titles include "applied philosophy" have been established and their influence seems to have developed. Now, even phenomenololgists discuss applied phenomenology.

In this regard, many things can be discussed, but here I would like to point out two characteristics related to this situation.

First, this tendency reflects a difficult new situation in almost every field of our life world, which has emerged under the influence of the development of new sciences and technologies.

Take one example from bioethics. The development and use of new life-support technological systems have engendered a new patient situation called brain death, and it has become necessary to answer questions as to whether brain death can and should be regarded as the genuine death of a person and whether it is acceptable to transplant internal organs from patients in this situation. We cannot find answers to these questions automatically on the basis of traditional philosophical and ethical views about life, death, and the self. Rather, we must reconsider what life and death are and what the self is, corresponding to a new concrete situation.

Second, it is misleading to interpret the role of applied ethics as a simple application of established ethical principles. Rather, it is an attempt to constitute new

ethical rules corresponding to a new situation. One could say that in the field of applied ethics more fundamental problems are dealt with than in the field of *pure* ethics, because in the field of applied ethics we must deal with concrete, real problems and commit ourselves to the creative task of finding new principles that are applicable to them. I think the same situation can be found in the wider fields of so-called applied philosophy, which deal with practical problems.

What about applied phenomenology?

I think the fundamental situation of applied phenomenology is no different. However, I would like to emphasize one characteristic that is specifically conspicuous in the case of phenomenology.

Phenomenology is not a philosophical theory constituted of definite epistemological or metaphysical principles or doctrines. What makes phenomenology characteristic is its method or attitude. The well-known method of phenomenological reduction is a methodological demand to move away from various dogmatic attitudes to a critical attitude, in which various phenomena are described in a way that criticizes tacitly accepted presuppositions. If we can understand phenomenology in this way, phenomenology as a methodological principle cannot achieve the purpose of its task without applying its method to various concrete phenomena, and a pure or basic phenomenology without application would be meaningless.

Consider the phenomenology of perception. Does it belong to pure or applied phenomenology?

In the case of Husserl, a phenomenological analysis of perception plays a central role not only in a thematic sense but also in a methodological sense. Various important concepts such as adumbration, horizon, kinesthesis, and passive synthesis, which are found out through the analysis of perceptual experience, play a guiding role in the analysis of various other experiences.

Think of phenomenological psychology. As is well known, Husserl claims that the content of phenomenological psychology is no different from that of pure or transcendental phenomenology. That means pure phenomenology without a concrete phenomenological analysis of various experiences is empty.

Of course, we can use the concept of application when we extend the phenomenological investigation to a new field, as in the case of the recent development of phenomenology of nursing. In order to investigate the structures of experiences of

nurses and patients phenomenologically, we need to use various insights inherited from previous works of phenomenologists. Various works on the phenomenology of perception and action, phenomenology of selves and others, or phenomenology of technology would be very helpful. However, even if we can use the concept of application in this context, it does not mean there is a finished theory that can be simply applied to a new field. Rather, we must work creatively from a phenomenological perspective and find new structures of experiences that nurses and patients have in hospitals or various places where care is provided. As this work is related to the meaning of life and death in contemporary societies, the result of applied phenomenology in the context of nursing would influence the central core of pure phenomenology of the life-world and the existence of human beings.

What I have written here is only a short and rough sketch of my understanding of the meaning of applied phenomenology. I am not sure to what extent it is appropriate. In any case, in the following, I would like to deal with the free-will problem, which is discussed in contemporary psychology and especially in the brain sciences. As the free-will problem has a central position in phenomenological philosophy, this task is considered to belong to pure phenomenology. On the other hand, I will focus on the recent results of various investigations on the free-will problem carried out by psychologists and brain scientists, so it could also be understood as a task of applied phenomenology.

2 Free will and determinism

(1) The contemporary status of discussions

The philosophical problem of free will and determinism is one of the most popular but the most complex and difficult problems in the history of philosophy. The problem took various shapes corresponding to ontological presuppositions that were dominant in each epoch. However, the problem seemed to be so deeply rooted in our fundamental conceptual scheme that its difficulty remained as unshakable as an impregnable fortress.

