

How closer can methodologies approach life?: The study of “bodily knowing” in Japan

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Abstract: *“Bodily knowing” or “shintai chi” has emerged in Japan since the 1990s in sports and exercise science, education, and cognitive science. This paper explores specific methodologies used in bodily knowing research to shed light on its future development. Bodily knowing encompasses skills, movements, and knowledge rooted in the body. Various fields advocate for studying bodily knowing, recognizing its potential. The paper highlights existing methodologies in bodily knowing research, including analyzing sports and movement skills, exploring aesthetics in everyday life, and self-support research by individuals with disabilities. These methodologies reveal aspects that traditional scientific approaches may neglect and offer insights into constructing a potent methodology for bodily knowing research.*

1. Introduction

The concept of “*Shintai chi* (hereafter, bodily knowing)”¹ is under discussion in Japan since the 1990s, primarily in the fields of sports and exercise science, education, and cognitive science. This paper aims to examine the methodologies of bodily knowing research, mainly focusing on specific examples, and explore its future methodology.

Shintai chi is a compound word consisting of *shintai* (body) and *chi* (knowledge), representing a dimension of knowledge based on the body, the knowledge possessed by the body or rooted in the body, and embodied knowledge. It narrowly refers to bodily movements and skills such as sports or artisanal skills and, in a broader sense, dimensions of knowledge that are fundamentally bonded to human learning in general. Higuchi (2021) has reviewed the Japanese literature on bodily knowing and listed the main research fields in which it is discussed, such as physical education and sports, education, cultural studies, and system theory. He also describes the possibilities and significance of the research on bodily knowing (Higuchi et al., 2017). In addition, he expects it to expand the base of the notion of knowledge or even change the very system of knowledge or bring about a revolutionary change in academia where objective, reason-centered knowledge prevails (Higuchi, 2021).

In a sense, the emergence of the concept and field of bodily knowing is the antithesis of

¹ *Shintai chi* is translated as embodied knowledge, embodied wisdom, and embodied intelligence. I chose to use the verb “knowing” instead of the noun “knowledge” because the focus is on the process of creating knowledge, rather than the knowledge as an object. This understanding aligns with Higuchi (2021)’s perspective on translation.

traditional objective-oriented science. Some phenomena cannot be captured through traditional science that relies on universality, objectivity, or reproducibility principles. A different approach from the so-called “scientific research” has emerged as a necessity to explore these phenomena. As a response, the notion of bodily knowing and its methodologies has begun to be advocated in various fields. At least, within the limited scope of the respective fields where it is found, their potential and academic value is beginning to be recognized. For example, in sports and exercise studies, the *Japan Society of Sport Movement and Behaviour* was established in 1993 under the impact of Akitomo Kaneko's consecutive research on bodily knowing. Moreover, under the influence of Masaki Suwa's research on bodily knowing in the field of artificial intelligence, the Special Interest Group of Skill Science (SIG-SKL), one of the subdivision groups of the *Japanese Society for Artificial Intelligence*, was established in 2005, making 134 presentation reports by 2019. However, these cases have yet to spread beyond their respective fields.

Across diverse fields, including education, sports, and cognitive science, the concept of bodily knowing emphasizes a heightened appreciation for the “body” in the holistic sense of human existence and life. Rather than viewing it as a merely object for measurement or reducing it to the signal transmission to the brain, bodily movement holds significance as an integral part of life. In this sense, as noted by Higuchi (2021, p.43), bodily knowing can be explored and practiced through the context of somaesthetics. Shusterman criticized the academic inclination in philosophy that tends to marginalize the body and nondiscursive somatic experience. He asserts that philosophy should become a discipline dedicated to the art of living, recognizing the individual body as a crucial aspect. Somaesthetics redefines the body—“as a locus of sensory-aesthetic appreciation (aisthesis) and creative self-fashioning” (Shusterman, 2000, p.267)—and critically examines its importance, various theories, and cultures of the body, and vigorously encompasses the dimension of “doing.” The act of physically engaging in something is a fundamental aspect of both bodily knowing and somaesthetics. This falls under the umbrella of pragmatism, which seeks to ameliorate the quality of life for individuals.

