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Revisiting Tanabe's Critique of Nishida

Infinity and Contradiction

"Requesting the Guidance of Professor Nishida" marks Tanabe Hajime's critical point of divergence from the philosophy of Nishida Kitarō. Tanabe's criticism has been traditionally interpreted from the perspective of religious philosophy. In this paper, we argue that the main point of Tanabe's criticism pertains to the philosophy of mathematics, viz. two conceptions of infinity. The infinite can be understood either in terms of potentiality or in terms of actuality. The prior preserves dynamism but rules out completeness, whereas the latter preserves completeness but rules out dynamism. While both philosophers believed that the world has an infinite structure, Tanabe clearly subscribed to the doctrine of potential infinity, whereas Nishida had an ambiguous attitude up until adopting publication of *From the Acting to the Seeing*. After the publication, Nishida adopted the doctrine of actual infinity. We will show that this turn was one of the main causes of Tanabe's criticism.

KEYWORDS: Tanabe Hajime—Nishida Kitarō—Kyoto School—philosophy of mathematics—metaphysics—actual infinity—potential infinity—dialetheism—self-consciousness— free will

James Heisig has famously labelled the philosophers of the Kyoto School the "philosophers of nothingness," owing primarily to Nishida Kitarō's concept "the place of absolute nothingness" that was shared and developed by his students and followers. Although there is truth to this label, it can be easily misinterpreted as suggesting that the school's founders based their individual philosophies on a shared philosophical intuition related to the concept of nothingness. On the contrary, the relation between this concept and the development of the Kyoto School is characteristic of heterogeneity rather than homogeneity. For one, Nishida's conception of "the place of absolute nothingness" came about only after a process of strenuous reflection and self-criticism that lasted for almost two decades. Secondly, this product of Nishida's hard intellectual labor was subsequently and harshly criticized by his successor Tanabe Hajime, who deemed it unfit for philosophy. In this regard, if the concept of nothingness was foundational for the school's founding figures, then in the sense of providing a place of critical and creative engagement concerning the very question of the foundations of philosophy.[1]

The relationship between Nishida and Tanabe was initially challenged by Tanabe's "Requesting the Guidance of Professor Nishida" (1930; henceforth RGPN), which scrutinized Nishida's *The Self-Conscious System of Universals* (1928) for its attempt at systematizing philosophy from the standpoint of the "self-consciousness of absolute nothingness." However, it developed into genuine mutual criticism in 1935 when both philosophers began launching critical remarks at one another, albeit while seldom taking up their opponent's name. As Tanabe famously remarked in his *Historicist Development of Mathematics* (1954): "The first

1. See FUJITA 2015, 8–26

half of my philosophical investigations proceeded in Nishida's footsteps and *the second half* in opposition to him."[2] Historiographically, the two founding figures" mutual opposition occupied a period of less than one third of their philosophical exchange (1910–1945) and less than half of Tanabe's entire philosophical career.[3] Therefore, it is crucial to account for the nature of their mutual agreement as exemplified by the first half of Tanabe's philosophical career in order to understand the causes of their philosophical opposition.

Tanabe's statement "the first half of my philosophical investigations proceeded in Nishida's footsteps" is commonly interpreted in relation to his earliest article "On Thetic Judgment," which is based on Nishida's theory of pure experience.[4] This is corroborated by Nishida's 1914 letter to Tanabe where he speaks of "*our* direct experience,"[5] implying that the two philosophers shared the same standpoint. Tanabe's break from Nishida's philosophy is usually understood in reference to the following autobiographical remark in his *Historicist Development of Mathematics*:

> I began to diverge intellectually from Professor Nishida as his philosophical system started to take shape and became advertised as "Nishida's philosophy." Subsequently, I arrived at my current standpoint through *continued opposition to the professor's essential idea* during and after his lifetime.[6]

It is well known that the term "Nishida's philosophy" was coined by Sōda Kiichirō in his review "On the Methodology of Nishida's Philosophy" (1926), which criticized Nishida's conception of "place of absolute nothingness" for metaphysical dogmatism. Therefore, the phrase "the professor's essential idea" should allude to Nishida's "place of absolute nothingness." Accordingly, Tanabe's growing frustration with Nishida can be mapped to Nishida's gradual shift of standpoints from *An Inquiry into the Good* (1911)

2. THZ 12: 333; emphasis added. Unless stated otherwise, all translations from the original Japanese are by the authors.

3. After the publication of *Historicist Development of Mathematics*, Heidegger became Tanabe's main target of criticism. In fact, there is almost no critical mention of Nishida's philosophy during his so-called "philosophy of death" period (1953–62). Therefore, Tanabe's genuinely critical relationship with Nishida lasted for roughly 20 years.

4. See FUJITA 2015, URAI 2020.

5. NKZ[A] 19: 510: emphasis added

6. THZ 12: 333; emphasis added

to *From the Acting to the Seeing* (1927). This account has two implications: firstly, that Tanabe's philosophy was influenced by Nishida's earliest standpoint of "pure experience," and secondly, that his grievances were directed at Nishida's articulation of "the place of absolute nothingness," which diverged from the earliest standpoint. The two implications form what might be called the standard interpretation of Nishida-Tanabe relations.[7]

The standard interpretation is not altogether contentious. However, it is somewhat lopsided and, hence, misleading since it overemphasizes the influence of Nishida's theory of pure experience on the young Tanabe. While Tanabe's "On Thetic Judgement" undoubtedly had such influences, he was also inspired by the philosophies of mathematics and science. This is evidenced by his early writings, most notably by *The Outline of Science* (1918) and *Studies in Mathematical Philosophy* (1925), which earned him the recognition as the first Japanese philosopher of science. Tanabe did not fail to mention the extent of Nishida influence in the prefaces of both works.[8] However, it is above all in the philosophy of mathematics where we find Nishida's strongest influence on the young Tanabe:

