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What Is the Boundary Between Human and Nonhuman-A Discussion Based on Techno-Animistic Perspective

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Abstract. This dissertation explores how human perceptions of robots are shaped by culturally embedded imaginaries, ontological frameworks, and animistic thinking, with a particular focus on Japanese society. Drawing from an encounter with Sony's AIBO robotic dog at the Barbican Centre in 2019, the study begins with a phenomenological reflection on the uncanny emotional connection evoked by the machine's dog-like behaviours. This initial experience prompts a deeper inquiry into the ways humans assign symbolic and affective meaning to robotic forms, beyond their technical functions.The research adopts a cross-cultural lens, comparing Western and Japanese conceptions of robots as revealed through dictionary definitions, science fiction narratives, and robotic design philosophies. In the West, robots are often framed as mechanistic tools—external to and subordinate to humans—rooted in a Cartesian dualism that separates humans from machines. In contrast, Japanese narratives frequently reflect a relational ontology informed by Shinto-Buddhist cosmology, where robots may be regarded as social cohabitants or even spiritual beings.

Keywords: Techno-Animism, Japanese Cosmology, Science and Technology Studies

1. Introduction

In 2019, when people were still treating robots purely as underdeveloped tools with a lot of instability, the AIBO robot exhibited in London successfully gave people a completely different view of robots. Approaching the stage where it was displayed, the machine sensed the presence of the spectators and took a few cautious steps toward the crowd, tilting its head upward as if studying the viewers' face. Though I understood this was merely its facial-recognition system reacting to nearby human stimuli—a feature outlined in its technical specs, including its copolymer shell, dual processors, array of sensors, and roughly 72-hour battery life— the uncanny sense of connection arose. Its gaze felt deliberate, almost alive, accompanied by subtle tail wags and rhythmic body tremors reminiscent of a living pet. Curious, as the viewers shifted their position slightly, and the robot's eyes tracked their movement, emitting a low, breath-like whirr akin to a real dog's sigh. In that moment, AIBO transcended its programmed mechanics; it seemed to engage, adapt, and evolve, blurring the line between coded machinery and sentient being.

The witnessed phenomena upon the mechanical creation, AIBO, aligned with the proposition offered by Victor Turner [1], that our cognitive process is multi-referential and built on the basis of stored memory in front of the seen objects. The discursive set of meanings surrounding the

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mechanical creation is bundled up and attached to the dog appearance. The terms such as 'machine dog', 'robotic dog', as shouted by the crowd under the AIBO stage all point to the given point of reference for its zoomorphic feature, or in plain word, for its resemblance with an actual dog. An inquiry in uncovering the formation of the human imagery of mechanical creation and the induced behavioural responses thus arise, which form the embedding section of this EPQ research.

The emotional contact with AIBO mentioned earlier is in line with the view of Science and Technology Research (STS) scholars that human perception of robots is a binary structure - robots are identified first as a technological creation, and second as an animistic entity holding its own set of symbolic meanings sourced from the point of reference we have encountered in real life [2,3]. It appears as if there is already a loaded set of answers to that AIBO's behaviours in my mind. The images of robots, as Robertson argues , are put up against the existing referential systems made up of particular cultural meanings specific to different peoples [2]. This suggests that our understanding of robots is not merely based on their mechanical features but is deeply intertwined with the cultural frameworks we possess. What people refer to in terms of robots are more of the loaded images that are sorted against usual narratives informed by particular cultures. Humans' perception of robots, therefore, is a process of making connections between the robots' mechanical appearances and the condensed sets of meanings people hold for reference [4].

Following the stance of thought initiated by Victor Turner, this paper moves the scope to the robotic design cases in Japan where the first legislative move was made by, as early as, the year of 2007 in its Innovation 25 clauses in emphasising on the national identity of technological creations [3]. According to the arguments raised in existing literatures, contemporary Japanese robot design is greatly impacted by imaginary depictions in popular media. As noted by Sone [4], many Japanese roboticists behind significant projects have drawn inspiration from characters in anime and manga. For instance, both SONY's Qiro and Honda's ASIMO have openly stated that they are inspired by Atomu (Astro Boy), the protagonist of the manga/anime series Tetsuwan Atomu [5]. The heroic imagery of these symbolic manga/anime characters has shaped the way Japanese people relate to robots. This concept of societal inertia is what Tylor refers to as the "modern social imaginary," which provides a shared framework for individuals to form their perceptions of the world based on common practices [6]. When applied to social robots, the social imaginary pertains to the widely recognized representations that either reflect or redefine the concept of robots. Among these representations, Atomu stands out as the most influential. Created by Osamu Tezuka, this manga/anime character has impacted generations of Japanese teenagers, to the point where the term "robot" is nearly synonymous with Astro Boy for them. This virtual character, a humanoid robot created to replace a lost son, has become a cornerstone of the Japanese ideal of robots—machines that closely resemble humans in both appearance and traits, encompassing both virtues and flaws.