2. Skill-related and aesthetic-related bodily knowing

The first dimension we consider as bodily knowing is related to the ability to move or the skill that enables specific performance. For example, Saito (1999) called this kind of bodily knowing “*bildung*”² to distinguish it from the lower levels of physiological and reflexive reactions to maintain homeostasis such as fever and sweating. Instead, bodily knowing as *bildung* requires learning and practice, such as riding a bicycle, performances of athletes, playing the piano, and telling an old story. He stresses this dimension, which develops habits, skills, and forms and “imitates and nudges” (Saito, 1999, pp.33–34), as the bodily knowing of others' intercorporeal manner. Here, the first type of bodily knowing supports the ability that makes movement and skills possible, that is, the “skill-related bodily knowing.”

A further discussion of bodily knowing reveals that it is not simply skill-oriented but intertwined with aesthetics. Aesthetics, considered counter to reason, is commonly understood as unreliable and inborn, such as *kan*, intuitive sense in Japanese. However, aesthetics connotes the abilities indispensable for living and improving and changing oneself and one's environment.

² *Bildung* is a German concept that encompasses education, culture and self-cultivation. In Japan, it was embraced by intellectuals during the Taisho period (1912–1926) as a means of refining a culture of oneself. More recently, in the 1990s, it was revived as an educational concept, supporting the idea of holistic education as a means of self-cultivation.

For example, Kuwako (2001) defines aesthetics as "the ability to perceive and respond to changes in the environment and to create one's way of " and emphasizes that when humans make any aesthetic judgment, they cannot escape the spatiotemporal constraints of their bodies such as their location in the environment. Higuchi (2018, p.10) defines aesthetics as the abilities to "perceive the value and quality of things subjectively" and "bring about a sense of one's own position in the world and environment." In a sense, aesthetics is a kind of bodily knowing that we can call "aesthetic-related bodily knowing."

The function of human abilities related to performances, skills, and aesthetics as bodily knowing represents a significant turning point in understanding the structure of individual experience. It allows us to take a different approach to empirical research on human abilities, in addition to analyzing the mechanisms statistically, elucidating the neural pathways of the brain, or giving up on the approach of treating them as mysterious abilities that are difficult to explain. It also demands a renewed understanding of education, aesthetics, and other disciplines that have backed up our understanding of the structure of human experience. In other words, it has the possibility of overcoming the perspective that is a partial and formalized way of understanding (Higuchi, 2018, p.10).

There appears to be some agreement on the significance and importance of bodily knowing. However, it is still regarded as lacking scientific rigor because of its interest in individual cases and subjective experience perspective. Simultaneously, it is true that there are fields can only be understood by the bodily knowing research method. Can the study of human activities, such as education, anthropology, and psychology, be explained without closely exploring the senses of a single human being?

Despite these difficulties, there has been some research on bodily knowing. It is a concept used in different fields; thus, its methodology varies. For example, As an Olympic gymnast and coach, Kaneko has compiled a book on the process of acquiring bodily knowing, particularly the structure of one's experience in cultivating and instructing skills. A first-person methodology by Suwa Masaki delves into the depth of aesthetics that simple, everyday actions and activities can possess. *Tojisha kenkyu* (self-support research) on and by people with disabilities vividly describes how living itself has become a pioneering development process of bodily knowing.

Such methodologies illuminate hidden aspects in the blind spots of so-called scientific methodologies. These existing methodologies show us the possibility of constructing a methodology of bodily knowing related to ability and aesthetics. While following such methodologies, I will discuss the features that the methodology of bodily knowledge research should have.