Everyone seems to know very well what a free will is. Free will is the capacity to decide and perform an action freely, which everyone in normal situations seems

to experience every day. Only on the basis of it can our concepts of responsibility and ethics be possible. On the other hand, it seems also to be evident that no event in our world occurs without some cause. In this sense, every event seems to be causally determined by previous events in some way or other.

Both facts are apparently so natural that we cannot neglect either, and must retain both of them.

Many philosophers today claim that free will and determinism are compatible. One of the main reasons they propose this is that the meaning of an action that is causally determined is not the same as that of an action that is brought about under coercion or is controlled by external factors. As long as actions are performed in the way the actors want, they are considered to be free.

Against this claim of the *compatibilists*, the *incompatibilists* stress that we can apparently fail to be free even when we do what we want: for instance, when others manipulate our wants. If our decision-making is causally determined by previous events and there is no possibility of deciding otherwise, our decision-making seems to be just like that of a person who is hypnotized and controlled by the hypnotist.

Should we deny determinism if we want to retain free will?

This is not so simple. If our will exists without any cause, it is just an event that happens without any consistent relation with previous events and occurs only by chance. Perhaps it would be the result of a quantum jump or other undetermined events in our brains. In any case, it is difficult to regard such an accidental event as free will or free decision-making, to which the concept of responsibility is applicable. At this point, incompatibilists must deal with another compatibility problem, i.e., the problem of how to make the compatibility between free will and indeterminism understandable. Different varieties of incompatibilists part ways at this point. Some incompatibilists who deny this compatibility and defend determinism hold that there is no free will in this world. They are called hard determinists. Others deny determinism and still claim that they can retain the possibility of free will in some way or other. There are a number of versions of this position held by libertarians. In the main they claim that there is a possibility of realizing an autonomous, self-determining process that is characterized, for example, by the concept of agent causation or self-forming action.

In this way, various answers to the problem have been proposed, and discussions

have become more and more complex. However, no way out of the difficulties can be seen.

(2) A possible response from a phenomenological perspective

Now, what kind of answer do we have from a phenomenological perspective?

Can phenomenology contribute to solving or dissolving this traditional metaphysical problem?

If there should be a phenomenological answer to this problem, is it a compatibilist or incompatibilist version?

I think a typical answer would be the following:

Phenomenologists need not respond to this kind of question directly because the traditionally discussed questions concerning free will are meaningful only on the presupposition of a certain ontology or metaphysics. In particular, since the beginning of the modern era, the Cartesian dualism of mind and body has dominated our conceptual scheme in an apparent or hidden way.

If we can take this presupposition into epoche and go back to and focus on the field of our experience itself, we will have a more appropriate concept of freedom and determinism, and the sharp contradiction between them would be dissolved.

Merleau-Ponty, for example, proposes in the final part of his *Phenomenology of Perception* the concept of "freedom within a field" (Merleau-Ponty 1962. 438f./500). The situation, from which and into which we act, is a field that is open to our various actions but that at the same time limits, motivates, and orients our actions in some possible direction. Without such a motivating situation, we cannot choose one definite action from among various possibilities and can never begin an action at all.

"What then is freedom? To be born is both to be born of the world and to be born into the world. The world is already constituted, but also is never completely constituted; in the first case we are acted upon, in the second case we are open to an infinite number of possibilities. But, this analysis is still abstract, for we exist in both ways *at once*. There is, therefore, never determinism and never absolute choice. I am never a thing and never a bare consciousness." (Merleau-Ponty 1962/1945, 453/371)

If we can confirm this phenomenological characterization of freedom, according to which freedom is to be considered to be embodied, situated, and ambiguous, we can clarify how abstract the traditional problem setting of free will is, and it could give us a possible way out of the dilemma or antinomy between freedom and determinism.

Before Merleau Ponty, Husserl also tried to explicate this dual character of our freedom. Especially in his *Ideen II*, he proposed an interesting view of it.

On the one hand, Husserl confirms the autonomous character of free will in the traditional sense, which plays an important role in the "personalistic" attitude.

