The Irreversibility of Time and the Momentary Present as a "Cut" —Tanabe Hajime's philosophy of time —

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Abstract: The keywords which characterizes Tanabe's philosophy of time are irreversibility and the "cut". While he holds a present-centralist view of time as do Nishida Kitarō and Kuki Shūzō, Tanabe's view occupies a unique position in that he focuses on the problem of the irreversibility of time. Generally speaking, it is believed that the ground of the irreversibility lies in the immovability of the past. However, Tanabe claims this belief is derived from an assumption that time should be observed, and if we try to capture time from the perspective of action, it will become clear that the element of the future makes time irreversible. In other words, the intention to realize something through actions manifests an undesirable reality as the unchangeable past, whether we are aware of it or not. Yet this idea is too inclined to the future, failing to acknowledge that the present always includes the possibility and impossibility of realization equally. Tanabe's Philosophy as Metanoetics has the intent of thoroughly investigating such a problem of the impossibility of action with the conception metanoesis (repentance or penitence). In this book, the present is interpreted as the very point where the conversional awareness called "death-and-resurrection" arises and also as the instant for the reason that the disappearance of the old self and the emergence of the new self are completely simultaneous in that awareness. When considering eschatology in Christianity, he links this momentary present with the notion of "cut" that originated in Richard Dedekind's use of the term. As Dedekind aimed to understand the continuity of real numbers by the "creation" of an irrational number defined as a "cut", Tanabe asserts that the momentary present is a "cut" that makes it possible for time to flow. Since such a present also has the meaning of death, the flowing of time is considered to be irreversible.

Introduction

The problem of time is one of the main concerns in modern Japanese Philosophy. The thinkers who should be mentioned as being puzzled about the essence of time first of all are Nishida Kitarō (1870–1945) and Kuki Shūzō (1888–1941). In spite of different styles of thinking, their philosophies of time have remarkable similarities. They both hold a present-centralist view of time and the view that the eternal dimension is superimposed upon the present. Tanabe Hajime (1885–1962) is another philosopher whose philosophy of time shares these characteristics. Yet his view has not been discussed as frequently as Nishida's or Kuki's theories. It is true that Tanabe's philosophy of time is less conspicuous than that of Nishida's or Kuki's.¹ However, this does not mean that Tanabe's philosophy of time is inferior. While there is the common intention to grasp something eternal at the foundation of this present, Tanabe's idea occupies an original position that is not identical with that of Nishida nor Kuki. Tanabe focuses on the problem of irreversibility of time, which is not actively pursued in Nishida's philosophy of time, and is entirely denied in Kuki's theory of recurrent time (回帰的時間). This means that he pays attention to the difference of phase between the past and the future, which tends to be overlooked when trying to ground time in the present. Such a conception turns Tanabe toward examining the way the present itself is regarded as the center of temporality. When adopting present-centralism, one is faced with the question of how to describe the characteristic of the present that cannot be put on the same level as the past and the future while always existing between the two. Tanabe is not satisfied with the answer that the present is the eternal at the same time. His position is that the present should be understood as a "cut" (切断). This is the central claim of his philosophy of time.

1. Bergson and Tanabe

As is well known, Tanabe started his career as a philosopher under a decisive influence from Nishida's philosophy. When Tanabe uses its key concepts such as "pure experience"(純粋経験) and "intuition"(直観), he is quite aware of the affinity of these with Bergson's "pure duration". Tanabe maintains the position that time is an essential component of reality and the temporal must be sharply distinguished

¹ For the discussion of Tanabe's philosophy of time from another perspective, see Taguchi, Shigeru (2015).

from the spatial. In this sense, Bergson's idea determines the fundamental framework of Tanabe's thought about time.

