# Animism, *Rinri*, Modernization; the Base of Japanese Robotics

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*Abstract*— **Japan is accelerating to create a novel industry called Robot-Technology. It is supported by a social affirmativeness for the new technology. This paper explains how such a social acceptance is made, with the explanation of Japanese Animism, "*Rinri* (in English, the Ethics)", and its modernization. These are conditioning Japanese Robotics. In Japan, the traditional rituals are remained strongly in the ordinary life despite of its advanced technology. Paradoxically, it contributes to advance Japanese Robotics.**

## I. INTRODUCTION

Having the highest percentage of industrial robots in the world, "robotto (in English, robot)" is now very popular word in Japanese mass media. It is also the prominent field for national investment, and the Japanese government strategically aims to promote robot industry to a novel technological integration. The Ministry of Economy, Trade and Industry (METI) of Japan released a report, "The Strategy for Creating New Industries", released in May 2004, and it positions the robotics as one of the seven most critical industrial fields, and declares to provide them with focused supports [1]. The METI has started the project of "Next-Generation Robot" which cooperates with human begins and supports for the daily life. The future society with the "Next-generation Robot" is not fantasy story written by a science fiction writer. The project is to create a new market called the "Robot-Technology (RT)" promoted by enforcing the relationship of the industrial and the academic fields. It is not the study of robots or mechanics. The RT sets robots as the key that integrates the know-how related to robot R&D, economy, industry, and academy, namely, as a transdisciplinary technology. With the advance of RT, "The Next-generation Robot" project brings the robotization in the domestic environment in a positive light.

Along with the advance of RT, the actual application of social robots is taking a step forward by economic demand. It is also getting popular to talk about the future society with social robot. I personally got involved with one of governmental RT projects, which gives me insight on an interesting difference between the Western robotics researchers and Japanese ones. The Japanese Robot R&D, in my opinion, focus on enhancing the mechanical functionality with having little ethical discussion on the usage of robots, while in the West, the robotists often discuss the social and ethical problems for applying robots to human societies. The

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interdisciplinarity in the discussion is also striking, having very colorful backgrounds from the fields of Engineering to religions. Such discussions have raised a new kind of academic study, Roboethics, as we see it today. In Japan, instead, the focus goes on the political and legal ordinance for the safe use of robots, and I see that Japanese robotists are prone of providing a solution with the enhancement of mechanical capability and functional efficiency.

In my understanding, this kind of tendency causes from an intangible and optimistic expectation, or affirmative belief that Japanese society withholds, that robots could keep ethical behaviors to be safe, harmonious, useful, sometimes even cute and cartoon-like tools. It is very this social acceptance that motivates the advance of RT, and helps the Japanese government to finance the long-term "the Next-generation Robot" project. In this paper, I claim that Japanese RT is conditioned from animism, "*Rinri* (in English, the Ethics)", and the Japanese modernization process.

Before starting my argument, I should note my awareness that Japan cannot be considered a uniform, single traditional entity. At the same way, although I use the terms "the West" without giving firm definitions, I do not characterize the West as a unicultural entity. To the international readers of this paper, I would like to clarify that I use the term "the West" in order to set it as "a mirror" to reflect "Japan".

## II. THE EXISTENCE OF SPRIT – ANIMISM OF JAPAN –

In Japan, there is a traditional belief of the existence of spiritual life in objects or natural phenomena called *mi* (the god) and *tama* (the spirit). From the prehistoric era, the belief in the existence of sprit has been associated with Japanese mythological traditions related to *Shinto*. The sun, the moon, mountains and trees each have their own spirits, or gods. Each god is given a name, has characteristics, and is believed to have control over natural and human phenomena. This thought has continued to be believed and influences the Japanese relationship with nature and spiritual existence. This belief later expanded to include artificial objects, so that spirits are thought to exist in all the articles and utensils of daily use, and it is believed that these sprits of daily-use tools are in harmony with human beings. Even after the high-automatization and systematization of society, Japanese people practice the belief of the existence of sprits in their everyday lives, in an unvocal manner.

Dr. Mitsukuni Yoshida, a historian of science and technology, explains in his book "The Culture of ANIMA –Supernature in Japanese Life–" how Japanese people begun

to understand anima within artificial objects not only in natural surroundings [2]. First, artificial tools made out of natural materials are believed to possess anima. However, he states "these anima come alive from the first time as tools or implements that function along with man. And since they are companions of man in life and work, they are often given names. Objects can have names just as humans do. [2]" In fact, many tools used in pre-modern Japan were often affixed the name of the owner and the date of first use, which was the date that the tool took its own spiritual existence with the identification of its owner.