> It goes without saying that it was Professor Nishida who opened my eyes to philosophy. The professor was also taken with mathematics. Naturally, he influenced my studies in the philosophy of mathematics to no small extent. My path to philosophy truly owes to the guidance of the professor.[9]

Nishida's own views on the relevance of mathematics are reflected in the preface he authored for Tanabe's *Studies in Mathematical Philosophy*. Upon commending the book for "having clarified the epistemological character of the fundamental concepts of mathematics from the standpoint of critical philosophy,"[10] Nishida writes:

> It is not required that philosophers immerse themselves in the problems of mathematical philosophy. Philosophy has had and will always have its own standpoint and domain *qua* philosophy. However, I cannot agree with those who consider mathematical philosophy as a mere part of philosophy with no bearing on the profound problems of philosophy. Mathematics has had

7. See Mine 2012, Heisig 2001.
8. THZ 2: 158, 371.
9. THZ 12: 333
10. THZ 2: 363.

> an intimate relation to philosophy from the ancient times of Pythagoras and Plato. At the depths of mathematical problems lay the profound problems of metaphysics, or rather, even the profound problems of life come in touch with mathematics.[11]

In the above, Nishida attests to the strong ties between mathematics and philosophy that existed ever since early Greek philosophy and objects to the vulgar view that demotes mathematical philosophy to a mere argument over the nature of abstract objects. On the contrary, he views the problems of mathematical philosophy as part and parcel of the practical issues that arise from lived day-to-day experience. This is what Tanabe must have meant by Nishida being "taken with mathematics." Thus, we have admissions from both philosophers in their own words regarding the significance of mathematical philosophy: from Tanabe as to how Nishida's views on mathematical philosophy shaped his own career, and from Nishida concerning the intimacy between the philosophy of mathematics on the one hand and metaphysics and lived experience on the other.

In this paper we will reveal the significance of mathematical philosophy in Tanabe's writings in RGPN, arguing that his main criticism of Nishida's "self-consciousness of absolute nothingness" involves mathematical problems related to the existence of the universal set and to the nature of numerical infinity.

Tanabe's fundamental doubts in RGPN

It is uncontested that Tanabe's RGPN played a crucial role in the intellectual formation of the Kyoto School. However, the meaning and validity of Tanabe's criticism is a controversial matter. RGPN has often been portrayed above all as a charge against the profoundly religious insights of Nishida's philosophy. It is perhaps in general defense of such insights that Japanese scholars have traditionally sided with Nishida[12]:

> With few exceptions, researchers who are concerned with the ideas of Nishida and Tanabe usually take Nishida's side on the matter, conceding some significance on Tanabe's criticism of Nishida on the one hand, but

11. THZ 2: 363; NKZ[A] 13: 196.

12. See Tsujimura 1963, 22–3; Kosaka 1997, 134.

> lambasting Tanabe for misconstruing, distorting and failing to grasp the profoundness of Nishida's philosophy on the other.[13]

However, Tanabe's RGPN offers a highly nuanced albeit abstruse criticism that cannot be brushed away by appealing to the profoundness of Nishida's insights. Ironically, Tanabe anticipated this line of criticism from Nishida's sympathizers by praising Nishida for his profoundness and lamenting his inability to grasp it:

> Some would argue that the doubts I have expressed in this essay stem from my inability to fully realize the true meaning of Professor Nishida's "*noetic* self-consciousness of place" and mistaking it for the ancient noematic determination of emanative metaphysics. Even I have long been aware that my questions arise due to the fact that my intellect is inexperience and that I am unable to follow his profound thoughts.[14]

In fact, RGPN is replete with such passages. However, these passages should not be interpreted as admissions of philosophical incompetence. If that were the case, then the text would read as a public confession rather than philosophical criticism. Since this is not the case, Tanabe's concessions should rather be understood as a kind of preemptive strategy; there are serious *formal problems* in Nishida's philosophy that cannot be mended however deeply one sympathizes with Nishida religious vision. Therefore, the validity of Tanabe's criticism is contingent on his understanding of the formal aspects of Nishida's philosophy.

Unfortunately, RGPN is an extremely difficult text, rendering an assessment of Tanabe's grasp of Nishida's philosophy and the nature of his fundamental doubts a formidable task. The first step towards solving this task is to come to terms with the complexity of RGPN. The first reason for the complexity lies in the nature of the subject matter that Tanabe is criticizing. Nishida was very much a system builder, who sought to devise a system of complete and self-contained philosophy from a unified standpoint. The development of his philosophy can be traced in terms of the shifting of standpoints. In his earliest work *An Inquiry into the Good* he attempted to explain everything from the psychologistic standpoint of "pure experience"

13. MINE 2012, 6

14. TANABE 2020, 289; translation modified

and in his next major treatise *Intuition and Reflection in Self-Consciousness* (1917[15]) from the voluntarist standpoint of "absolute free will." It was only with the conception of "absolute nothingness" as developed in *From the Acting to the Seeing* (1927) that he arrived at a standpoint, which remained constant throughout his subsequent career.

The standpoint of "absolute nothingness" was reached through a process of "logicization" (論理化), i.e., by basing various philosophical disciplines on the logical structure of judgements. For Nishida, the analysis of judgements revealed isomorphic relations between logic, metaphysics, epistemology and phenomenology. In the judgement "This A is B," "This A" corresponds to the logical subject, the particular species, the object of knowledge and the noema of judging. The determination "is B" corresponds to the logical predicate, the universal genus, the contents of knowledge and the noesis of judging. Such structure preserving relations allowed Nishida to discuss all of these disciplines at once, mixing metaphysical terminology with that of epistemology and phenomenology. Tanabe's criticism introduces a new isomorphism with set theory; "This A is B" is interpreted as "A is contained in the set B." It is in the framework of the foundations of mathematics that Tanabe formulates his "fundamental doubts" towards Nishida, adding: "it is not that I have used mathematical foundationalism as a clue to think of a philosophical standpoint, but that I think it is possible to more clearly state my doubts towards the latter by means of the former."