"Therefore the *autonomy of reason*, the "freedom" of the personal subject, consists in the fact that I do not yield passively to the influence of others but instead decide for myself. Or again, it consists in this, that I do not let myself be "drawn" by any other inclinations and drives but instead act freely and do so in the mode of reason." (Husserl 1989/1952, 282/269)

On the other hand, he emphasizes that this higher "spiritual" (geistig) level of freedom does not function independently of lower "physical" level of freedom (physisches "Ich kann"). The physical level of freedom is the freedom to move and control our own bodies freely. This physical freedom constitutes "a permanent normal substratum" for the spiritual freedom (Husserl 1989/1952, 266/254). This physical level of freedom is also called a natural side of the spirit. In this sense, Husserl finds a natural aspect in the spiritual or personal being that can act freely and autonomously in the mode of reason, but at the same time he finds an aspect of freedom in the natural or physical being that has the capability of moving and controlling its body.

"Spirit is certainly not an abstract Ego of position-taking acts, but it is I, the full person, the Ego as a human being, the I of the I take a position, the I think, I evaluate, I act, I accomplish works, etc. To me pertains then a basis (Untergrund) of lived experiences and a basis of passive nature ("my nature") manifesting itself in the tumult of lived experiences (in dem Getriebe der Erlebnisse). This passive nature is the psychic in the sense of physiological natural psychology, but it even

reaches into the sphere of position-takings themselves, and even these have a natural side and enter into disposition." (Husserl 1989/1952, 397/388)

From this perspective, mind and body, or, freedom and determinism are not simply opposed, but are intertwined with each other. If this perspective is possible, the problem of freedom and determinism must be radically transformed.

The question now concerns not whether both factors are compatible or not, but rather how both factors are related. Freedom and determinism, or, free will and bodily activity are not conflicting factors, but rather are factors that cooperate in a concrete realization process of various actions. To describe this concrete process and clarify the relations among various factors is the essential work of phenomenology, or the essential work of *applied* phenomenology. In this sense, the phenomenological answer to the free-will problem is not the end of the discussion, but rather is the beginning of the work. Phenomenology is a working philosophy (Arbeitsphilosophie).

In order to see the characteristics of this phenomenological work, in the next section, I would like to take up recent discussions concerning the free-will problem in contemporary neurosciences and philosophy of mind, and see how phenomenology can respond and contribute.

3 Phenomenology and brain sciences

(1) Challenges from contemporary brain sciences

The philosophy of mind has always developed along with the development of sciences related to the mind, such as psychology, physiology, and biology. Especially since the 1990s, neuroscience or brain science has developed rapidly and has greatly influenced discussions on the philosophy of mind. On the basis of the results of various animal experiments, development of imaging technologies, and investigations of patients who have suffered from brain damage, the brain sciences have gradually clarified the cognitive role of each part of the brain. The brain is now considered to be a model of the mind. Through this process, there have been various interesting results and the traditional way of understanding the mind and consciousness has been questioned in many ways.

Given this situation, many people claim that recent results of studies in the brain

sciences demonstrate how greatly the cognitive lives of human beings are influenced by unconscious dimensions, and therefore that a phenomenological description from a first-person point of view has only limited validity.

In the famous case of blindsight patients, for example, the subjects can find the correct answer visually if they are forced to discriminate between stimuli although they maintain they cannot see the stimuli but can only guess them. That means they seem to be able to see from a third person perspective, but they do not seem to be able to see from a first person perspective. If some type of vision is possible without consciousness, as in the case of blind sight, the phenomenology of vision, which can cover only conscious vision from a first-person perspective, seems to have only limited scope.

Brain scientists, such as Milner and Goodale, showed that there are two independent pathways in the brain, which correspond to two different visual functions. One is the function of vision for perceptual cognition, and the other is the function of vision for action. On the basis of this theory, Milner and Goodale explained that there are cases of brain-damaged patients who can see an object but cannot act on it (optic ataxia) or who can act on an object but cannot see it (visual agnosia).

According to our common-sense understanding of the relation between vision and action, we naturally think that we can control an action appropriately only on the basis of conscious vision. However, if the dual visual system theory is correct, we cannot simply consider our commonsense understanding. The phenomenological descriptions based on conscious experience of vision and action seem to have only limited validity.

As for the concept of free will, D. Wegner conceives an interesting experimental setting, in which "the illusion of conscious will" can be demonstrated. In the experiments conceived by Wegner, it can be shown that people feel they are willing an act that they in fact are not doing, or they feel they are not willing an act that they indeed are doing.