3. From objective to subjective: Kaneko's sports movement study

Akitomo Kaneko has long been involved in sports and exercise science from the perspective of "bodily knowing" or "*waza*, technique or skill" His research background is based on his practical experiences. He was an elite gymnastics athlete and coach known as the "brain of Japanese gymnastics," having competed in the 1952 Helsinki Olympics as an athlete, the 1960 Rome Olympics as a team leader, and the 1964 Tokyo Olympics as a coach (Kaneko, 1971). With this background, the primary field of bodily knowing in which Kaneko is interested is the art of sports, especially artistic gymnastics. The starting point of his work is how each individual (athlete or student) learns, forms, and cultivates their movements and techniques and how these moves can be taught in a coaching relationship.

Kaneko found issues in the individual's deep structure of movement, which was excluded by the objectivist movement of scientific research, such as kinesiology, which was then (and still is) mainstream. The concern was over the profound disconnect between practice and theory and the mainstream belief that "the feeling of movement is an unreliable and subjective sensory impression cannot be an object to scientific movement analysis" (Kaneko, 2002, p.29). A good sports coach can perceive more in the movement of a practitioner than what can be analyzed and deduced from objectivist scientific research. The coach can identify with the students' movement and sense, judge whether it is good or bad, and even guide the practitioner to appropriate teaching methods. Objectivist kinesiology fails to capture what is taken for granted in the actual scene; subsequently, a gap emerged, which Kaneko's research attempted to fill.

Kaneko seeks an answer to this question from the science of movement of Kurt Meinel, a contemporaneous East German kinesiologist. Meinel's posthumous manuscript "*Asthetik der bewegung*," which Kaneko translated into Japanese under the title "*Ugoki no kanseigaku* (aesthetics of movement)," considers Baumgarten's *Aesthetica* as the core idea of his movement. Kaneko coincides with aesthetics as a human ability that lies at the foundation of Meinel's kinesiology. For example, to "directly perceive whether a movement is good or bad" and to "intuit an actual movement that is given through the senses" (Meinel, 1998, p.7).

Kaneko pioneered the concept of "bodily knowing" in Japan through his study. In the background of his methodology was not only his experience as a practitioner but also some ideas that view movement subjectively and holistically such as Meinel's kinesiology, Goethe's morphology, and the phenomenological anthropology of Husserl, Merleau-Ponty, Weizsäcker, and Bergson. For example, the "body" in Kaneko's thoughts, in accordance with Merleau-Ponty's thought, refers to a vital body, which is "a body that breathes in the here and now, *moving while sensing, sensing while moving*" (Kaneko, 2005a, p.2). In addition, the most fundamental concept in Kaneko's study, "doukan (hereafter, kinetic sensation)," which roughly means the sense of moving, is inspired by Husserl's notion, "*kinästheses*," a compound of *kinēsis* (movement) and *aistēsis* (sensation) (Kaneko, 2005a, p.24).

Kaneko's original terminology is prominent in his study. The term "kinetic sensation" goes beyond the meaning of movement merely occupying space to include emotion and time. For example, it includes the emotion of "the world of pathos, filled with despair in the interrelationship between teacher and student, coach and athlete" and the "premonitory orientation experience" (Kaneko, 2012, pp.1-2) that anticipates movement and the "kinetic melody" (Kaneko, 2005b, p.15), which can be understood as the gestalt of the time axis of movement. As these concepts show, the significance of Kaneko's study lies in his keen understanding that skill-related bodily knowing cannot stand alone but is intertwined with aesthetic-related bodily knowing. Moreover, his study tried structural analysis of this complex intertwining.

Based on his elaborate movement analysis, the structure is complexly subdivided, and each item is named distinctively. Kaneko first classifies bodily knowing into two categories: "emergent bodily knowing," which is the ability to acquire and cultivate movements, and "facilitated bodily knowing," which is the ability of the instructor to encourage the learner's emergent bodily knowing. The two main subcategories are "*kan*," intuitive sense, and "*kotsu*," knack, which are words often used daily. Kaneko conceptualizes them as abilities that lie behind bodily knowing and explains their principles.

