TARGET ARTICLE

Proliferation of Western Methodological Thought in Psychology in Japan: Ways of Objectification

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Published online: 27 June 2007 © Springer Science + Business Media, LLC 2007

Abstract When the field of psychology was first introduced into Japan, it was based on the proliferation of Western thought, particularly experimentation and Darwinian evolutionary theory. The current Japanese word for psychology, *shinrigaku*, was coined by scholar Amane Nishi in the early 1870s. It originally meant "mental philosophy," not psychology. Nishi also translated "subject" and "object" into Japanese. Before that, objectivity was not a concept in Japan. And although psychological experimentation must have prompted the subject/object division, experiments did not take root in Japanese psychology until Yujiro Motora, considered the founder of Japanese psychology, established the first psychological laboratory in 1903 at the University of Tokyo. In regards to Darwinian evolutionary theory, it is likely that scholars (e.g., biologists, sociologists, politicians) more readily accepted the theory when introduced into Japanese society in the 1870s because Japanese embrace a view that maintains diffuse boundaries between humans and animals. Finally, the roles of Japanese scholars who studied abroad during of the inception of psychology in Japan are discussed.

Keywords Experiment · Subject/object · Evolutionary theory · History of psychology in Japan

Around 100 years ago, Tomeri Tanimoto (1867–1946), a Japanese pedagogical scholar, presented a paper on the history of psychology in Japan at the Fourth International Congress of Psychology held in Paris in 1900. In the paper, he summarized how Japanese psychology developed in three phases. In the first phase, Joseph Haven and Francis Wayland introduced American mental philosophy; in the second phase the British works of Alexander Bain and Herbert Spencer were introduced; and in the third phase German experimental psychology was introduced

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(Tanimoto 1900). From Tanimoto's perspective, psychology developed in a straightforward way: American philosophy came first, followed by British empiricism with evolutionary thought and, eventually, the rise of the "new" experimental psychology.

In this paper I argue that an inevitable change in the ways of thinking was accompanied by Japanese accepting a new knowledge called psychology. To describe how the change occurred, I mainly focus on the introduction of experimental and evolutionary thought. Most of the new Western knowledge was imported in the second half of the nineteenth century, either through Japanese scholars who traveled abroad to study or by *oyatoi-gaikokujin*, hired foreigners invited to Japan by the government. The former introduced experiments into Japanese psychology, and the latter gave an impetus to accept evolutionary thought.

Importing Psychology: Nishi's Project for Psychology

As early as 1863, Wilhelm Wundt (1832–1920) advocated the following:

If the experiment has been the one thing that alone has enabled advances in the natural sciences, then we will also apply the experiment to the science of the nature of mind (*Seele*). Since no one could imagine that the mind was an object of natural science, no one attempted to introduce the experiment into psychology. However, now that we have made a plan to comprehend the phenomena of the mind purely as natural phenomena, which indeed it is, we will not do without the mighty aid of the experiment, unless it is being extorted, so that the mind can be understood in and of itself. The experimental method in psychology will find its full legitimacy through results that this method will help us to obtain (Wundt 1863, vol.1, p.23; translation by M. Takasuna).

While Wundt wrote this in Germany, there was no one in Japan that could be called a psychologist. It was around the time of the Meiji Restoration (1867–1868), when the Japanese government adopted a Westernized system of life, and psychology was a completely new concept for Japanese people. It was a time of shifting away from the Edo era (1603–1867) to the Meiji era (1868–1912), a virtual revolution where the Tokugawa shogunate was replaced with the emperor system. After the renunciation of the closed-door policy that lasted more than 200 years (until the middle of the nineteenth century), the new government began importing knowledge and techniques from United States and European countries. The drastic change of life for Japanese citizens was generally called civilization (*bunmei-kaika*), and people began wearing Western clothes and hats, using electric lamps, and reading newspapers.

But when did the Japanese first encounter psychology? The current Japanese word for psychology is *shinrigaku*, which was coined by Amane Nishi (1829–1897), one of the earliest Japanese scholars who introduced Western philosophy to Japan. From 1862 until 1865, Nishi went to the Netherlands and studied law, economics, and philosophy at Leiden University. After returning to Japan, he translated the book *Mental Philosophy* (1857) by Joseph Haven into Japanese; the first of the three parts

was published in 1875. According to the footnote on the first page, he entitled the Japanese version *Shinrigaku*, an abbreviation of *shinri jo no tetsugaku* (literally "mental philosophy") (Haven 1875).