What I would like to emphasize here is not so much this closeness of Tanabe's position to Bergson's as the many differences. First, there is a difference in that Tanabe tries to absorb the ideas of mathematical continuity, which Bergson regards as the blending of spatiality with time and therefore eliminates. In this respect, Tanabe identifies with Bertrand Russell (1872–1970),² who criticized Bergson (2/564–565),³ For Tanabe, mathematical continuity is considered to be more than just dealing with aggregates of static points. He says,

The logic through which we think about the continuity in today's mathematics is not the ordinary understanding of logic. It is the reasoning logic that idealizes the dynamic principle connecting the whole and objectifies the irrational as the basis of the rational toward limits(1/468).

According to Tanabe, the concept of the cut, which German mathematician Richard Dedekind (1831–1916) used in defining irrational numbers, is a typical example of such logic, and "the dynamic element which idealizes the dynamic principle" (Ibid.).

Secondly, what is more important is the fact that the cut is interpreted as the instant (瞬間), as is already suggested above. For example, Tanabe says in *Introduction to Philosophy, the Third Added Explanation—Philosophy of Religion and Ethics* (『哲学入門-補説第三 宗教哲学・倫理学』, 1952),

The negative transformation and circulative development of history reciprocally occurs at the instant as present. This momentary present, which means (Dedekind's) cut that sections and joints history, is the transformative point where the eternity of absolute nothingness, through penetrating into time, mediates time and at the same time is mediated by it (11/532–533).

² Russell criticizes Bergson in "The Philosophy of Bergson" [1912] and *Our Knowledge of the External World as a Field for Scientific Method in Philosophy* [1914]. Tanabe agrees with Russell that Bergson pays no attention to the philosophical possibilities of mathematical considerations of continuity.

³ Tanabe Hajime Zenjyū [Complete works of Tanabe Hajime] (Tokyo: Chikuma-Shobō, 1963–1964), 15vols., cited in the text, followed by volume and page. All italics and brackets are my own.

At this point, the difference between Tanabe and Bergson becomes distinct because Bergson disapproves of the very idea of instant. Bergson asserts that "the indivisibility of motion implies, then, the impossibility of real instants".⁴ Discussing Zeno's paradoxes and the Bergson's comments on it, Tanabe says "while space is infinitely indivisible and the way we walk is considered as the set of infinite points, time is a discontinuous and indivisible unity" (11/81). It will be obvious that what is meant by "a discontinuous and indivisible unity" is different in Tanabe and Bergson. For Bergson, the indivisibility of time refers to the flow itself in which we can never cause some rift. In Tanabe's opinion, on the contrary, it means the indivisible entity as an element of time because he regards the momentary present as the fundament of the temporality. In fact, he rephrases such unity as "the instant" which "lurks between motion and rest—being in no time at all" in Plato's *Parmenides*.⁵ To borrow Kierkegaard's words, it is "the atom of eternity".⁶

No matter how Plato or Kierkegaard understand the relationship between the instant transcending time and the flowing of time, the question arises concerning the way time can be "constituted" from the instant which is by no means divisible insofar as it is regarded as the ground of time. What is "constituted" from some of the indivisibles would be merely a straight line not time itself even if we could treat the indivisible as something existent. Therefore, the meaning of the "constitution" must be considered in a completely different manner from the aggregate of parts.

2. The Irreversibility of Time and the Present

As is mentioned above, Tanabe's philosophy of time aims to separate something spatial from the nature of time and purify time into genuine fluidity. It is because of such a basic perspective of time that, in the article titled "Eternity • History • Action(「永遠・歴史・行為」,1940)", he criticizes the key concept of Nishida's

⁴ Henri Bergson, *Matter and Memory*, trans. by Nancy Margaret Paul and W. Scott Palmer, London: George Allen & Unwin Ltd. and New York: The Macmillan Company, 1912, p.249.

⁵ Plato, *Parmenides*, trans. by R. E. Allen, *Plato's Parmenides*, Oxford: Basil Blackwell, 1983, p.43(156d).

⁶ Kierkegaard, *The Concept of Anxiety*, trans. by Reider Thomte, Princeton: Princeton University Press, 1980, p.88.

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theory of time, "the self-determination of eternal now", for leading to the spatialization of time (7/122-123).