Although the above supposed isomorphisms were convenient for Nishida's system-building purposes, they obfuscate the object of Tanabe's criticism. That is, Tanabe's criticism is not confined to any single one of the above philosophical disciplines, but incorporates metaphysical concerns with mathematical logic, phenomenology and the rest. Thus, the reader of RGPN who is not acquainted with the intricacies of Nishida's philosophy will fail to understand how Tanabe's criticism that the standpoint of "absolute nothingness" invokes set theoretic paradoxes can possibly relate to his other criticisms involving notions of historical reality and freedom of will. On the other hand, this shows that Tanabe's criticism is not aimed at a single

15. While the collected volume was published in 1917, it consists of essays originally published from 1913 onwards.

aspect of Nishida's philosophy but intends to reject *the entirety* of Nishida's system of philosophy.

The second difficulty of RGPN pertains to the apparent inconsistency of Tanabe's fundamental doubts, which seem to be mutually exclusive. Firstly, Tanabe identifies Nishida's "place of absolute nothingness" (the standpoint of all philosophical standpoints) with the universal set, thereby charging him with self-contradiction:

> Yet, even what we can call the standpoint without a standpoint—that is, the self-consciousness of absolute nothingness—as a religion, when it plays the role of the standpoint that gives the final principle to a philosophical system, becomes a single standpoint that guides us to understand the lower determinate and abstract standpoints as its determinations, thereby failing to remain as the "standpoint of all standpoints".... If philosophy were to take this religious standpoint as its own standpoint, then it would be destined to meet with its own abolition. As we observe in set theory's paradox, "the set of all sets," the contradiction that the absolutization of the self necessarily relativizes the self shows its face here.[16]

Given the above criticism, Tanabe seems to attribute to Nishida a kind of mystical view that fails to provide a rational foundation for philosophy. And yet, he also charges Nishida's "religious" standpoint with extreme rationalism that has "tremendous difficulties in accommodating the very irrationality of history into his system"[17]:

> In actuality, what we call "religious experience" is established in trans-rational and trans-valued self-consciousness where the irrational is rationalized and the anti-valued is valued. But when philosophy goes beyond accepting religious experience as one standpoint and further determines it as its ground in the? process of completing itself as the standpoint of standpoints, all the irrational would be interpreted as the hypothetical manifestation of the rational and the acting that rationalizes the irrational becomes a shadow of the world as the detour to seeing.[18]

It is hard to reconcile the above two fundamental doubts. After all, if Tanabe's first criticism is correct and Nishida's "self-consciousness of abso-

16. TANABE 2020, 291–2; translation modified.
17. Ibid, 297
18. Ibid, 293–4.

lute nothingness" is a theoretically inconsistent standpoint that brings about the abolition of philosophy, then how can it be a principle that fails to accommodate irrationality? If anything, it ought to be the embodiment of irrationality. Conversely, if Nishida's standpoint leaves no room for the irrational, then it cannot invoke paradoxes in any substantial sense. However, the apparent incoherence can be explained by Tanabe's views on the historical development of the foundations of mathematics, which he uses to frame Nishida's search for the foundations of philosophy.

Tanabe's first doubt corresponds to the standpoint of "naive" set theory, which led to the emergence of set theoretic paradoxes, whereas the second doubt corresponds to the development of axiomatic set theory that sought to avoid these paradoxes by imposing restrictions on set membership. By analogy, if Nishida's "absolute nothingness" is accepted "naively" as the standpoint of all philosophical standpoints that is itself without a standpoint, then it falls into self-contradiction and must be salvaged by imposing restrictions on all philosophical standpoints by way of axiomatization. There is also a second analogy in play. While Tanabe concedes, at first, that Nishida's philosophical standpoint attempts to capture a distinctly Eastern view of religion that is grounded in nothingness, it falls into self-contradiction and becomes indistinguishable from the dogmas of Judeo-Christian theology (ibid, 291–292). Thus, Nishida's religionized system of philosophy would lead to complete dogmatism. Accordingly, Tanabe's criticism of Nishida's religious standpoint reflects his own critical attitude towards axiomatic set theory:

> Just as axiom theory must give way to intuitionism here, philosophy must also concede some points to relativism over absolutism.... Here lies the reason why philosophy exists as the knowledge loving movement that seeks the absolute while constantly following the relative. It is the same as the way in which the intuitionist set theory neither leads to the finitism (*Finitismus*) that completely denies any infinite set nor takes the absolute world-view of axiom theory but tries to stop at the always incomplete, open process of negation that pertains to free choice-sequences (*frei werdende Wahlfolge*).[19]

There are two analogies to be drawn between religion and axiomatic

19. Ibid, 292; translation modified.

set theory from Tanabe's line of reasoning. The first analogy concerns the notion of *self-evidence*. In religion and axiomatic set theory alike, some beliefs are postulated as foundational and, hence, in need of no further justification. This, in turn, imposes strict restrictions on the *freedom of thought*. That is, if we base our thinking on self-evident beliefs, then it suffices to show that an idea contradicts such beliefs in order to discard them as irrational or heretical hypotheses. It is in this sense that Tanabe accuses Nishida's philosophical system of treating "the irrational as a hypothetical manifestation of the rational" (ibid, 294). It is also for this reason that he insists that Nishida's philosophy cannot account for the irrationality of history.