Such a tradition of date and name keeping on tools is not so common as before, especially with the use of industrial robots. However, this belief is preserved in the manner of treating objects, even if they are made not of natural materials but of mechanical parts. Even nowadays, when long-used tools become broken, instead of being thrown away as garbage, they are taken to a temple or shrine to be burned divinely. In the New Year's Day, some people take their automobile (or the spirit of the car) to the shrine to pray for no car accidents. In 2005 December, a Japanese robot company, Tmsuk, took their humanoid robot product, KIYOMORI, developed in



Fig. 1. A humanoid robot, KIYOMORI, of Tmsuk Co., Ltd. and Shrine Maiden of Munakata Taisha Shinto Shrine, taken on December 12, 2005 [3].

collaboration with the Takanishi Laboratory of Waseda University, to Munakata Taisha Shrine to pray for the robot safety and for robot industry success.

This immanence in Japan appears with reference to things of everyday life, to ideas, and common attitudes, and it is thus hardly spoken of. Eisenstadt demonstrates this point clearly with his theory of Ontological Reality [4]. Japanese animism gives a sense of the world appearing as something contingent, but not as static matter that is possible to comprehend transcendentally, which is a conspicuous feature of Western thought. The immanent perception of the existence of spiritual life is not mere individual subjectivity. It brings the manner of how to relate yourself to the world.

The belief of spiritual life cannot be mixed with the idea of the subjectivity of the robot as explored in Western Science Fiction s. As mentioned-above, the spirit of an object in Japan

is identified with its owner, so theoretically a robot closely attached to its owner and serving in ordinary life for many years could be likely regarded as to possess its own spirit harmonizing with its owner. This kind of belief is very the base of the Japanese Ethics, *Rinri*

### III.  "*RINRI*", THE JAPANESE ETHICS

The word for "Ethics" in Japanese is "*Rinri*". In Japan, *Rinri* is the study of the community, or of the way of achieving harmony in human relationships, while in the West, as far as I understand, ethics has a more subjective and individualistic basis. These concepts differ from each other, and this can lead to misunderstandings while discussing the ethics of using a robot at international conferences.

The term *Rinri* was strongly introduced during the *Edo* Period as its original meaning in Confucianism. *Rinri* is made up of two Chinese characters, *Rin* and *Ri*. *Rin* indicates a mass of people that keeps order (not chaotic), and *Ri* means a reasonable method or the way (the course) to do. Thus, literally, *Rin-ri* means "the reasonable way (or course) to form the order and to maintain harmonized human relationships".

Then, to comprehend "the reasonable way" is the key to approach Japanese Ethics. Because of the rapid modernization process, the present concept of Japanese ethics withholds somewhat *Samurai* code. In the *Edo* period of Japan from the sixteenth to the eighteenth centuries, the *Tokugawa* Shogunate utilized the thoughts of Confucianism and *Bushi-do* (the way of the Samurai warrior) in order to ensure its regime. *Bushi-do* forms the basis of the *Samurai* tradition of absolute loyalty and willingness to die for one's lord, and came to be overlaid with Confucian ethics. The composite of indigenous and Confucianized *Bushi-do* regulated much of the ethical behavior and intellectual inquiry of the *Samurai* class. The emphasis on action, purity of motivation, loyal service, and political and intellectual leadership inherent in *Bushi-do* helps the *Samurai* class to add dynamism to the *Meiji* Restoration, and ultimately played an influential role in the modernization of Japan, remained the *Bushi* culture in many aspects..

In the beginning of Japanese modernization, the Japanese scholars of that time had to struggle to comprehend the meaning of Western Ethics. The dictionary of Japanese translation for philosophy and thoughts shows that the first translation of the English term "Ethics" was done by a philosopher and politician, Amane Nishi (1829-1897) in 1870, Meikyou-gaku; which meant "the study to reveal the essence of existence of a person in order to learn his place/position inside relationships". However, in 1979, "Ethics" was translated as Doutoku-gaku, meaning "the study of morality". In 1881, the already existing concept of *Rinri* was applied to the translation of "Ethics" and ever since it has been used. In my opinion, *Rinri* holds two concepts; the Japanese sense and the translation of "the Ethics."