Nishida focuses on Augustine's thought in *Confessions* when thinking about the nature of time. According to Augustine, the reality of three aspects of time (the past, the present and the future), which are always exposed to the danger of being brought to nothing, take root in the awareness or consciousness of the present. What is characteristic of Nishida is that he finds in the centrality of the present the function of its subsuming (包む) the past, the present and the future. It is nothing but "the self-determination of eternal now".⁷

However, we cannot overlook the fact that Tanabe also, like Augustine and Nishida, regards the eternal negating of the process of time as the transcendent basis of time. In fact, Tanabe acknowledges that the nature of time implies some spatiality as long as eternity is such basis (7/118). Yet it does not follow that Tanabe's criticism of Nishida or Augustine is wrong and meaningless. He thinks that "eternity recovers the temporality through making time reversible and manifests its meaning precisely in accordance with the form of time"(7/119) and therefore that the present as eternity must be the concept by which we can understand the undeniable fact that time never flows conversely insofar as such present is considered as the ground of time. In this sense, Tanabe's philosophy of time has the original meaning in spite of many similarities to Nishida's idea. The penetration or falling of eternity into time (in Nishida's phrase "the self-determination of eternal now"), according to Tanabe, must be the emergence of the fact that time flows irreversibly. From such viewpoint, Tanabe says;

The determination of the indifference of eternity to time [by Nishida and Augustine] brings about extremely dangerous results. For, according to it, such eternity denies the unidirectionality of time passing from past to future, so-called the irreversibility of time, and, instead of that, makes it possible for time to flow from future to past as well as to flow from past to future. Obviously it is nothing but denying temporality, or more positively speaking, spatializing time (7/118).

⁷ However, Nishida also emphasizes the function of the present as the instant. It must be noted, therefore, that Tanabe's criticism is not fair in that he ignores that point.

We can find a solution to the above-mentioned question here. Namely, if we can explain the irreversibility of time by the momentary present that transcends flowing time, time will be regarded as "constituted" from something indivisible. In this sense, it is exactly through the phenomenon of the irreversible flow of time that the momentary present, that is, eternity, manifests itself as the ground of time. To use Tanabe's terminology, it is the returning (*genso* 還相) of eternity into time itself, which is named "historicist temporal ontology (歷史主義的時間存在論)" (7/121).

Generally speaking, we understand the irreversibility of time as a matter of course that needs no explanation because it seems that the past is the already decided fact and it cannot be changed. In this case, time is represented as something that gradually accumulates from the past toward the tip of the present. However, when we adopt present-centralism, such an image becomes inconsistent with the accumulation of time since present-centralism holds that the reality of the past lies only in present memories and the past exist nowhere in itself. Here there is a mutually exclusive relationship between past-determinism and present-centralism.

To summarize Tanabe's idea in advance, we could point out three characteristics; first, the performative or active understanding of three aspects of time, second, the higher dimensionality of the future, and finally, the present as the transformative point where the past and the future confront and at the same time mediate each other.

Tanabe's dissatisfaction with Nishida and Augustine arises from their understanding of the relation between the past and the future. In Nishida as well as Augustine, from Tanabe's point of view, the past as memories and the future as expectations are paralleled in the present without any internal relationship (7/121). However, if we intend to capture the truth of time from the perspective of action, Tanabe claims, it becomes clear that the memories and the expectations reciprocally mediate one another. First of all, expectations are impossible without taking actions into consideration, because of the original meaning of "the mental preparedness for actions(行為的なる心構)"(7/125); the actions performed together with their expected consequences necessarily depend upon memories. Simply put, expectations presuppose memories. In Tanabe's words, "the future is realized on the ground that we combine a present action with past memories, and expect or anticipate the results that the former causes through the mediation of the latter" (7/124-125). It is precisely owing to present actions implying the direction toward the future that memories themselves can come into existence. He says, "as long as the past is brought into consciousness through memories, it is already accompanied by the

moment of the future which negates the past", and "[memories] cannot be realized as the past without including the moment of the future" (7/136). In this case, memories are mediated by expectations.