The second analogy concerns the notion of *ontological givenness*. Here, the analogy lies between the definition of natural numbers from Peano axioms and the Judeo-Christian theology of genesis, i.e., between the construction of natural numbers from the empty set and the creation of the world from nothingness. Tanabe gives such views the label "emanative logic," since in both cases the domain of existence is at once restricted to and given by axioms. This, however, rules out *creative activity*, for nothing can be said to exist that cannot be derived from axioms. Due to such lack of creativity, Tanabe draws an analogy between Nishida's "self-consciousness of absolute nothingness" and religious quietism, which holds that perfection consists in the passivity of the soul:

> As opposed to religion as the absolute stillness that subsumes all *dunamis*, philosophy must persistently remain as the dynamic movement that seeks stillness. The former holds the standpoint of quieting all movement, while on the contrary, the latter makes any stillness tentative, thereby constantly turning it into movement. (ibid, 288; translation modified)

To summarize the above, Tanabe's fundamental doubts comprise an intricate narrative that situate Nishida's philosophy within the historical emergence of axiomatic set theory, which in turn is likened to Judeo-Christian theology. According to this narrative, Nishida's "absolute nothingness" as the "standpoint of all standpoints" turns out to be a dialectical ploy for introducing religious dogmas to philosophy, much like the unrestricted comprehension principle paved the way for the axiomatization of set theory.

There are, however, several problems with the identification of Nishida's philosophical standpoint with that of axiomatic set theory, which lend

credence to scholars who accuse Tanabe of misrepresenting Nishida's philosophy from an alien point of view. The first and most obvious problem with Tanabe's narrative is that Nishida's philosophical writings simply do not contain any system-building rules that are comparable to the axioms of set theory. Moreover, even if Nishida's concept of "absolute nothingness" has the same logical structure as, say, Russell's paradox, then his philosophy should be likened to naive set theory, not its axiomatized counterpart. Lastly, Tanabe fails to address the fact that Nishida characterized his shift from the standpoint of "absolute free will" to that of "absolute nothingness" as a shift from voluntarism to "a kind of *intuitionism*."[20] Although it is unclear how the specific intuitionism in Nishida's middle period relates to mathematical intuitionism, some scholars have found strong affinities between mathematical intuitionism and Nishida's later philosophy.[21]

It is probably the case that Tanabe's depiction of Nishida's philosophy as a counterpart to axiomatic set theory served to flesh out his own views regarding the relation between philosophy and the foundations of mathematics rather than to give an accurate representation of Nishida's understanding of the relationship between the two disciplines. However, as implausible as Tanabe's representation of Nishida's philosophy is as a whole, in the following we will argue the RGPN contains genuine points of criticism related to Nishida's "self-consciousness of absolute nothingness.

Self-consciousness as the infinite in early nishida

The word "self-consciousness" (also rendered "self-awareness," 自覚) is consistently employed as a technical term throughout Nishida's career ever since the publication of his maiden treatise as is evidenced by the titles of three of his major works: *Intuition and Reflection in Self-Consciousness*, *The Self-Conscious System of Universals* (1929) and the *Self-Conscious Determinations of Nothingness* (1932). Harking back at the development of his early philosophy,[22] Nishida traces the set of problems which he sought to solve in *Intuition and Reflection in Self-Consciousness* (1917) to the article

20. NKZ[A] 4: 5.
21. Noe 2009.
22. NKZ[A] 1: 267.

"Logical understanding and mathematical understanding" (1912). As the title suggests, Nishida introduces the historical debate regarding the foundations of mathematics, *viz.* the relation between logic and mathematics. He presents the debate in terms of homogeneity *vs*. heterogeneity. The prior camp includes the logicism (i.e., the view that mathematics is founded on *logical* axioms) of Bertrand Russell and Louis Coutura. The latter camp, which appeals to an essential difference between logic and mathematics, includes the Neo-Kantian Heinrich Rickert and the pre-intuitionist Henri Poincaré. Although Nishida rejects the views of the latter group, he does not side with the logicists either. He proposes, instead, that the two fields are related dialectically within *self-consciousness*, which is mathematical in that it generates an infinite series of natural numbers and logical in that the process is necessitated by pure thought.

It might seem then that Nishida proposes to ground both fields in metaphysics. This is only partly true, since his concept of self-consciousness is based on Richard Dedekind's mathematical definition of infinity and Josiah Royce's notion of "self-representative system," which is a philosophical defense of actual infinity. Both thinkers figure prominently in Nishida's "Logical understanding and mathematical understanding." Apart from the definition, Nishida took from Dedekind the view that the realm of one's thought is infinite:

> When we think of something, that is, when we treat something as an object of thought, then this thought is also contained [in thinking, which] can thereby progress infinitely. According to Dedekind, if we completely abstract from the particular properties of our objects of thought and solely focus on their distinctness and mutual relations, then we see the series of natural numbers.[23]

The idea can be represented with the following. Consider the set of all objects of thought T. The set T cannot be empty even if the world contains no other objects, because T is itself an object of thought. Thus, T must include at least itself as a member. But the thought t_1: "$T \in T$" (i.e., the thought: "T is a member of itself") is both distinct from and included in T; and so are the subsequent afterthoughts t_2: "$t_1 \in T$", t_3: "$t_2 \in$

23. NKZ[A] 1, 147.

T" ... t_{n+1}: "$t_n \varepsilon T$". Each generated afterthought can be paired with a natural number. In order to show that the entire domain is infinite, we must discern a proper subset of T (e.g., T_{2n} that corresponds to even numbers) and introduce a bijective function between the two sets.