Each ability is further categorized and structured. For example, *kotsu* includes the following four subcategories: inspirational ability (initiating the motivation for one's movement), value perception ability (judging whether a movement is good or bad), resonance ability (unifying

disparate movements as a single coherent movement), and schematize ability (allowing one to pick up meaningful, targeted movements from among various fragmental movements). Kaneko has invented a conceptual means and a language of analysis of bodily knowing, that is, an unknown object of inquiry that can only be captured in the lively movement. In order to overcome the gap between practice and scientific theory, Kaneko thoroughly confronted the individual's experience and, consequently, achieved complex and detailed structures for analysis. Ironically, to attain a better perspective on the wholeness of bodily knowing, he adopted a methodology that analyzed it in such detail that it could not be deconstructed any further.

How is this structure perceived in individual practice or instruction? The *Japan Society of Sport Movement and Behaviour* [JSSMB] published *Movement Science of Kan and Kotsu* (2020), an introductory book for sports and physical education instructors that follows Kaneko's study. It "provides an opportunity consciously understand and 'examine' the movement that has become 'so natural' and not explicitly recognized" (JSSMB, 2020, p.iii). The book is edited with a focus on individual case studies, such as gymnastics, as well as other sports, basic movements such as walking, running, and skipping, use of chopsticks, and generation of movement in infants and the visually impaired. Each case study contains, first, a section on Observation/Instruction Case Study, followed by the Related Principles and Essential Laws section. In the former section, the author attempts to identify the sensing and feelings of the person engaged in the exercise and tries to see the unseen parts of the movements, such as motives, internal dialogue, frustrations, and desires, which are difficult, even for the self, to perceive.

In the case study of a child playing on a slide titled "Establishment of a Bet," the observer notices that the child, who keeps repeatedly sliding down the slide, changes the way she slides each time, gradually making slight and subtle changes. In the Related Principles and Essential Laws section, the cultivation structure of the sliding technique can be traced based on Kaneko's study. While mobilizing the various kinetic sensation materials inscribed in the body, the child improvises with tension and anxiety in each slide. The observer analyzes the child's enjoyment of repetitive de-purposeful movement in play and sports as a "gamble" at each try, as "each time they slip, they expect the next slip with a slight expectation of what the new slip will feel like based on the feeling of the previous one" (JSSMB, 2020, p.9).

The methodology of Kaneko's study attempts to unravel the complex and ambiguous bodily knowing in a transcendentalist manner and trace back to the genesis of the morphing bodily knowing of this intertwined situational judgment. This methodology can be described as the foundationalism of bodily knowing. Kaneko attempted to construct an origin of kinetic sensation that pervades movements. He also tried to systematically structure "the capacity of kinetic sensation origin that pervades as the groundwater" (Kaneko, 2012, p.9), regardless of the differences in sports disciplines.

Kaneko quotes Merleau-Ponty, who said, "the thought of movement destroys movement," and understands the contradiction that the analysis of movement entails. Simultaneously, based on phenomenological anthropology, he attempted to search for the essence of bodily knowledge. Placing subjectivity at the center of scientific research does not mean it lacks objectivity and preciseness. Rather, this methodology made it possible to discover the core and *essence* of a movement, which can only be seen through that subjectivity. Individual movement practitioners and leaders now have a framework to refer to in order to be aware and refine their movements more precisely. Simultaneously, however, its essential structure has the contradictory quality of framing subjectivity in bodily knowing.

4. From essence to plasticity: Suwa's first-person methodology

Masaki Suwa has pushed forward a first-person methodology and its specific steps called embodied meta-cognitive verbalization. He has conducted extensive research on the methodology in the field of artificial intelligence and cognitive science in Japan. He has produced a significant amount of research in collaboration with others or while supervising students, which has broadened the scope of this methodology. Suwa (2022, p.212) refers to this research as “lifestyle research,” and it covers a diverse range of topics such as sports skills, clothing coordination, cooking, *sake* tasting, room layout, letter writing, dancing, city walking, spatial cognition, painting and music appreciation, animation production, and stage production.