Though the past and the future are complementary, Tanabe claims that the future exists in a higher dimension than the past. To be in the higher dimension means that the former is a more mediated existence than the latter. According to Tanabe, the reality of the future consists only in the ceaseless agency negating the past in some way. In contrast, the past, unlike the future, does not show the character of negative mediation as such. Although the past is essentially existence mediated by the future, we don't usually realize the fact. Rather, it appears to us as an immediate and fixed existence which we cannot change by any means. Such ambiguous characteristic of the past can be understood only from the perspective of the action in the present. Indeed, it is only through the future that the past can reveal its own nature, but before that the past exists as "something immediate that is opposed to actions and must be negated by them" (7/134) in the first place. Without such opposition, Tanabe thinks, there would be no action and therefore no present. While the future can come into existence only through the present actions, the past emerges as something external to actions and their presupposition when they are being performed. The irreversibility of time is based on this asymmetric relationship between the past and the future, in other words, on the fact that the nature of the mediation in the past remains potential to active present. Conversely, it follows that the irreversibility rests on the higher dimensionality of the future. Tanabe says;

From here [that is, the higher dimensionality of the future] comes the irreversibility and uni-directionality of time flowing from the past to the future and not from the future to the past. Since the higher dimensionality of the future means mediation, the future can make the lower dimension of the past its mediation, but the past cannot make the higher dimension of future its mediation in a direct way (7/127-128).

Since the present is exactly the point where all actions are being performed, it is also the point of such asymmetrical, mutual mediation between the past and the future. The present is said to have the meaning of eternity because of some kind of spatiality which makes the past and the future correlated, but in spite of that it does not follow that, like Nishida, the present is considered to be the place (場所) which

subsumes the two. At the active present, memories change their meanings in the light of expectations, and at the same time the expectations embody themselves on the basis of memories. Taking into consideration such circular movement in which the present always functions as the proceeding center, according to Tanabe's thought, we should represent the present not as just a point but rather as a transformative point where the flow oriented toward the past and that oriented toward the future conflict with each other. For this reason, Tanabe symbolizes the present as the center of vortex.⁸

3. Metanoesis and the Past

In spite of some of the philosophical possibilities Tanabe's perspective seems to have, there are still several problems left unsolved. The first problem is that he is inclined to explain the immediacy of the past by relating it to the continuous and potential reality of memories (7/136). Secondly, it can be pointed out that Tanabe's present-centrism is slightly incongruous with the notion of the higher dimensionality of the future, Tanabe's philosophy of time having two centers as it were.

We can find the solution to these problems in *Philosophy as Metanoetics* (『懺悔道としての哲学』, 1946), which is the starting point of Tanabe's philosophy after the war. Through coining the word "Metanoetics", he advocates a transrational philosophy of Other-power, but it is impossible to give a full picture of it here. It is enough to pay attention to the fact that he discusses action in relation to the impossibility of its realization. Tanabe ventures to take the standpoint of Other-power (他力) instead of relying upon self-power (自力). Taking into consideration his assertion that Other-power is always linked with self-power, it would be more accurate to say that he deals with the whole structure of the possibility and impossibility of the realization of action.

"Metanoesis" (penitence or repentance) has the underlying tone of regret for past actions. However, it means not mere resignation to our powerlessness but "breaking-through" (*Durchbruch*) (9/19).⁹ It is the radical transformation of our existence, which is named "death-and-resurrection" (死復活). The present is located at the point where the thorough collapse of the old self and the emergence of the

⁸ For Tanabe's understanding of time as a vortex, see Gōda, Masato & Sugimura, Yasuhiko (2012a) and Gōda, Masato (2012b).

⁹ Tanabe Hajime, *Philosophy as Metanoetics*, trans. by Takeuchi Yoshinori with Valdo Viglielmo and James W. Heisig, London: University of California Press, 1986, p.4.