However, two kinds of difficulties arise with this proof. The first difficulty anticipates Tanabe's critical remarks in RGPN concerning the paradoxes of set theory. John Maraldo is one of the few scholars of Nishida's philosophy who has drawn attention to the connection between the mathematical origins of Nishida's concept of "self-consciousness" and Russell's paradox:

> Dedekind's attempted proof is replete with difficulties. First, one's "realm of thoughts" is not an acceptable concept in axiomatic set theory. Secondly, if we translate this concept into a mathematically acceptable notion, the "set of all thoughts" becomes the set of all sets, and this entails various well-known antinomies in set theory. For example, the set of all sets would have to include the set of all sets that are not members of themselves, and thus would entail Russell's paradox.[24]

This problem, however, is not as serious as Maraldo makes it out to be. Although he correctly points out that it is problematic for Dedekind's purposes, the paradox need not concern Nishida, at least in this early stage of his philosophy. Contrary to the mathematical common sense of today, the universal set need not entail the kinds of paradoxes that led to the emergence of Zermelo–Fraenkel set theory. In order to define Russell's set there needs to exist at least one set that is not a member of itself. Likewise, in order to get something akin to Cantor's paradox, the world must be allowed to contain its own power-set. Power-sets, however, are not members of themselves. Accordingly, both paradoxes can be avoided in a version of set theory which allows sets to be members of themselves, but prohibits all sets that are not members of themselves. Therefore, if Nishida were to adopt a metaphysical view according to which the world consists of nothing but infinitely many self-contained copies of itself, then the universal set becomes unproblematic.

The second kind of difficulty, which pertains to the philosophical partiality of Dedekind's definition of infinity, is harder to overcome. Ever since Aristotle, philosophers have distinguished between metaphysical and math-

24. Maraldo 2006, 147.

ematical senses of the term "infinity." The prior sense concerns entities without limits (e.g., the universe can be called infinite if it is unlimited), whereas the latter sense concerns the number of entities (e.g., the quantity of natural numbers). There are two further characterizations of mathematical infinity: potential and actual. Aristotle defined the prior in terms of that which always has something beyond itself. This view conforms to the intuition of infinity as an *endless process*; natural numbers are infinite because we simply cannot finish *counting* all of them. In contrast, the view of actual infinity involves *definite objects* rather than processes and conforms to a set-theoretical notion; the symbol N does not denote an endless process of counting but the set, which comprehends all natural numbers.

The contrast between the two views is reflected in natural language. When we speak of the infinite in terms of potentiality, we employ "dynamic language" and refer to acts of "thinking," "counting," "collecting," *etc*. When we speak of the infinite in terms of actuality, we employ "static language" and refer to definite objects, such as "the realm of thought," "the set of natural numbers," "the mathematical universe" *etc*. In order for Dedekind's proof to work, "the realm of thought" must be deemed an actually infinite totality, otherwise the existence of a bijective relation between the members of "the realm of thought" and those of its proper subset cannot be asserted, because there will always remain an overabundance of newly generated elements in the superset that do not map onto the subset (compare Figures 1 and 2).[25]

The realm of thought	t_1	t_2	t_3	t_4	t_5 ...
	↓	↓	↓	↓	↓
Its proper subset	t_2	t_4	?	?	? ...

Figure 1. Potentially infinite realm of thought

The realm of thought	t_1	t_2	t_3	t_4, ...	t_n
	↓	↓	↓	↓	↓
Its proper subset	t_2	t_4	t_6	t_8	... $t_{2\times n}$

Figure 2. Actually infinite realm of thought[25]

25. Both figures represent "the realm of thought" comprising numerically indexed thoughts. The indexing enables the introduction of a bijective function between all thoughts present in the realm and its proper subset of thoughts with even-numbered indexes. Figure 1 shows that

As shown in the above figures, an actually infinite realm of thought renders all talk of the *generation* or *creation* of thoughts meaningless; all thoughts must preexist in the said realm. For this reason, Royce was careful in distinguishing the two kinds of language when exemplifying his idea of self-representative systems with the thought experiment of "the perfect map of England," insisting that in the assertion:

> "A part of England perfectly maps all England, on a smaller scale": there would be implied the assertion, *not now of a process of trying to draw maps*, but of the *contemporaneous presence*, in England, of an infinite number of maps, of the type just described. The whole infinite series, possessing no last member, would be asserted as a fact of existence.[26]

Yet, in "Logical understanding and mathematical understanding," Nishida was not sensitive to the philosophical implications that underlie the distinction between processes and definite objects. Not only does he speak of "the developmental progression of the system of thought," which generates natural numbers, he refers to this infinite progression with the term "dynamic universal."[27] The confusion between the two kinds of infinity proved to be a stumbling block for Nishida in his *Intuition and Reflection in Self-Consciousness*, leaving him with the following dilemma. If self-consciousness is Dedekind-infinite, then Nishida must subscribe to the doctrine of actual infinity and abandon the notion of dynamism. On the other hand, if self-consciousness is a potentially infinite process, then it is not Dedekind-infinite and hence fundamentally incomplete. In this latter case, self-consciousness does not constitute a *definite* philosophical standpoint, since it is always in the making. This struggle is clearly reflected in the tenth section of the above-mentioned work, published in March 1914:

> If with Dedekind we see infinity as the projection of a system within a system and a number as a series of such infinities, then the activity which projects the system within the system is a subjective process and the finite number is

a realm with an actually infinite stock of thoughts is Dedekind-infinite. Figure 2 depicts the failure of bijection at the fifth stage in a potentially infinite process of thought-generation. Note the incremental addition of unpaired elements after every two stages.