The well-known example of table-turning can be interpreted as the second case. In this case, people sit around a table, each with his or her hands flat on its surface. While the people believe the table begins to turn on its own, they actually move it. On the other hand, Wegner fabricated an experiment, the *I Spy* experiment, in

which two people sit in front of a computer screen and cooperate to move a pointer on a screen. According to Wegner, people would feel they had moved a pointer on a computer screen if they simply thought about where the pointer would go on a screen just in advance of its movement, even though the movement in fact is produced by the other person (Wegner 2002, 74). "People experience conscious will when they interpret their own thought as the cause of their action" (Wegner 2002, 64).

(2) Is there a phenomenological illusion?

These examples seem to demonstrate impressively that a phenomenological description on the basis of a first-person perspective has very limited validity. Many philosophers believe these results falsify the traditional phenomenological view of experience. Some stress the requirement of hetero-phenomenology instead of auto-phenomenology (Dennett 1993), and others indicate that a phenomenological description is nothing but a phenomenological illusion (Searle 2005).

However, we have already seen how biased this kind of criticism of phenomenology is. Phenomenology, at least phenomenology in the sense of Husserl or Merleau-Ponty, does not restrict its themes to a field that can only be consciously available in the first-person perspective. According to Husserl, I as a person consist of a spiritual side and natural side, and both sides cannot be separated. In normal cases both sides function in an integrated way, but we sometimes experience discrepancies between them. For example in the case of slips or so-called cases of weakness of will, I sometimes do things other than what I decide to do. "*Prior* to the will with its active thesis of "*fiat*" lies action as an instinctive action, e.g., the involuntary "I move," the involuntary "I reach" for my cigar" (Husserl 1980/1952, 270/258).

Merleau-Ponty also stresses that my free decision-making, however lonely it seems to be, cannot be realized without any motivation, and that it is possible only on the basis of my history, which is formed in relation to other people, is sedimented to my tacit dimension, and forms the background of each action. "Far from its being the case that my freedom is always unattended, it is never without an accomplice, and its power of perpetually tearing itself away finds its fulcrum in my universal commitment in the world" (Merleau-Ponty 1962/1945, 452/516).

Surely we cannot thematize and clarify the natural side of a personal being or the universal commitment of our freedom when we remain in the first-person perspective in the narrow sense of the term. To thematize and clarify them, various investigations in the sciences, especially psychology and brain sciences are helpful. However, this does not mean that the empirical sciences are almighty and phenomenology is incompetent.

First, the results of empirical sciences always have an ecological limitation, as they can be obtained only in certain experimental settings. We cannot unconditionally extend the scope of the results obtained in laboratories to everyday situations. Second, the results of the investigations are always understandable only through various interpretative activities, but the interpretations of scientists are sometimes biased by traditional conceptual schemes and tacitly oriented in a certain direction. Especially when it comes to the mind-body-problem and problem of free will, we must be very careful. It is exactly at this point that phenomenology can be helpful in bringing these tacit presuppositions to light and opening an alternative interpretation.

If we start from *this* phenomenological perspective, various results brought about by the brain sciences are considered to be far from falsifying this perspective. Rather, they offer concrete data to fill empty spaces in the conceptual scheme of the embodied freedom in the world and make it more persuasive.

Now, let us begin to take up and examine one of very popular results of recent brain sciences, i.e., the experiment of Benjamin Libet.

4 Libet's experiment from a phenomenological perspective

(1) Libet's experiment

What makes Libet's experiment intriguing is its originality and his interpretation of the results (Libet 2004, 124ff.).

Before Libet's experiment, Kornhuber and Deecke found that a recordable electrical change in brain activity regularly and specifically preceded a voluntary act. The voluntary act that subjects were asked to perform was a sudden bending or flexion of the wrist or fingers. The electrical change, which is called the *readiness potential* (RP), started about 800 msec or more before a subject performed an apparently voluntary act. The RP produced in each voluntary act was measured with

scalp electrodes overlying the motor area of the cortex.

While Kornhuber and Deecke did not consider the question of when the conscious will to act appeared, Libet tried to identify exactly when the conscious will appeared. In order to accomplish this task, he used a large clock, around which a spot of light moves so rapidly that a subject can report fractions of a second.