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new self occur simultaneously. This is fundamentally different from the former assertion that the present is nothing but where actions are being performed. On the contrary, at this present there arises the self-awareness that a conversion has been caused by something outside of the self, plainly speaking, the awareness of the self-incompetence and the awareness of being finite. Therefore, the present consciousness is also said to be a faith (信) in Other-power. He says;

Here, witness is mediated by the action of metanoesis as the past opening up to the future, so that an orientation to future rebirth becomes implicit in the metanoetic transformation of the past and faith comes to birth in a present consciousness of the change that has taken place in witness, a self-consciousness based on absolute Otherpower (9/227-228).¹⁰

Compared to this, the present awareness he spoke of before should be judged as the awareness of the confirmation of self-ability, which is observed merely from the side of the possibility of realization or from the future, based upon the continuous and identical self. In this sense, the present could be regarded as illuminated in the light of hope. Indeed, he mentions a kind of hope in *Philosophy as Metanoetics*, but it must be noticed that it has contradictory characteristics. That is, hope never appears through individuals always retaining their self-identity without any rupture or collapse, and it exists completely outside of self-power. Nevertheless it makes possible the re-birth of the self and the self-awareness called "metanoesis".

It also means that the present here always implies some darkness at the same time. "Suffering arises within a relative being because it is driven into a desperate cul-de-sac by the conflict between the consciousness of past *karma* (unavoidable guilt) and the consciousness of the aspiration for future emancipation from guilt. It is this suffering that characterize present consciousness as anxiety" (9/35). ¹¹ If we attempt to grasp time on the basis of action, which can be understood as *poiesis* or production bringing something into existence in a broader sense, we must consider the present where realization and non-realization are constantly diverging. Tanabe's "metanoetics" is the standpoint which combines the problem of the non-realization

¹⁰ Ibid., p. 248–249.

¹¹ Ibid., p. 24.

of action with the essential structure of the finite self from the perspective of religious philosophy.¹²

The understanding of the present as the conversional or transformative point called "metanoesis" or "death-and-resurrection" makes it clear that the relation of the future to the present means that of the "future witness"¹³to the present faith. Besides, on the basis of this, the mutual mediation between the past and the future which circles around the central present comes to be reconsidered in a different way.

According to Tanabe, the regretful past is essentially characterized as contingent. "The past, therefore, must embrace part of our being that we are entirely incompetent to dispose of and can only acknowledge as our destiny. This is the contingency of the past (9/70)".¹⁴ In regretting, we encounter "the fact that what might possibly not have existed now exists", which he calls "the primordial contingency (原始的偶然性) " in the sense that such fact cannot be explained by any universal principles and "must be recognized as being simply because it is" (9/69). ¹⁵ Why is the past regarded not as necessity but as contingency although it always has the character of immovability and unchangeability. The reason is that, he asserts, the element of the future, in other words, the consciousness that it "might possibly not have existed" has already penetrated into the past. Thinking of the future as freedom, he states as follows;

Contingency is brought to self-consciousness only when it is mediated by freedom. The same holds for temporal modality of the past, since it is only through the mediation of a free "pro-ject" into the future that the modality of the past comes to consciousness (9/72).¹⁶

The past appears as contingency, which is not the reality that we must resign ourselves to but the one that we should repent, only when we oppose another converse possibility against the fact that has already occurred. The solidity and steadfastness of the past are neither because of a reality that the past would possess in nature, nor because of the potentiality of memories.

¹² However, we must not overlook the fact that Tanabe already mentions the concept of metanoesis (懺悔) in "Eternity • History • Action" (7/119).

¹³ Tanabe Hajime, *Philosophy as Metanoetics*, p. 249.

¹⁴ Ibid., p. 65.

¹⁵ Ibid., p. 64.

¹⁶ Ibid., p. 67.