26. Royce 1900, 506–7; emphasis added.

27. NKZ[A] 1, 266–7.

> its objective correlate, and one may equate actual infinity, seeing the infinite within the finite, with experience. (Nishida 1987, 36; translation modified)

In the above, Nishida attempts to reconceptualize the notion of actual infinity in terms of the "seeing the infinite within the finite." The general idea is to identify "the realm of thought" with an infinite process, which generates finite objects of experience through the activity of self-objectification. Accordingly, the "actual" in "actual infinity" pertains to finite objects and "infinity" to the underlying subjective process. The terms "seeing" (見ること) and "activity" (働き) employed here foreshadow Nishida's philosophical turning point in *From the Acting to the Seeing*. Unfortunately, this initial attempt at reconceptualization only prolongs the dilemma: is the process itself actually or potentially infinite? In the prior case, it does not admit of genuine activity but in the latter case it does not constitute a definite philosophical standpoint. It is evident that the search for a principle which could marry the active aspect of self-consciousness to its comprehensive aspect led Nishida to conclude his investigations in *Intuition and Reflection in Self-Consciousness* by turning to the standpoint of "absolute freedom of will." This turn came at the admitted expense of the principle of noncontradiction and in favor of neoplatonic mysticism:

> The absolute freedom of will can be deemed contradictory. And yet, as with Eriugena's God who is characteristic of "stationary flux" and "mobile rest," our experience of free will is truly that which unifies logically contradictory aspects. It is impossible to give a logical account of the unity of contradictory aspects.... Our demand for logic is but a part of conscience, for the practical self stands above the intellectual self. Our world is begotten by the ought, its beginning conforms to God's will: "And God said "Let there be light!" and there was light."[28]

Remarkably, Nishida's view of self-consciousness involves all three conceptions of the infinite. Self-consciousness is mathematically infinite in terms of both potentiality and actuality. These mutually exclusive aspects are rendered compatible by the absolute freedom of will, which is infinite in the metaphysical sense of transcending the limits of logical consistency. As is well known, Nishida was dissatisfied with his solution in *Intuition and*

28. NKZ[A] 2, 184.

Reflection in Self-consciousness, remarking famously: "I had broken my lance, exhausted my quiver, and capitulated to the enemy camp of mysticism."[29]

In *From the Acting to the Seeing*, Nishida abandoned the standpoint of absolute free will as the ultimate standpoint of philosophy in favor of a higher standpoint with the express purpose of providing a *logical* foundation for his system of philosophy: "the place of absolute nothingness." As we will see in the following, this shifting of standpoints was the straw that broke the camel's back for Tanabe.

Tanabe's early views on the infinite and RGPN

In the previous part we saw how Nishida, when confronted with the problem of dynamism *vs* completeness, grasped both horns of the dilemma thereby admitting to the contradictory nature of self-consciousness. In the following sections we will show that Tanabe's fundamental doubts in RGPN echoe his own views on the infinite and self-consciousness.

The Nature of Self-Consciousness

Tanabe's approach to the infinite nature of self-consciousness is akin to Nishida in that it involves the reconceptualization of actual infinity. If pressed with Nishida's dilemma, however, he would not hesitate to salvage the dynamic nature of self-consciousness by *renouncing* its actual completeness. Tanabe's argument is presented in the article "The continuum, the differential and the infinite" (1915; chapter 3 of *Studies in Mathematical Philosophy*), which concerns the foundations of mathematics. Following Nishida, Tanabe approaches these issues in reference to Dedekind and Royce, but also to Cantor and Bolzano:

> As already argued in the first chapter concerning the generation of the infinite system of natural numbers, each stage of our thinking establishes an internal imperative unity (内面的当為の統一), which contains a developmental incentive (発展の契機) for progressing to the next stage. Therefore, it is only in reference to Cantor's so-called "systems of actual infinity" that we can arrive at a concrete and exhaustive characterization of this [process]. The unification of one thought-process within the self calls for a further reflec-

29. Nishida 1987, xxvi.

> tion on that thought-process; it is the design, ideal or the internal imperative that establishes the actual infinity of Royce's so-called "self-representative system." Dedekind exemplified the existence of infinite systems with "my realm of thought," but it was Bolzano's insight, which first served to clarify the nature of infinity by considering aggregates of sentences and their truth values.[30]

This passage is as confusing as it is misleading, for it suggests that Tanabe is following Nishida's footsteps right up to the dilemma that led the latter to logical contradictions. Not only does he show the same insensitivity to the difference between processes and definite objects as seen with Nishida, but he also makes explicit use of Cantor's "systems of actual infinity" for characterizing infinite thought processes. The source of this confusion is exactly Tanabe's misleading reference to Cantor, since he has a wholly different notion of absolute infinity in mind.

In a previous passage, Tanabe recognizes set-theoretic difficulties with the idea of actual infinity as an absolute totality, which were raised by Maraldo concerning Dedekind's "realm of thought." That is, if we interpret this realm in terms of the universal set, then we are led to Russell's paradox.[31] More significantly, he addresses Poincaré's rejection of "Cantorism," *viz.* the existence of actual infinity:

> There is no actual infinity, and when we speak of an infinite collection, we understand a collection to which we can add new elements unceasingly..., for the classification could not properly be completed except when the list was ended.[32]

Poincaré's rejection can be dismissed as question-begging, since it is obviously premised on the idea of potential infinity, which we have already shown to be incompatible with Dedekind's definition of infinite sets. Surprisingly, Tanabe does not adopt this strategy but seems to be in fundamental agreement with Poincaré. And yet, he does not regard Poincaré's criticism as implying a *reductio* argument against the actual existence of an infinite universal set. How to make sense of this?

30. THZ 2: 482–3.

31. THZ 2: 480.

32. POINCARÉ 1913, 47; Tanabe's citation: THZ 2: 101.

Tanabe's position resembles Thomas Aquinas" merging of Aristotelian finitism with the Christian belief in God's actual infinitude (see: Moore 2019, 47–48). Like Aquinas, whose solution involved the distinction between metaphysical and mathematical notions of infinity, Tanabe distinguishes intensional (or qualitative) infinity from extensional (or quantitative) infinity. In the prior case we are referring to infinity as a *property* and in the latter case to the *number of elements*.[33] According to Tanabe, "the realm of thought" conceived as the universal set becomes problematic only when regarded in terms of extension. He agrees with Poincaré in that it is impossible for the set of all sets to comprise a completed series of thoughts, because the very idea of it doing so is a newly generated and distinct thought, which is not included in the original set and, thus, contradicts the definition of universal set:

> The set used as the material (材料) for defining the concept "the set of all sets" establishes a set, which cannot be contained by the definition in essence. However, "the set of all sets" must take all sets as its members by virtue of its definition. This is an unavoidable contradiction.[34]

According to Tanabe, this contradiction can be circumvented by heeding special attention to the word "all." He proposes that in this case it should not be interpreted as a *quantifier* but rather as the property of "internal imperative unity." Thus, the universal set is not infinite by virtue of quantity, but by virtue of the said property, "which contains a developmental incentive for progressing to the next stage."