The subject was seated before this clock and asked to perform a freely voluntary act, a simple but sudden flexion of the wrist at any time he felt like doing so. He was asked not to preplan when to act. He was also asked to associate his first awareness of his intention (or wish or urge) to move with the clock position of the revolving light spot. Only after having finished trial, was he asked to report the clock's time. This method hopefully excludes the possibility that other factors would disturb identifying the exact time of conscious will.

Now the result was as follows:

"What we found, in short, was that the brain exhibited an initiating process, beginning 550 msec before the freely voluntary act; but awareness of the conscious will to perform the act appeared only 150–200 msec (reported time W) before the act. The voluntary process is therefore initiated unconsciously, some 400 msec before the subject becomes aware of her will or intention to perform the act." (Libet 2004, 123f.)

Libet's results of the experiment:

−1000〜800 msec		RP1 onset (when the act was prepared)
	↓	
−550	msec	RP2 onset (when the act was initiated spontaneously)
	↓	
−200	msec	time W
	↓	
0	msec	muscle begins to move

(Libet finds independent evidence of a slight error in the subjects' recall of the times at which they become aware of sensations. Correcting for it, time W is −150 msec.)

Why is this result so problematical? One scientist characterizes the paper in which this result was presented as "one of the most philosophically challenging papers in modern scientific psychology" (Haggard et al. 1999, 291). Why is this result so impressive?

Libet's answer would be as follows:

"What does this mean? First, the process leading to a voluntary act is *initiated* by the brain *unconsciously*, well before the conscious will to act appears. That implies that free will, if it exists, would not initiate a voluntary act" (Libet 2004, 136).

Free will, if it exists, would not initiate a voluntary act. This is above all what Libet wanted to emphasize.

If the action is initiated by brain activity and not by free will, our common-sense belief that we consciously and freely initiate our bodily movements does not seem to reflect reality, and we cannot but think that our free will is only an epiphenomenon. If this is the case, the phenomenological description of free will and action on the basis of our conscious experience seems to be only a phenomenological illusion.

Libet himself does not think the experimental result denies the possibility of free will, as he thinks that there is still a short time, around 200 (150) msec between consciousness of the initiation of the movement and realization of the movement. During this time a subject is able to block or "veto" the process. That means, "the conscious will could decide" either to allow the volitional process to go to completion or veto it (Libet 2004, 138).

How should we react to Libet's interpretation of his experiment?

Must we admit that this kind of experiment demonstrates that a phenomenological description is nothing but an illusion?

If not, what is it that we can learn from Libet's experiment?

In order to draw a meaningful moral from Libet's experiment, I would like to point out several problematical points with the help of critical responses made by various philosophers and scientists.

(2) Problems and lessons of Libet's experiment

What makes Libet's experiment intriguing is, as I have indicated, the ingenious

technique by which Libet tried to identify exactly when a free decision occurs. However, because of this ingenious technique, the setting of the experiment implies a fundamental deficit.

First, in order to prevent previous factors from influencing the decision to move, a subject is required not to preplan when to move but to wait until the intention (wish or urge) appears spontaneously. This is, however, a very paradoxical situation. As the subject is instructed how to act during the experiment before the experiment begins, the subject is already in a definite attitude, i.e., the subject must be prepared to act spontaneously (without any preparation) when the experiment starts.

Second, a report the subject is required to make is interpreted as a report of a perceived decision, intention, wish, or urge. However, these concepts (decision, intention, wish, or urge), which are considered to correspond to the occurrence of a free will, are ambiguous. For example, an urge to move cannot be identified simply with a decision. If we differentiate these concepts, especially between urge and decision, the result of the experiment could be interpreted in a different way.

For example, we could interpret it in the following way: At the time of the onset of RP, an urge to move begins to appear and develops gradually, and at the time of W, the urge changes to an intention or decision to move, consequently the process of movement begins. Perhaps, Libet would respond to this criticism, maintaining that just because he wanted to deny this possible interpretation he asked a subject to report the time exactly when he becomes aware of the intention to move. However, there is still the possibility of thinking that an urge in its initial phase is so subtle that a subject cannot clearly identify it. Or, there is also a possibility that a subject cannot clearly differentiate between urge and intention. Perhaps, the time scale in the experiment is so short that a subject does not know how to express his experience of the process.