People are expected to know where they belong in a place/position/status in relationships, in each other. Social virtue is perceived in acts based on the understanding of one's

essence (or nature) of self. One example is the social applause for the death to show one's loyalty, which closely bond *Samurai* to their lords. Still now, there is an unvocal expectation that a person will/should act according to his social position, and breaking positional limits will lead to social condemnation and to be reflected in a sense of shame. Under the harmonization of relationships, there lay unvocal expectations for everyone to maintain one's place /position /status in the relationship and the society.

An example of *Rinri* can be observed in the concept of social responsibility. In Japan, responsibility in the sense of moral accountability for one's action already existed in the classical period, but the individual was inseparable from status (or social role) in the community. Each individual had a responsibility toward the community, and the universe that comprehends communities. Thus in Japan, social virtue lay in carrying out this responsibility relates to one's social role.

Another practical example of *Rinri* was the dramatic accident of Mr. Koda, a Japanese student killed in Iraq in 2005 October. He traveled in Iraq despite the fact that Japanese government had advised the evacuation from Iraq to all its citizens. This led to a social condemnation for him and his family, in spite of the dramatic events that he was going through. Once taken hostage, Mr. Koda pleaded for his life in Japanese, and apologized to the Japanese government and society for the trouble he was causing. When he was found dead, his parents first apologized publicly for disturbing the social peace. Rather than showing anger at the murders or at the government for failing in setting their son free, his parents concerned about social responsibility for their son's breaking the social harmony.

This kind of ethics, the superiority of social harmonization over the individual subjectivity is peculiar to Japanese Ethics. Dr. Tetsuro Watsuji (1989-1960), a prominent researcher of Japanese philosophy and ethics, made a study of ethics that has been regarded as the definitive study of Japanese ethics for half a century [5]. For him, the study of *Rinri* (Japanese Ethics) is the study of *Ningen*, in English "human beings or person", which make *Rinri* distinctive and original about ethics in Japan. *Ningen* is composed of two characters, the first, *Nin*, meaning "human being" or "person", and the second, *Gen*, meaning "space" or "between". Thus, *Ningen* as a human being literally has the connotation of "the 'betweenness' of human beings". What Watsuji demonstrates with his idea of *Rinri* is a kind of system of human relationship; the personal agents of the group own the respect each other, and at the same time, each individuals embrace determined social status. Based on the etymological analysis, Watsuji finds out the Japanese idea of ethics including dual definition of individual and society, for *Ningen* composes the betweenness of individuals and society.

Japanese Ethics, *Rinri*, can be said, the study of social role for individuals, and the study of *Ningen* proposed by Watsuji. And now, we are foreseeing another sort of social agent; robots. *Rinri* does a great role to set robots in the ethical system in Japan, due to the animism and *Rinri*. An artificial object is regarded to possess an identity with its owner. As far as the owner treats the robot (or the spirit of robot) with proper manner, the robot should have the respect to the owner, act under the harmonization, and have the ethical behavior. Thus spatially, the togetherness of the existences of the man (the owner) and the robot (the tool) constructs the limit of their betweenness. Robots are able to have their identifications only while their owners are using them.

I see that Japan is in the middle of the process to define the practical guidelines for social robots. I assume that the political and legal ordinance for the safe use of robots will begin or end at scientific and practical theories, but not the animistic point of view. However, I strongly believe that, in Japan, autonomous or intelligent robots are easily accepted socially because of the belief in its spirit. It gives us less difficulty to prepare for the practical guidelines for the development of functions of robots.

## IV. MODENIZATION OF JAPAN

In Japan, the acceptance of the Western science and technology was occurred within a half century, dislike the Western countries that experienced its own-historical developing process. It was the complex of modernization, westernization, and civilization, simultaneously and revolutionarily provided Japan with the whole new social structure interwoven with the acquisition of science and technology with the understanding of them as "enlightenment". And it probably has a great effect on the general characteristics of Japan to be resistible and affinitive to the new technology and robots.