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Put in the context of "metanoesis", regret or repentance means, on one hand, grieving over the past events that we can never change, but on the other hand, we cannot repent what we have done without some consciousness that hopes for a possibility different from the reality that happened. Such attitude toward the past moves us to act further in another way, building up the relation in which future freedom is made possible by past contingency. It is here that the ground of the irreversibility of time lies, which means that "time is determined by the past and breaks through this determination toward the future" (9/75).¹⁷ Bearing in mind Augustine and Nishida, Tanabe still maintains as follows; "Time is never horizontal; it is always sloped. Unless its process is so conceived, it cannot be called time" (9/74–75).¹⁸

4. Eschatology and the "Cut"

However, Tanabe does not use the concept of "cut" here. Though it has already become an important term in his philosophy, it is not linked with the problem of time¹⁹. Then, when does he come to comprehend the idea of a "cut" as the central conception of his theory of time? It is not until around 1947 or 48, when he struggled the problem of eschatology in *the Dialectic of Christianity* (『キリスト教 の弁証』, 1949).

The notion of an instant has played a crucial role in Tanabe's philosophy of time, but it is only after *Philosophy as Metanoetics* that he comes to compare it to a "cut". It is partly because of the influence of Kierkegaard's idea that an instant is "an atom of eternity", but it is mainly because Tanabe finds the present to be the locus where the fundamental conversion of existence occurs. As is shown above, there is no temporal medium or interposition between the disappearance of the old self and the appearance of the new self. Rather, transformative change is called the self-

¹⁷ Ibid., p. 69.

¹⁸ Ibid.

¹⁹ We assume that it is in the late 1930s when Tanabe introduced the idea of "the selfnegativity of the species (種の自己否定性)" into his theory of "logic of species (種の論 理)" that the "cut" itself (not the "cut" understood as the instant) becomes the important concept in Tanabe's thought. For this, see Takehana, Yōsuke (2015). As is shown below, what makes Tanabe connect the "cut" with the problem of time is eschatology. However, it can be said that the "cut" is potentially related to his philosophy of time before he speaks of eschatology if we consider that in his thought the "cut" illustrates a dynamic structure of the individual which has its real existence in the aspect of the present.

awareness of "death-and-resurrection". Just like the relation between the front and back of a coin, negation as the death of the self and affirmation as the rebirth of the self are completely simultaneous.

Yet Tanabe's thought after *Metanoetics* was not directly oriented toward examining the essential structure of an instant in a more concretely manner. His philosophical interest at that time centered on reconsidering the meaning of community from the perspective of religious philosophy. *The Dialectic of Christianity* is the result of such efforts. Struggling with the Christian question of what is the end time led him to understand the instant as something more than a mere indivisible part of time or some sort of incarnation of eternity. That is the concept of the "cut".

In my opinion, what gives Tanabe an opportunity to introduce this idea into his philosophy of time is the thought of Karl Barth (1886–1968). In *the Epistle to the Romans (Der Römerbrief)*, Barth understands Jesus as the end of time, and says; "as Christ, Jesus is the plane which lies beyond our comprehension. The plane which is known to us, He intersects [durchschneiden] vertically, from above".²⁰ In the Resurrection of Jesus, according to Barth, the two planes, that is, the unknown world and this world, touch each other in the way that "[the former] touches it (the latter) as a tangent touches a circle, that is, without touching it".²¹ Taking these parts into consideration, Tanabe understands Barth's thought as "touching without touching which means the creative joint through cutting"(10/72). It is here that Tanabe refers to the "cut" for the first time in the context of the theory of time. We can infer that when he sees Barth using the word "schneiden" or "durchschneiden" (intersect or cut through), he is immediately aware of the similarity with Dedekind's idea. To use Tanabe's phrase, both ideas mean "the paradox of joining through cutting" (13/345).

As is well known, eschatology was one of central problems in 20th century theology. Tanabe has an existential interpretation of eschatology under the influence of Barth and Rudolf Bultmann (1884–1976). The characteristic of his understanding is the assertion that the end is considered as the very event at "this now self". Simply put, the self is "a terminal existence (終末的存在)" (10/116). Instead of existing in the future, the end is every present, which means the ground of the self. By way of such existentialist understanding of the end time, the "cut" becomes the most important concept in his philosophy of time. This is evident where Tanabe uses the

²⁰ Karl Barth, *The Epistle to the Romans*, trans. by Edwyn C. Hoskyns, London: Oxford University Press, 1933, pp. 29–30

²¹ Ibid., p.30.

idea of the cut joint, which originally refers to the essence of Jesus in Barth, in order to conceptualize the present as the possibility of continuity.