As its name suggests, the first-person methodology is the restoration of subjectivity to mainstream scientific research methodology to emphasize objectivity. His idea is supported by Varela's first-person methodology and its central notion of autopoiesis, Gibson's affordance theory and ecological psychology, and neuroscience theories on perception and cognition by Damasio and others. However, prior to the theoretical background, Suwa himself had a strong feeling of concern with objectivity-oriented scientific research. He was sure of the dimensions that spill over from such research methods because “the scientific principle relies solely on objectivity and discards the vivid aspects of human life. Can it be said, then, we are discussing the ‘living’ aspects of human knowledge? Wouldn't that mean we are studying *only partial aspects* of knowledge in which the living aspect is not involved?” (Suwa, 2022, p.9).

Moreover, the subjectivity in first-person methodology has more plasticity than, for example, that in Kaneko's study. He describes the first-person perspective as seeing from where one's body stands, that is, seeing from the inside. Using the cognitive science concept of perception, Suwa refers to Damasio's study and states that perception through the neural circuits relies on neural patterns that have been formed and are constantly being transformed by experience and memory from the past and now. This explanation leads to two different meanings of plasticity in subjectivity: each person's perception of the same situation is different and, even within each individual, subjectivity perceives changes from moment to moment. Suwa sees various types of subjectivity and says, “as people live their lives, each moment, subjectivity guides, sometimes manipulates, generates perceptions and thoughts, and then people act on them” (2022, p.9). The highly plastic subjectivity is both the subject and object of the study. It does not attempt to deduce the mechanisms of bodily knowing, search for the only principles that operate universally, or approach the essence of bodily knowing. Instead, it seeks for each person to face their body and mind with sincerity to uncover the details of life.

The subjectivity in Suwa's study is a situation-dependent heuristic subject embedded in learning and enhancing specific bodily knowing. In this sense, bodily knowing is both the object and the means of research. This idea is supported by the “constructive method” (Suwa, 2016, p.204) in robotics. The methodology repeats the loop: to understand the operating principle of some phenomenon, a system that mimics it is artificially created and operated, discovering the variables by comparing it with the original phenomenon. Suwa proposes that this loop of analysis will well be applied to people who are learning and enhancing their bodily knowing. He calls this specific method the embodied meta-cognition verbalization.

This method assumes two systems of improving bodily knowing: the “body system” and the “language system.” The ambiguous events and experiences in the body system will be in the shed of consciousness in the language system to be recognized and conceptualized. Subsequently, this once-conceptualized experience will return to the ambiguous dimension of the body

system, and this loop will repeat. However, even though the same loop is apparently repeated, the subject of experience has changed into a subject that has been through the loop once. In this loop, each individual refines their bodily knowing, and through this "language system," one can grasp a part of the object of study, that is, bodily knowing. The purpose of verbalizing the sensations and experiences that arise in the body system is not to accurately capture but to "utilize the function of words to examine the subtle differences in the experiences, and to keep the experiences connected to one's own language" (Suwa, 2016, p.204).

The embodied meta-cognitive verbalization method itself is also elastic. The object of the research itself is the process by which individuals develop bodily knowing; consequently, instead of predetermining a research method, it adopts a reasonable method that can guide and encourage the depth of the individual's body knowing in developing it. Therefore, although there is a general framework and basic premise of embodied meta-cognitive verbalization, each method varies from one study to another. For example, the four specific examples of first-person research—coziness in a café, city walking, appreciation of "Honesty" by Billy Joel, and track-and-field practice—discussed in the book *Practice and Theory of First-person Research* use the following different research methods; diary, photo, sketches, extraction of pattern language or tags, music analysis, collocation analysis, drawing atmosphere, running trajectory analysis with LED device. In short, instead of matching individual experiences to research methods, methods are drawn to deepen experiences. In this case, the research method is a tool of observation and a discipline for cultivating oneself simultaneously.