Nishi coined many other Japanese words to make sense of Western knowledge, such as "reason," "understanding," "induction," and "reduction." Among them, four words were particularly important for understanding psychology: "subject" (*shukan*), "object" (*kyakkan*), "philosophy" (*tetsugaku*), and the term "psychology" itself, which is *shinrigaku* (the same Chinese characters denote "psychology" in China as well). Yet, Nishi stuck to *seirigaku*, literally meaning the learning of nature and principles, as the legitimate translation of psychology. However, as *seirigaku* was often used as a synonym for Neo-Confucianism in the 19th century, and the Japanese word for physiology was also pronounced *seirigaku*, the word was not adopted as the meaning of psychology to avoid confusion.

Ego (*jiga*) and self (*jiko*) existed before the Meiji Restoration (Suzuki 2005) but because these words were derived from Buddhism, the words' connotations were slightly different from the way Japanese psychologists use them in today's psychological discourse. Daisetz Suzuki (1870–1966), one of the modern international Zen Buddhists, pointed out that "division is a character of intellect" (Suzuki 1997), and there has been a dualism such as subject/object division in the Western point of view, in contrast to the Eastern philosophy whose characteristics consist in an undividedness. The highest state of mind in Buddhism is often expressed as being "in a spiritual state of selflessness" (*muga-no-kyochi*). There is, of course, a physical distinction of oneself from others, although the world one person views is not different from the world others see. These cultural differences have been studied in the context of cultural psychology (e.g., independent construal of self in the United States vs. an interdependent one in Japan. Kitayama and Miyamoto 2000; Markus and Kitayama 1991).

Nishi had to make a distinction between subject and object to import Western philosophy into Japanese society. Without this distinction, no one would be able to understand philosophy, much less psychology. For Japanese, psychology was to be an objectification of subjectivity. Japanese people needed to learn the distinction between subjectivity and objectivity, as there was only a subjective introspection in traditional Japanese thinking as exemplified in an old saying, "if we extinguish the mind itself, we can still feel fire as though it was cool."

Interlude: Subject/Object Distinction and the Disconnection of Psychology

One hundred years ago, Yujiro Motora (1858–1912) presented a paper at the Fifth International Congress of Psychology in Rome (Motora 1905) entitled, "An essay on Eastern philosophy: The idea of ego in Oriental philosophy." Before the Meiji Restoration, the existence of psychology in Japan was typically described in connection with Eastern thinking (Kido 1961; Watanabe 1940). In more recent papers written about the history of Japanese psychology, the effects of Buddhism and Confucianism on psychology were merely considered as background (Azuma and Imada 1994) or not mentioned at all (Oyama et al. 2001). The disconnection of

psychological knowledge between the Edo and Meiji eras highly contrasts with Chinese historiography that generally began with the description of Confucius (e.g., Jing 1994; Jing and Fu 2001).

I quite agree with Sato's views (2002: 33–35) that psychology in Japan before the Meiji era should be separated from what we now call "psychology" for two important reasons. First, in Japan there was no view of human nature independent of ethics and religion, as compared with Western philosophy whose "fairness" (human nature distinguishes perception and emotion from ethics and religion) surprised Nishi when he began his studies on the subject (Sato 2002). Second, psychology consists not merely of conceptual and empirical data but also of institutional and social practice. Ho Kamada (1753–1821) was supported by Watanabe (1940) as the very first empirical psychologist in Japan. He employed a modern usage of concepts, which were influenced by Dutch science, the only Western knowledge Japanese were allowed to learn during Japan's closed-door policy. However, because he was less of an influence on his pupils, I prefer to describe Kamada as a psychology-oriented philosopher but not a psychologist, as there was no continuity between Kamada's theory and the psychology imported in the Meiji era.