The momentary present must be understood as a "cut". This is Tanabe's original insight. Compared with it, the understanding of the instant as the indivisible or the atom seems to be still something negative which does not reach the affirmative definition. Nishida would use "the continuity of the discontinuity (非連 続の連続)", but its definition is tautological.

Connecting the concept of the "cut" with the problem of the end, one can properly express the simultaneousness of disappearance and emergence without which the notion of the momentary present would be impossible. The property of disappearance is indispensable in order that temporal continuity is totally distinguished from mathematical and spatial continuity. Time must fade away. However, just disappearing would not make time real. In order for disappearance to be real, paradoxically, there must be emergence. Does time disappear first and then emerge as new? It is impossible that there is some passage of time between the disappearance and the emergence. If some time passes, there would exist a state between the disappearance and the emergence and one falls into an infinite regression. If we try to avoid such difficulty, one of the possible choices is acknowledging the reality of an instant where the disappearance and the emergence live together, as Plato and Kierkegaard thought. In Tanabe's idea, the overlap of the two totally opposed events is neither a paradox nor a contradiction, but a "cut".

Simply put, the cut (Schnitt in German) in mathematics is to partition numbers into two sets A and B so that all numbers of A are less than all numbers of B. If a unique number is defined by such partition, that is, by a cut, there is no gap between A and B and the two sets are continuous. To use a number line representation, continuum means that a boundary surface made by cutting a number line is necessarily included either in A or in B. Suppose that the system of numbers is made complete by using the rational numbers. If this assumption were true, every number would be determined by cuts in which the boundary surface as the determined number is included in either of the two sets. Actually, however, there arise the cuts which have no boundary surface. In this case, we can cut off a number line without touching any rational numbers. Because rational numbers are dense in a number line, in other words, we can divide off a line indefinitely, there can be the cuts in which A contains no greatest element and at the same time B contains no smallest element. Such cuts have many gaps everywhere. Therefore, we must abandon the assumption that all numbers can be understood as rational number, and conceive the numbers different from the rational number anew. These are nothing but irrational numbers. This is the outline of Dedekind's idea although it is not strict mathematically.

Tanabe comprehends such idea of the cut derived from Dedekind in the two opposite meanings. Namely, the "cut" means the beginning and the end or the creation and the destruction of the temporal continuity. The disappearance of time that occurs at every instant is expressed by the side of the "cut" as the end. The "cut" divides off the given continuity and destroys it each time it is newly born. In this sense, we are always faced with the end of time. Yet Dedekind's "cut" means, as is mentioned above, just the partition of numbers into two sets and therefore it does not include such negation of continuity. Furthermore, Tanabe's understanding of the "cut" as the cutt*ing* or the practice of the "cut" has no relation to Dedekind's thought.

Seen from the perspective of emergence, which is the other meaning of the "cut", however, Tanabe's idea is closer to that of Dedekind. Dedekind's aim is to define irrational numbers by the conception of the cut and, on the basis of this, to show the continuity of real numbers. Namely, the continuity is demonstrated through the cut. To "create [erschaffen]"²² irrational numbers in Dedekind, from Tanabe's viewpoint, means to create every momentary present. Tanabe states "the present as a 'cut' must be equivalent to an irrational number" (13/348). In addition, just as the becoming of irrational numbers leads to the demonstration of the continuity of real numbers, the becoming of each present makes time continuous for Tanabe. Since Tanabe regards the temporality as the fundamental condition for historical reality, there emerges the structure of the present as eternity ceaselessly penetrating into history and laying the basis for it. This notion of the manifestation of eternity into history is what he calls "historicism".