Third, the second point brings us to the most important point related to this experiment. Libet seems to suppose that decision-making can happen at an instant that has no time width. However, in our normal everyday situations, in which we decide to do various things, it is natural that the process of decision-making takes time.

Let us think of an example in which we have suddenly a will (or wish) to have

lunch while concentrating on some work. Even if the will appears suddenly, it is natural to think that various things occurred consciously or unconsciously before the occurrence of this will. Perhaps, long before the appearance of this will, a feeling or urge of hunger began. This self-forming process of the will is not a clearly conscious process of deliberation, but it is still an indispensable process for the appearance of the will. If we see the experimental process from this point of view, we can interpret the whole process of brain activity, beginning from the onset of RP to the actual movement of the body as the process of decision-making.

D. Dennett expresses this possible interpretation in the following way. "What Libet discovered was not that consciousness lags ominously behind unconscious decision, but that conscious decision-making takes time" (Dennett 2003, 239).

If we can interpret Libet's experiment in this way, we can find in it a good demonstration of *freedom within a field*. Only on the basis of a prior commitment to a certain situation does freedom become possible. As Merleau-Ponty indicated, each instant is not "a closed world" and "the idea of an initial choice involves a contradiction" (Merleau-Ponty 1962/1945, 437/499;438/500).

Fourth, this point relates to another important point. From the citations of Libet, you have perhaps already noticed that he sometimes uses expressions such as "a brain unconsciously begins the volitional process" or "the conscious will could decide to ……" and so on. These expressions are, if we understand them strictly, to be regarded as a kind of *category mistake*. Neither brain nor free will decide or begin the action. "We" or "you" decide or begin the volitional process.

This point is also related to the view that with regard to the concept of intention we must differentiate between at least two different levels. Various philosophers have indicated it: for example, the differentiation between prior intention and intention in action (Searle 1983) or between proximal intention and distal intention (Mele 2006). If we use Husserl's concept, this difference corresponds roughly to the difference between freedom at the spiritual level and freedom at the physical level.

When do we have a clear feeling of free will in our normal situation? I think it is when we experience a relatively long process of deliberating various options of possible actions, choosing one option carefully from among them and then reaching a decision. In this case, we experience the formation of a prior intention, i.e., the

process of forming an intention before executing the process of a bodily action. On the other hand, when an action begins, it is rare that we need to deliberate and choose options from among various behaviors and bodily movements. As long as no specific difficulties appear and as long as we have acquired a skilful capability with our own body to some extent, it is better not to be conscious too much of how we move our body. With regard to the case of a professional tennis player, Libet himself stresses this point in the following way: "Professional sports players will tell you that you are "dead" if you consciously think about your moves" (Libet 2004, 136).

This is one of our common-sense phenomenology. In this sense, when it comes to an intention in action or a proximal intention, a conscious will does not have a great role in accomplishing skilful actions, and a rather tacit or unconscious "intention" could play an important role.

On the grounds of this distinction, S. Gallagher concludes as follows: "These (Libetarian) experiments, however, and more generally the broader discussions of motor control, have nothing to tell us about free will per se" (Gallagher 2006, 116).

According to Gallagher, "the question of free will is not about bodily movement but about intentional action" (Gallagher 2006, 118). We can meaningfully talk about intentional action only at the level of conscious reflexive deliberating activity, which constitutes the context of intentional action and in which various (unconscious) bodily behaviors are embedded. I think Gallagher's claim sounds too one-sided if we understand it strictly.

As we have already seen in Husserl's view of freedom, the capability of realizing and controlling the movements of one's own body is a basic condition for every kind of free will. Free will without the capacity of motor control is an empty concept. In spite of this necessary restriction, the importance of differentiating two different levels of intentions, which Gallagher indicates, remains.

As you see, these critical responses are related to the central core of Libet's view of the experiment, according to which two factors such as free will and brain activity or consciousness and unconsciousness can be strictly and essentially differentiated. This dualistic view is clearly an inheritance of a Cartesian dualism, in which mind and body are exclusively distinguished, and in which the time order of

events is also strictly determined. In the case of a voluntary action, the mental event of free will occurs first, and then bodily events follow.