It should still be taken into consideration that Japanese culture tends to cloud the boundaries between subject and object. Something whole or without a boundary is often recognized as being in a better-integrated state (e.g., selflessness). As such, a psychology involved with the concept of "whole," as in *Ganzheit* psychology or Gestalt psychology, may have easily been preferred in Japan and, consequentially, it became tinged with a totalitarian nationalistic view during World War II, which seemed quite illogical to Western people (Takasuna and Sato 2004).

The subject/object distinction has not been a major theme in the history of Japanese psychology. We might have taken this distinction for granted, but then it would be difficult to understand Motora (1905), one of the founders of Japanese psychology, who addressed this issue in his paper at the Fifth International Congress of Psychology in Rome. In the paper, he argued the relationship between subjectivity and objectivity, which might have seemed nothing special for Western psychologists at that time. In fact, it was as early as 1888 that Motora discussed in his doctoral dissertation that "the unity of self-consciousness is purely subjective, and social unity is made possible only by means of this objective world" (Suzuki 2005: 121).

I maintain that the practice of experimentation in Japan would have helped Motora to understand the distinction between subject/object, assuming that Motora confronted the significance of the distinction after studying American psychology at Johns Hopkins University.

The Rise of Experimental Psychology

According to the above-mentioned development of Japanese psychology by Tanimoto (1900), the mental philosophy of Haven, Nishi, and others belonged to the first phase. The second phase to which Bain and Spencer corresponded was introduced by Masakazu Toyama (1848–1900). Although Nishi was actively inventing words for psychology, he was not appointed as a professor at a Japanese university. In this context, the first Japanese who brought psychology to a Japanese Dispringer

university was Toyama, who first studied for three years at the University of Michigan and graduated from the Department of Chemistry before returning to Japan in 1876. Toyama became a professor of the Department of Liberal Arts at the University of Tokyo (founded in 1877) where he taught English literature and psychology. He used the writings of Alexander Bain, Herbert Spencer, and William B. Carpenter as textbooks and as the basis of lectures on psychology. Among them, the works of Spencer especially influenced him. While the psychology Toyama learned in Michigan was older than the newer experimental psychology, he made a powerful contribution to Japanese psychology in two different ways: He helped bring experimental psychology methods to Japan, and he helped spread evolutionary theory at a Japanese academy (see "Effects of evolutionary theory" below).

Although Toyama did not conduct any psychological experiments himself, he understood the significance of experimentation. When the University of Tokyo was reorganized as Imperial University in 1886, Toyama became the president of the College of Liberal Arts. He then influenced the university to hire Yujiro Motora who had obtained a Ph.D. under G. Stanley Hall at Johns Hopkins University in 1888. Although his doctoral thesis, "Exchange considered as the principle of social life," was social science and not experimental work, Motora nevertheless published with Hall a paper about his experiments on dermal sensitivity in the first volume of the American Journal of Psychology (Hall and Motora 1887). To date, this is considered the first experimental paper to which a Japanese psychologist's name appeared in any language. After returning to Japan in 1888, Motora became a lecturer at Imperial University where he lectured on "psychophysics." Toyama, on the other hand, lectured on "psychology." Motora's lectures included a demonstration of psychological experiments. One of the four students who took Motora's very first lecture recalled that the topic was on Weber-Fechner's law (Ohse 1913). On one occasion in the laboratory, Motora let the students run an experiment but the classroom instruments used were so makeshift that three of the students could not successfully carry out the procedure.

In 1890, Motora was appointed to a professorship at Imperial University. During that time he worked on a design for a psychological laboratory but his concept was too grand and expensive to turn into reality. Finally, in 1903 a psychological laboratory (whose original name was "psychophysical laboratory") was established at the school. The laboratory's name was translated as *jikken shitsu*, literally "experiment room," a word that arose through an interesting evolution in itself. By the end of nineteenth century, experiments had been translated into various Japanese words but by the beginning of twentieth century, *jikken*, corresponding to "experiment," was used and is the standard word used today (Sato 2002: 340–341). In all, it was a big step forward to build a laboratory where psychological experiments could be conducted as a science.