Let us clarify Tanabe's idea with the following illustration. Suppose there exists an ideal computer that is programmed with an impossible terminating condition; e.g., tasked with listing *all* natural numbers starting from the first. At each stage, the program will introduce a new number, which does not satisfy the terminating condition at pain of contradiction. The ideal computer would be a finite entity producing finite lists of numbers but would be infinite in essence. This captures what Tanabe means by "actual infinity." If we apply Tanabe's idea to Dedekind's "realm of thought," then

33. THZ 2: 483.
34. THZ 2: 480.

the said realm would be *actual* in the sense of actually existing as a definite object, but *infinite* in that it never stops thinking about itself.

Tanabe's solution is not without problems of its own. Firstly, he does not distinguish the variety of paradoxes related to the universal set from the particular paradox posed by Russell's set. He does succeed in avoiding the construction of the "quantitative" universal set, which *leads to* Russell's paradox. However, he does not specify restrictions for the construction of Russell's set, which is neither contingent on the existence of actual infinities nor on that of the universal set. In fact, Russell's set could be obtained from a single set that is not a member of itself, provided that the universe contained no other sets of that type.[35]

Secondly, the label "actual infinity" (現実的無限) is a complete misnomer, since the debate about infinitude—as understood by virtually all mathematicians including Cantor and Poincaré—concerned the number of elements not the properties of sets. Therefore, what he proposes is essentially a modification of potential infinity. His choice to stick with this label can be interpreted as a nod to Nishida, who characterized self-consciousness as actually infinite.

Notwithstanding the unfortunate label, the substance of Tanabe's conception of infinity should not be understood as a mere nod to his mentor, but as an attempt to provide a logically sound foundation to Nishida's concept of self-consciousness. As Tanabe himself put it: "it is my task to make Nishida's philosophy logically rigorous."[36] We can understand the significance of his task as an answer to the following question that seems to have haunted Nishida. How can we grasp self-consciousness as a definite totality if it consists in an indefinite process? Tanabe answers by interpreting the indefinite process of self-consciousness as an essential property of a definite object, i.e., an indefinite expansion of the definite self. In other words, the identity of the self does not derive from an actually infinite number of thought-instances but from its capacity for perpetual self-contemplation. However, in sharp contrast to Royce and in anticipation of his criticism in RGPN, he is careful in emphasizing its essentially incomplete nature:

35. That is, the unrestricted comprehension principle allows us to the define the set $R^* = \{x \mid (x \notin x)$ and $\forall y(y \notin y \rightarrow y = x)\}$.

36. Cited in Ishikawa 1963, 3.

> Were we to identify this unity of reflection with our self-consciousness by focusing on its kernel of unity, then we would find that each stage of self-consciousness projects the totality of the self (我). Moreover, the self of the so-called individual alongside all other selves can be said to project the totality of the great self (Ātman, 大我). However, both the self-consciousness of the ego [lit. "the small self," 小我] and the unitedness (帰一) of Ātman [lit., "the great self"] are processes of internal development and not products of completion. There is no termination of self-consciousness. No matter how many layers we accumulate through reflection, *there is no ultimate self-consciousness*.[37]

Tanabe's Critique Revisited

Based on the above analysis of their earlier philosophical collaboration, it should be clear why Tanabe began to diverge intellectually from Nishida after the publication of *From the Acting to the Seeing*, culminating with the strident criticism of RGPN. To recall, Tanabe's two fundamental doubts in RGPN as discussed above concerned the logical inconsistency of "self-consciousness of absolute nothingness" and its implied "absolute stillness that subsumes all *dunamis*." Both of these criticisms can be analyzed in terms of the philosophy of mathematics. Essentially, Tanabe accuses Nishida of basing his philosophy on an actually infinite Russell set, with "actual infinity" corresponding to "self-consciousness" and "Russell set" corresponding to "absolute nothingness."

The reason Tanabe accuses Nishida of subscribing to the doctrine of actual infinity is most probably Nishida's following characterization of "seeing" in *From the Acting to the Seeing*:

> By reflecting itself within itself, the self transcends all activity (作用) becoming the inactive substance (働くことなき基体) and seeing pure activity as its object. As activity yields activity, the activity of inactive infinity emerges by the unchanging and immobile (不変不動) substance's seeing of itself.... When the infinite *telos* contained within reality is thought to be the substance that encompasses the totality, the *ego* becomes the substance of freedom, and there is no point we could go to that is not the ego.[38]

37. THZ 2: 484; emphasis added.

38. NKZ^{A} 4: 128–9.

The above conception of self-consciousness as a form of "seeing" is the diametrical opposite of how Tanabe envisioned self-consciousness in "The continuum, the differential and the infinite." For Tanabe, self-consciousness consists in an endless (i.e., potentially infinite) process of reflection, which aims at but never manages to subsume the world in its totality. In *From the Acting to the Seeing*, self-consciousness becomes a faculty that allows the ego to stand over and above the world, seeing the infinite totality of its contents as reflections of the immobile and universal substance.

The dichotomy between concepts of actual and potential infinity allows us to map Tanabe's point of divergence from Nishida's philosophy. In spite of its mysticism, Nishida's standpoint of absolute free will provided a conceptually coherent view that married the completeness of actual infinity with the dynamism of potential infinity by renouncing the principles of classical logic. Tanabe, however, took it upon himself to provide a *logically consistent* foundation to Nishida's philosophy, which led him to abandon the completeness of actual infinity in favor of the dynamism of potential infinity. In *From the Acting to the Seeing*, Nishida sought to provide a logical basis for his philosophy, which led him to characterize his ultimate standpoint in terms of actually infinite *immobile* substance. This, in turn, rendered all notions pertaining to genuine activity (e.g., creativity, development and emergence) mysterious and became the target of Tanabe's criticism in RGPN.