Yet it must be noted again that the present as "cut" is composed of disappearance in addition to emergence in order for the continuity to be the continuity *of time*. In this sense, the present comes into existence only through being cut, or more accurately, through cutting itself. The reason why Tanabe discusses the negativity of nothingness, or the dynamism of action, in explaining the meaning of the "cut" is that he tries to emphasize the simultaneousness of "creation" and extinction. For Tanabe, therefore, Dedekind's cut is not the momentary present itself but the best representation of the transformative structure of the present. To use

²² Richard Dedekind, *Stetigkeit und irrationale Zahlen*, Braunschweig: Friedr. Vieweg & Sohn, 1912, S.14.

Tanabe's own words, "the 'cut' is none other than a symbol which self-negative nothingness has for the agent of action" (12/321).

The possibility of time on the basis of the instant created by a "cut" means that the present mediates the past and the future. According to Tanabe, it does not mean that the transcendent present encompasses the past and the future as in Nishida. The two aspects of time are connected by the nothingness the "cut" brings about, in Tanabe's words, by "the knife of nothingness" which "has no thickness" (12/321). Such a momentary present is called "the time-between structure of the present" (現 在の中間時的構造). Paying attention to Albert Schweitzer's belief that the ethics of Jesus are interim-ethics which are only valid until the arrival of the end,²³ Tanabe ascribes a similar position to the structure of the present itself. That is, "the time-between structure of the present which includes "already" and "not yet". He says;

The time-between does not mean the mere medium between the past and the future, but the creative cut which acts as the negative transformation of absolute nothingness. Such a cut is made active through absolutely negating identical time and throwing it into the depth of eschatological nothingness and emerging in the crisis as the discontinuity in the present negated by eschatological time (10/113).

It is evident that the time constantly born on the basis of the "cut" is irreversible, because, according to Tanabe, time is always coming to an end and starting anew. To express it metaphorically, we never step into the same flow of time. The close link between the end and the "cut" brings to the temporal structure asymmetry, which enables time to be irreversible.

In order for the end to be a genuine end in the first place, the state of the end would have to be permanent (although it cannot be said that it is permanent if time is over). Yet insofar as the present as a "cut" is the end and at the same time the beginning of time, the end itself has not come yet. As is discussed in *Metanoetics*, what brings about every beginning is the act called Other-power that transcends the self. Therefore we have no choices but to believe in and expect the next beginning that makes time continuous. This means, at the same time, that such an expected beginning may not arrive. If it does not, the real end reveals itself. In this sense, the future takes on the character of uncertainty. In "Ontology of Life or Dialectic of

²³ See Albert Schweitzwer, *The Mystery of the Kingdom of God*, 1914.

Death"(「生の存在学か死の弁証法か」, 1962) Tanabe states that time unlike space is asymmetric and irreversible and says that "time participates in eternity which has no beginning and no birth in the direction of the past but, on the contrary, retains the possibility of the end and the uncertainty of its arrival instead of having no end and no mortality in the direction of the future" (13/534–535). The uncertainty of the future that does not guarantee even the next rebirth leads to a renewed valuing of the past precisely at this present awareness. In other words, we are constantly living new lives through the mediation of the future. Here emerges, we could think, the mediation from the future and the irreversibility of time in a different way than before because it is the problem of death that gives reality to such end and irreversible time. For Tanabe, the future is no longer what we can realize through actions as he thought in " Eternity • History • Action", but something unknown and indefinite constantly exposed to death.

If we consider the concept of death in relation to a double meaning of the "cut" we have seen above, death will have two implications: death in the "cutting" present and death as uncertain future. In this case, Tanabe emphasizes death in the former sense. For the awareness of death named "eschatological conversion" (13/543) can never arise in total death. This awareness extends through the possibility of a complete death and is incessantly exposed to it. This fact forgotten, Tanabe believes, death transmutes itself into "the notion of limit which represents its mere possibility" (13/528) as in Heidegger. Yet it would be possible to object that death to be realized is never death itself. In order to judge in what sense death at the "cutting" present could be considered as real, we need to take into account the problem of the dead spoken of in Tanabe's later years. This is something which I will leave for future consideration.

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