How does this methodology ensure scientific rigor? The quantity and quality of primary data seem to be critical factors. Primary data are how one perceives oneself in developing targeted bodily knowing; in other words, experience on the "body system" is projected onto the "language system." Additionally, Suwa's first-person methodology requires enough time, ranging from several months to several years. The repetition of the same experience and body-language system loop over a long period will eventually guarantee the quantity and quality of the primary data, which leads to the rigor of the research.

In the accumulative recording of the primary data, it is not recommended to follow conventional research methods. For example, Suwa (2022, pp. 71-76) recommends "becoming a poet" when recording. Keeping real-life experiences in mind, the active use of imagination and reverie. He also emphasizes the importance of articulating oneself rather than expressing logically and recommends writing similar to a monologue reflecting oneself through words. The first-person methodology centers first and foremost on the subject's experience, and the specific method is a matter of how sincerely one approaches it and captures even the most subtle differences. Moreover, the time accumulation is increasing its accuracy.

5. Methodology as a living: Kumagaya's *Tojisha kenkyu*

Tojisha kenkyu is the research field in which the methodology of the research subject corresponds to the life of the object. It translates to "research that interested persons conduct on themselves" (Toko, 2019). It is both a movement and research for people with disabilities, in which they make themselves the object of research and simultaneously become the subjects. It first started as the peer support program at Bethel's House in Urakawa, Hokkaido, the facility to support the community activities of mentally disabled people. The prototype of *tojisha kenkyu* started from a peer community where people with disabilities disclosed their own hardships. The very first study was by Kawasaki (2002), with schizophrenia, in which he analyzed his "explosion" against his family members.

Among others, Shinichiro Kumagaya's series of *tojisha kenkyu* studies is a significant of this methodology. He has cerebral palsy. The rehabilitation he had received since he was a child was aimed at the normative body movement of healthy people, and he was forced to practice in a way that fitted this image of movement. This, he says, is based on the "medical model" that was widely accepted in Japan by the 1980s, which approached disability from the perspective of treatment. In contrast, the shift to the more liberal "social model," which holds that society is responsible for accepting the diversity of disability, has led to the beginning of research on people with disabilities in Japan.

Through the *tojisha kenkyu* methodology, Kumagaya could confront his own bodily movements. He starts with the most basic question, "Why does my body fall over so easily?" (Kumagaya, 2009, p. 21). Initially, medical and pathological explanations seem to answer this easily. Cerebral palsy is a symptom of brain damage that makes it impossible to carry out movements in accordance with the image of the targeted movement. However, this simple answer hides the world of his internal senses, emotions, sensuality, relationship with the outside world, and constant attempts to construct new ways of movement.

Kumagaya describes the process of his "falling" and "creation of new movement" in a cycle. This cycle and its steps are described and named in a unique terminology based on close observation of his internal senses, alongside medical terminology based on his expertise as a physician. The cycle and steps are as follows.

As the first step of the cycle, Kumagaya explains his internal sensation during movement based on theories of neuroscience and physiology. He says that his movements have an "excessive intra-body coordinative structure" accompanied by "a feeling that the muscles are not segmented in terms of their tensions and that when I try to move one part, other parts of the body move together" (Kumagaya, 2009, p.40). In his movement, he feels separated from the image of the movement of normal people in his mind. He also feels tense with others through the "relationship of gazing/being gazed at" (Kumagaya, 2009, p.69), which occasionally turns into a "violent relationship" (p.74). When the tension reaches its climax, the movement and the body "self-destruct" (Kumagaya, 2009, p.130). At that time, there is a sense of melancholy for the ideal world of "an untangling/embracing relationship" that has failed to be realized, as well as a strange erotic "sensuality of defeat" (Kumagaya, 2009, p.134) that is felt from the contrast between the healthy person's body and his own body and movements, and the sense of relaxation generated from the failure of the targeted movement gives. The creation of a new movement is derived from this moment of the open body feeling given by the "sensuality of defeat."