Ironically, Nishida's attempt at "logicizing" his system of philosophy leads us to Tanabe's second fundamental doubt: the logical inconsistency of "absolute nothingness." Tanabe's main accusation is that Nishida's "absolute nothingness" leads to a dilemma akin to Russell's paradox. In Tanabe's paraphrasal, the standpoint of "absolute nothingness" comprises a set that grounds all philosophical standpoints, which do not ground themselves. Trouble arises when we ask whether "absolute nothingness" is self-grounded or not. If it is, then it cannot contain itself as a member of the set of all non-self-grounded philosophical standpoints and, hence, cannot comprise the set of *all* philosophical standpoints. In order to meet the requirement of comprehension, it must itself be non-self-grounded. This, in turn, contradicts the requirement of *providing the ground* for all philosophical standpoints. Thus, if it is self-grounded then it cannot be self-contained and *vice versa*. Following classical logic, one

must simply conclude that such a set does not exist: it is quite literally absolutely nothing.

Concluding remarks

In this paper we showed that Tanabe's fundamental doubts in RGPN can be understood within the framework of the philosophy of mathematics, *viz.* infinity and the universal set. As Tanabe himself put it:

> It is not that I have used the foundations of mathematics as a manual for considering [Nishida's] philosophical standpoint, but that I think it is possible to more clearly state my doubts towards the latter by means of the former.[39]

Unfortunately, the validity of Tanabe's criticism is a question unto itself that falls beyond the scope of this paper. Having said this, parts of Tanabe's criticism are outright implausible. The most dubious part of RGPN concerns Tanabe's depiction of Nishida as a latent proponent of axiomatic set theory. As such, we do not anticipate a heated discussion over this issue. However, we would like to draw attention to two questions that present genuine challenges for Nishida's apologists. Since the questions are inherently *formal*, they cannot be swept under the rug by appealing to the *content* of Nishida's profound insights. To do so would be to discredit the main goal of Nishida's project in *From the Acting to the Seeing*, viz. developing the logical basis for his philosophy. Firstly, if Nishida's "self-consciousness of absolute nothingness" is actually infinite, as Tanabe suggests, then how does Nishida account for genuine activity? Secondly, how does Nishida's "absolute nothingness" avoid falling into Russell's paradox?

The second question is the harder one. On the face of it, the question could be dismissed given that Nishida never explicitly identified the concept of "absolute nothingness" with a mathematical set. However, Russell's set theoretical paradox can be recast in terms of predicates, which recalls Nishida's definition of "absolute nothingness" as the predicate that does not become the subject of predication. Drawing from Tanabe, we might ask: is it true that absolute nothingness is absolute nothingness? If it is true, then we are predicating absolute nothingness of itself, which obviously contra-

39. Tanabe 2020, 292; translation modified.

dicts the definition. However, if it is false, then it satisfies the definition. This problem is further complicated by passages where Nishida is apparently contradicting himself:

> *das letzte transzendente Prädikative* [the last transcendent predicate]. This is the true subject of judgement… If we adopt Bosanquet's notion of the subject, then the true subject is the predicate that does not become the subject.[40]

What to make of this apparent contradiction? We would like to offer a possible strategy for Nishida's apologists, one that preserves the integrity of Tanabe's criticism. That is, Tanabe's criticism is valid in that Nishida's "self-consciousness of absolute nothingness" is in fact contradictory. However, Tanabe failed to realize that Nishida was a dialetheist. Dialetheism is the view that some (but not all) contradictory propositions about the world are true. While this may seem an extravagant solution, it has two merits.

Firstly, due to the development of paraconsistent logic, dialetheism can avoid charges of illogicality. While all systems of paraconsistent logic reject the principle of explosion, some paraconsistent logics like Graham Priest's LP allow for "true contradictions," i.e., propositions that are both true and false. Thus, dialetheism comes with a set of tools that can shed light on the structure of Nishida's philosophy.

Secondly, there is some historical evidence to support this strategy. In a newspaper article "Religion and philosophy," published in *Yomiuri-shimbun* three months after the publication of RGPN, Nishida had this to say:

> There are many new theories that advocate the clear separation of religion and philosophy, so that they do not transgress each other's boundaries. This is exactly Tanabe's question. I have endeavored for a long time to clarify their point of contact. I don't have enough time to present the whole story, but *I believe that it is possible to speak of the truth from contradictions* and of being from nothingness. I cannot remain satisfied with the Kantian idea of splitting the two apart. Having said this, the idea can be easily misinterpreted in discussion and must be spelt out in writing.[41]

However, there is one obvious drawback to this interpretive strategy

40. NKZ^{A} 13: 269.

41. NKZ^{B} 24: 12; emphasis added.

that needs to be addressed. If Nishida was secretly a dialetheist, then what prompted him to abandon the earlier standpoint of "absolute free will" in the first place? The contradiction resulting from the combination of actual and potential infinities cannot be the answer, as dialetheism allows for contradictions. This raises the question: why did Nishida consider the contradiction involved in "absolute nothingness" philosophically more plausible than the previous concept? This concern extends to the overall development of Nishida's philosophy. On the one hand, if Nishida had always been a dialetheist, the progression of his ideas cannot be explained as the resolution of contradictions. On the other hand, if he only became a dialetheist in his middle period, why didn't he revert to the contradictory ideas from his earlier period? Therefore, a comprehensive interpretation of Nishida's philosophy from a dialetheist perspective requires a non-formal explanation for the motive force behind his thoughts.

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Abbreviations

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