The western technology has hardly been positioned as an enemy like the Luddites of England. To the most, machines have brought only good in Japan. In Japanese history, the first encounter with European civilization was 1543, three Portuguese who brought a gun into Japan. However, because of the national isolation policy taken in 1639 by *Tokugawa* shogunate, Japan had to wait for its "civilization" until the middle of 19th century. For almost two centuries of *Tokugawa* regime, the contact with the outside world was firmly sealed off, except a tiny amount of trade with the Dutch and the Chinese in an island in Nagasaki. In 1853, American Commodore Perry landed on Japan, demanding trading rights at the point of gun. In those times, Japan was a nation that highly attained the political centralization and legitimization, but entirely missed the industrial revolution of the West, resulting to be devoid of civilized technologies and sciences. In the end of *Tokugawa* regime, many leaders had aware of the threat of the West by seeing the lost of China in the Opium War in 1839. The *Tokugawa* regime became desperate to arm itself in hurry, in order to avoid becoming "a second China". Thus, the achievement of the Western science and technology became on the critical and urgent needs.

The appearance of Commodore Perry not only brought the end of isolation but also, indirectly, resulted in the downfall of

*Tokugawa* regime in 1868 by the *Meiji* Restoration. It pushed Japan into the modern world and shaped the major contours of the patterns of modernity developed in Japan. On the transition from *Tokugawa* to *Meiji*, there were two political slogans; *bunmei-kaika* (enlightenment of civilization, namely, to Japan, westernization), and *fukoku-kyohei* (rich nation, strong military). Those were to orient the *Meiji* state towards economic development and military strength, which would ensure Japan to find its place in the new international order. The technology gap was serious, which was a national humiliation to Japan, becoming a huge motivation for its modernization. *Fukoku-kyohei* especially military might, policy succeeded in defending itself against colonialist powers of the West, but it led to the military's gain of control in Japan towards World War II.

By the *bunmei-kaika* policy, many Western ideas were introduced into Japan. Several had never been known in Japan, because of the closing nation policy taken by *Tokugawa* Shogunate for two hundred years. Many novel terms were invented to define the Western concepts, like *Shakai* (society), *Tetsugaku*, (philosophy), *Risei* (the reason), *Kagaku* (science), and so on. In the other cases, the indigenous terms had to add the new Western concept, and changed it original meaning, like *Gijyutsu* (technology), *Shizen* (nature), and *Rinri* (ethics).

Thus in Japan, the remarkable speed of modernization was brought with the introduction of the Western sciences, technology, and social thoughts. Schodt, an author of the book "Inside the Robot Kingdom -Japan, Mechatronics, and the Coming Robotopia-", says about the astonishment of the West that;

in 1905, only fifty-two years after Perry arrived in Japan, Japanese soldiers armed with the latest weaponry and Japanese sailors manning modern battleships trounced Imperial Russia in a modern war. The world, especially the European world, was stunned. Overnight it seemed a tiny feudal Asian land had become an industrialized nation, and had smashed the technological hegemony of the white colonialist powers. [6]

Such a peculiar history of Japanese modernization and its unique ethical notion got attention due to the successful growth of the Japanese economy. The character of the Japanese, like "strong group commitment, loyalty, harmony, and consensus" is understood as the key of its successful modernization. It was emphasized by being contrasted with Western individualistic attitude. The Japanese pursuit of advanced technology including robots has been always related with the growth of the national economy.

On the other perspective, in the nineteenth century, Japan eagerly introduced the Western technology in order to modernize the nation with having little time for the ethical discussion of it. Not only in *Meiji* period but the utilization of industrial robots in the postwar period has been outstanding, giving rise to Japan being called "Robot Kingdom". Japan succeeded in obtaining a competitive position in the international economy, and the phrase "Japanese technology" came to be used to mean accurate, functional, and sophisticated mechanics or technological products. The Japanese pursuit of advanced technology including robots has been always related to the growth of the national economy, which has been narrated in both the Japan and the West as a uniqueness of Japan.

## V. CONCLUSION

The abrupt modernization of Japan caused in the success of technological development and the change of social system, but the period of approximately fifty years was not enough to make such a dynamic change in the way of thinking and living of people. These are intangible but have been cultivating the social interest on robots. Such characteristics of Japanese society drive Japanese Robotics advanced. In the other individual case, in a Robotics Laboratory that I am involved, I observe that the idea of *Rinri* functions without any regulation or order so as to sustain the strong team commitment, loyalty, harmony, and consensus, contributing to develop many great robots.

Unlike the image of robots of Capek or Asimov, the typical Japan imagination of robot contains an affinitive rapport between robots and humans. This positive acceptance of robots in the present Japan is founded on Japanese Animism, the idea of *Rinri*, and its rapid modernization.

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