Psychology was now no longer merely an armchair study of self but also a social practice that required instruments as well as subjects and experimenters. Despite these advances, no students in Japan became psychologists after medical training (as did Wilhelm Wundt and William James). Apparently, interest in pursuing a psychology education as an experimental science was largely relegated to Japanese scholars trained in the United States, such as Yujiro Motora and Matataro

Matsumoto (1865–1943). Matsumoto, a student of Motora, obtained his Ph.D. with an experimental dissertation, "Research on acoustic space," at Yale University in 1899. Upon his return to Japan, Matsumoto brought back some basic instruments that eventually furnished the psychological laboratory at Kyoto Imperial University, the second Japanese psychological laboratory (established in 1908).

Apparatuses and Instruments in Early Experiments

According to analyses of the registry found at Tokyo Imperial University's psychological laboratory, there were many apparatuses and instruments purchased during the laboratory's first two decades, including the following: kymographs, Marey's tambour, Ebbinghaus's aesthesiometer, Frey's hair aesthesiometer, Hipp's chronoscope, a control hammer, a sound hammer, Zwaardemaker's olfactometer, Maxwell's color mixer, Scripture's color sight tester, Scripture's pendulum chronoscope, a perimeter, Galton's bar, a Galvanometer, a pneumograph, Mosso's ergograph, Mosso's plethysmograph, Meumann's time sense apparatus, and Jacquet's chronograph (Osaka 1999; Oyama and Sato 1999). Although not all the psychological experiments required brass instruments and apparatuses, these implements held a special position in the beginnings of Japanese psychology. In 1910, the Department of Psychology at Tokyo Imperial University published the *Illustrated Picture Book of Instrumentation in Experimental Psychology*, which consisted of 37 pictures of psychological experiments (see Osaka 1999 for pictures). The book contained a preface as follows:

It should hardly be necessary to mention the importance of the knowledge on experiments in psychology today. As experimental pedagogy, recently advocated in education, is based on experimental psychology, few fields such as aesthetics and phonetics use the method of experimental psychology. The present book contains the photos of almost all psychological apparatuses equipped in the laboratory as well as the methodology of psychological experimentation at the back of the volume, which is described to be a reference for researchers wanting to do the experiment and to illustrate psychological experiments for lay people (December 1910; cited from Osaka 1999, p. 370; translation by M. Takasuna).

These psychological experiments were supposed to provide anyone with scientific methodology. Most of the experiments explained in the book were standard for that time, and out of the total 37 experiments, about 40% involved perception; about 30% involved attention, affection, and fatigue; and the rest involved readings and writings, memory, and motor tasks (Osaka 1999). The apparatuses used most frequently were those that measured and recorded time, such as Hipp's chronoscope and kymographs, which suggested a zeitgeist of "chronological age" (Osaka 1999), a period when people claimed as precise measurements as possible. As pointed out, "whenever an experimental division of labor was adopted, it would take the form of a division between the roles of experimental manipulator and experimental subject or data source" (Danziger 1990, p. 31). This would awaken an

interest to investigate the social structure of psychological experimentation in early Japanese psychological research.

As far as illustration analysis, most of the researchers adopted the Leipzig model of investigative practice-exchanging the roles of experimenter and subject (Danziger 1990). This experimental model was expected to facilitate both the subjective and objective observations of researchers. However, a few unique experiments were also included in the book, especially experiments involving fluid and gas conduction with a rubber tube (Motora 1903) and experiments measuring children's attention using an apparatus Motora invented (Motora 1911). These experiments, eventually published in foreign journals, indicated that they were conducted in the laboratory relatively recently, which meant that they finally ceased using the Leipzig model.

I found other experimental instruments used to collect and analyze data, namely, logic, inferential statistics, and various kinds of mathematics (Sturm and Ash 2005). These should be analyzed in the future.

Effects of Evolutionary Theory

Besides experimentation, another factor that affected the establishment of modern psychology was the influence of evolutionary theory. Darwin published the *Origin of Species* in 1859 (Darwin 1859) but the introduction of evolutionary theory in Japan was not accomplished until American zoologist Edward S. Morse (1838–1925) arrived in 1877. At the time, Morse was studying brachiopods and wanted to visit Japan to collect samples of the species.