The process of describing and examining the stages of this cycle is significant. It is not a systematic analysis or explanation but rather an autobiographical approach. For example, the analysis of the phenomenon named "sensuality of defeat," which is felt when a movement is destructed, includes reflection on old memories. These include the frustration and shame felt when interacting with other kids in kindergarten and elementary school and the obsessive dieting and eating disorder experiences that arose from an unconscious obsession with wanting to be weak in middle school.

The methodology of Kumagaya's research overlaps with his living. The primary research question, "Why does my body fall over so easily?" has been a lifelong concern of his. His method of inquiry was an autobiographical account, that is, an analysis of movement and the composition of cycles through the observation of internal sensations based on the accumulation of the history of life. It has also been immediately adapted to his present living. Having grasped the process of his new movement, he, then, constructs and acquires a new movement, for example, as a doctor

performing blood draws on infants.

Tojisha kenkyu demonstrates the potential of the case-based methodology. The case study is not only a story about a single case of disability but also a research project that impacts medicine, welfare, and society. It has been established as a study "in which not only various components are related within the case but also internal and external components are in a certain relationship" (Kumagaya, 2009, p.103). This study reassures us that certain human-related objects can only be seen in this way. Furthermore, this is not only a research method but also an effective method of learning or education. This idea is based on the transformation of knowledge, in which "knowledge" is context-dependent and structured in terms of orientation and purpose.

6. Bodily knowing study as a living

By analyzing the above research methodologies on bodily knowing, we can identify the methodological principles for researching bodily knowing.

The first one is the focus on a person and one's life due to the agreement of the subject and object of research. In traditional scientific research, objectivity was maintained through a strict separation of the subject and object of the research, but this is impossible in studying bodily knowledge. Despite the appearance of an established relationship between observer and observed in Kaneko's work, the fundamental relationship between them is that of instructor and student. The study of bodily knowing is only possible with subjectivity in its perception and expression, and a first-person or second-person perspective must be assumed.

The study of bodily knowing must put each person first; then, specific research methods and techniques are developed according to the individuality of the case. This method differs from the traditional scientific research approach, which only applies to individual studies after they have been verified for their validity, reliability, and reproducibility using specific research methods. This also has to do with the population or sample size of the research. Unlike a large number of samples, which guarantees objectivity, the number of samples for the bodily knowing study is only one. The reliability of the research is assured by the degree of sincerity, detail, and depth with which the researcher deals with a single sample. In addition, rigor in the bodily knowing study is ensured by time instead of population. "Time" here has two aspects. The first is the accumulation of time as the trajectory of the subject's experience, and the second is the accumulation of the process of bringing the current experience to the conscious dimension. Suwa's first-person methodology requires at least six months of accumulation of this process. Kumagaya's research involved becoming aware of his own 30 more years of life as the research subject.

The specific method used is the verbalization and representation of experiences. It is a process of going back and forth between the internal structure of the individual's experience, and movement has two functions simultaneously. One is a research method, and the other one is the refinement and improvement of the individual's experience. This also overlaps with Dewey's concept of "experience." The two dimensions of experience start from "gross, macroscopic, crude subject-matters in primary experience" and arrive at the secondary experience of "refined, derived objects of reflection" (Dewey, 1981, p.15). The back and forth between primary and secondary experience is done first by making the rough sense of experience conscious, and a typical way of doing this is verbalization. Furthermore, having the secondary experience, returning to the rough primary experience, and this endless process is the growth of bodily knowing and the only means by which bodily knowing can be understood.

The study of bodily knowledge is made possible by deconstructing the common sense of methodology that has become entrenched in existing academia. Looking back on his childhood, Suwa says that a certain methodology style that has become solid and common sense, such as "make a hypothesis and test them using an objective method," is widely accepted even among children. A departure from this common sense is required in research on bodily knowing. Furthermore, the direction of the research is not to search for an absolute truth based on foundationalism but to improve the bodily knowing of the individual.

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