Against this view, if our critical interpretation is correct, Libet's experiment shows that a realization process of free will takes time and is located in a certain situation, in which various factors including unconscious brain activities, instructions of an experimenter, and experimental settings and so on are included. Not only with regard to time but also to space, free will must be interpreted as being extensive and distributed. If we cite Dennett again, "We can see it (a free will) as a phenomenon distributed in space and time as well" (Dennett 2008, 255).

5 Provisional conclusions

Where is free will? Where is free will realized? Is it localized at a location in the mind or brain? No. Free will is realized just where we experience it, i.e., in the process and the situation, in which and through which an action is realized. This is, I think, the most important lesson we must learn from Libet's experiment.

If we can interpret Libet's experiment in this way, it is an example that is far from falsifying the phenomenological perspective, but rather it *supports* a phenomenological concept of freedom, i.e. an embodied freedom in the world. In this sense, empirical results, if we interpret them appropriately, can help us to fill empty parts of the picture of the phenomenological concept of an embodied freedom in a concrete way.

As a phenomenological investigation of freedom can cooperate with various sciences including the brain sciences, the brain sciences do not indicate any limits of phenomenology, but rather help to broaden its possible scope.

References:

Dennett, Daniel. 1993. *Consciousness Explained*, Penguin Books.

Dennett, Daniel. 2003. *Freedom evolves*, Penguin Books.

Dennett, Daniel. 2008. "Some Observations on the Psychology of Thinking about Free Will," in *Are We Free? Psychology and Free Will*, ed. by J. Baer, J. C. Kaufman, and R. F. Baumeister, Oxford University Press.

Gallagher, Shaun. 2006. "Where's the Action? Epiphenomenalism and the Problem of Free Will," in *Does Consciousness Cause Behavior?*, ed. by S. Pocket, W. P. Banks, and S. Gallagher, The MIT Press.

Husserl, Edmund. 1989/1952. *Ideas pertaining to a pure phenomenology and to a phenomenological philosophy*, Second Book, Kluwer Academic Publishers. (Ideen zu einer reinen Phaenomenologie und Phaenomenologischen Philosophie, Zweites Buch, Martinus Nijhoff).

Haggard, Patrick, Chris Newman and Elena Mango. 1999. "On the perceived time of voluntary actions," *British journal of Psychology*, 90.

Libet, Benjamin. 2004. *Mind Time, The Temporal Factor in Consciousness*, Harvard University Press.

Mele, Alfred. 2006. "Free Will: Theories, Analysis, and Data," in *Does Consciousness Cause Behavior?*, ed. by S. Pocket, W. P. Banks, and S. Gallagher, The MIT Press.

Merleau-Ponty, Maurice. 1962/1945. *Phenomenology of Perception*, translated by C. Smith Humanities Press. (*Phenomenologie de la Perception*, Gallimard).

Searle, John. 1983. *Intentionality: An essay in the philosophy of mind*, Cambridge University Press.

Searle, John. 2005. "The Phenomenological Illusion," in *Experience and Analysis, Proceedings of the 27th International Wittgenstein-Symposium*, ed. by M. Reicher and J. Marek, Obv and Hpt.

Wegner, Daniel. 2002. *The Illusion of Conscious Will*, The MIT Press.

＊This paper was originally presented at the 3rd PEACE International Conference (Phenomenology for East-Asian CirclE), which was held on September 18–21, 2009, at the Seoul National University in Korea. Respecting the conference theme "The Applied Phenomenology," the original paper was titled "The limits of applied phenomenology: phenomenology and brain science."

＊本論文は，2009 年 9 月 18 日から 21 日にかけて，ソウル国立大学で開かれた「東アジア現象学会議（The 3rd PEACE International Conference, Phenomenology for East-Asian CirclE）で発表されたものである．この会議のテーマが「応用現象学（The Applied Phenomenology）」であったため，このテーマを考慮して，もともとの論文の題名は "The limits of applied phenomenology: phenomenology and brain science" とされていた．またそのため，論文の最初で，応用現象学に関する短い議論が展開されている．しかし，本題は，最近話題になることの多い脳科学者ベンジャミン・リベットによる自由意志に関する実験とその解釈を取り上げて，それを批判的に検討することにある．本論文ではこの点を考慮して，題名を変更した．論文の基本テーゼは，リベットの実験は自由意志に関する現象学的見方に反するものではなく，むしろ支持するものとなっている，と解釈することができるというものである．