Professor Toyama had other ideas for Morse. Toyama had attended Morse's lecture on evolutionary theory while studying at University of Michigan and was so inspired by his talk that when Morse arrived in Tokyo, he promptly offered him a zoology professorship at the University of Tokyo. Morse accepted. Although at that time there existed a few articles in various Japanese books and journals that briefly introduced Darwinian evolutionary theory, most Japanese did not yet recognize the theory. In addition, there were many Christian missionaries throughout Japan who criticized the theory. Chiyomatsu Ishikawa (1861–1935), a Japanese zoologist who graduated from the Department of Science at University of Tokyo in 1882 recalled that one missionary, McCartee, presented a lecture on human physiology in early 1877 and, at the end of the lecture, expressed his disapproval of evolutionary theory (Isono 1988).

Morse gave his first lecture on evolutionary theory to biology students in September 1877. His subsequent series of lectures were delivered three times to the entire student body, including professors and their spouses. The presentations were met with so much applause, he was overwhelmed with emotion. Morse was shocked that the theory was so easily accepted in Japan. He dictated his lectures to Japanese students and published them in Japanese ("Animal evolutionary theory," 1883, translated by Ishikawa under Morse's general supervision).

Despite Morse's astonishment, it is not surprising that evolutionary theory was readily accepted when considering Japanese culture. First of all, there were (and still are) many wild monkeys (Japanese macaques) that inhabit Japan. The art of getting monkeys to mime human behavior is called *saru-mawashi* and has been going on as early as the thirteenth century. Thus, the bond between humans and primates in Japan has historically been stronger than in any Western countries. Moreover, the Japanese were accustomed to the Buddhist belief of transmigration of the soul, the theory that an animal can change into another animal. This was a sharp contrast to the Christian belief that viewed humans as something special. Therefore, Japanese culture allowed the Japanese to accept the concept that there is a relatively loose boundary between humans and animals. The very first experiment of comparative psychology was conducted in 1908 by one of Motora's student's, Koreshige Masuda (1883–1933), using various birds (Takasuna 2005, for early researchers in animal psychology in Japan).

After Morse's work, other books on evolutionary theory were published. Huxley's lecture on Origin of Species was partially translated by educator Shuji Izawa (1851-1917) and published in 1879 (Isono 1988). One of the early problems in introducing psychology and evolutionary theory was the outdated Japanese educational system. The newest educational system was first modeled after the French in 1872 and then revised by the American system in 1879. To update the system, many scholars and bureaucrats were sent to the United States and Europe to absorb new knowledge through their experiences. Izawa was sent to the United States to investigate American normal schools (today known as teacher's colleges) with Hideo Takamine (1854-1910) and Sensaburo Kouzu (1852-1897). They all became teachers or principals of normal schools when they returned to Japan. Interestingly, all three studied biology in the U.S. and were involved with introducing or translating evolutionary theory. In 1879, Izawa, who became principal of Tokyo Higher Normal School, with Takamine as vice principal, made a major change to the curriculum by requiring students to receive 5 h of psychology lectures per week, which reflected an emphasis on psychology for modern education. These new leaders in education not only brought home a modern curriculum for teachers but also introduced evolutionary theory.

Conclusion

According to Sato (2003), at least six routes ultimately led to the acceptance of modern psychology in Japan. The first route was the import of psychology through Nishi. This resulted in the coining of words such as "psychology," "subject," and "object." Another route was accompanied by Christian missionaries. A few of these routes facilitated the import of psychology as a new concept. For example, Motora became interested in psychology from knowledge gained by the teachings of American missionaries. The third route was derived from Toyama who began lecturing on psychology at the University of Tokyo in 1877. The fourth was related to teacher education: Izawa and Takamine introduced psychology into the curriculum at Tokyo Higher Normal School in 1879. The philosophers studying abroad, such as Tetsujiro Inoue (1855–1944), belonged to the fifth route. The sixth and the most important route was Motora who introduced experimental psychology to Japan and trained many students in his psychology laboratory.

The new concept of Western psychology was imported through various ways and merged well with Japanese culture. In contrast to Danziger's experience of an alternative non-Western psychology that existed in Indonesia (Danziger 1997, pp. 1–3), there was no such specific alternative in Japan. My analyses of the introductions of experimental and evolutionary theory rely on the observation that Japanese culture has some unfixed boundaries, which correlates well to the scientific methods and premises required by both. Through further analyses of historical data, I am now convinced that the proliferation of psychology in Japan has different characteristics to those found in the area of cultural psychology.

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