2. Definitions of 'robot'

Robot, in Oxford English Dictionary (OED), is defined as falling under one of the three working meanings: "a machine with resemblance to human or certain animals and able to replicate certain the concerned movements"; "a machine able to carry out automatically a series of movement especially for the ones programmable"; and "[not necessarily limited to ones in material presence], a program that can perform a genre of tasks without continuous human intervention". Robot, the word, is marked as originating from the science fiction novel, R.U.R: Rossum's Universal Robots by Czech writer Karel Čapek. Robot is transformed from originally a Czech word – robota – referring to the tenants under slavish labour. The herein abovementioned OED meanings of robot encapsulate the setting of robots' role in R.U.R following the flow of plot.

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In R.U.R's futuristic society setting, humanoid robots are everywhere assisting the lives of humans. They stick to the order of human and cater various demands. As the turn of plot, the robots are altered by their designer to have their own emotional reasoning which gradually leads to their bargaining of labour rights. The discontent of robots eventually escalates into worldwide uprising of robots against human regime and ended up with robots demolishing the whole civilisation of human – The entire human population is wiped out except for the one middleaged artisan proposing new schemes for robots to mechanically 'reproduce'.

The definition of robots in OED, anchored by the setting of robots in R.U.R, points to the inclination of western narrative treating robot more as appliances and stressing that robots are 'machines' subjected to the control of humans. The attitude of positioning robots as opposite to the existence of humans, similar to the R.U.R case, is prominent among the western narrative. The level of significance for the treatment of taking robots as the race that may one day replace human is reflected by the prevalence of 'humans vs. robots' narrative within literary, theatrical, and cinematic works from western world. It is not to say that Japanese cases for human-robot relation have all adopted otherwise settings, as different scholars have shown there are a few works across Japanese media holding robots as the source of plight for human race [7] – but that Japanese examples do reflect an inversion of treatment on human-robot relation.

Japanese dictionary, Kojien, defines robots, not as programmable 'machines', but as artificial 'persons'. It is specified that the usage of this word can extend to human individuals that are controlled by others. Interestingly, Kojien cites the play of R.U.R first shown in Tokyo theatres by 1924 as the source of a synonym to robot, 'jinzo ningen' which literally means 'artificial human'. The Japanese version of robot's definition differs from OED version due to its special way of recognition towards robots' role as compared to humans'. Sone illustrates on this Western-Japanese difference that the western translation has implied robots' unitary features coming from streamline production, while the Japanese version has offered the robots certain degrees of particularities [8]. From a cross-cultural study in robotic labs with roboticists from different backgrounds,

Jennifer Robertson finds that there is a distinction between western countries and Japan in terms of people's understanding of robots [9]. While the western narratives incline to view robots as mere mechanical objects mainly for the assistance of production, the Japanese ideological counterpart holds robots as ones incorporable into spaces dwelled by humans. What is particular of the Japanese narrative is that it is acceptable for people of this society to take robots as more than mere tools and foes, but cohabitants in paralleled position with humans [10].

Rathmann takes the Japanese line of thought as resulted from Japan's sociocultural particularities which are informed by Shintōist-Buddhist cosmology [11]. The Shinto mindset that enlivens the nature and nonhumans is related with the way robots are narrated, perceived and located in human society. I will firstly inspect on Japanese animistic ontology that I argue as embedding the social imaginaries concerning robots, and the understanding of their actions. Japanese people's affective engagement with robots is found to be in line with Japan's particular animistic ontology [12]. I borrow the term techno-animism for the denotation of the phenomena of people infusing inanimate creations with spiritual properties.

2.1. Japan's animistic ontology

Allow me to firstly make clear of the distinction between new animism and the earlier animistic stances. Earlier concept of animism in anthropology was first coined by E. B. Tylor's Primitive Culture in which he referred to animism as the phenomena of people attributing anthropomorphic qualities to non-human beings [9]. Tylor, in this aforementioned work, treated animism as a form of

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epistemology particular to the peoples of 'primitive' and small-scaled societies. This treatment on animistic phenomena was widely critiqued by positivists of Tylor's contemporaries as a failed epistemology. Current notions surrounding animism, or neoanimism, on the other hand, dismiss their earlier ideological enterprise by shifting the focus to questions on the point of distinction between social world (human) and natural world (nonhuman), animate and inanimate. Rather than treating animism as mere perceptual frameworks assigning life to objects, new trends of animism reconfigures the field interest towards the uncovering of elements influencing humans' perception of their relations with nonhumans.

Martin Holbraad's critique against the traditional stances on animism has best reflected the contradiction existing in traditional stances on animism [13]. Holbraad notifies the "cognitive trap" prevalent among the early studies on animism that animistic phenomena are taken as merely a process of mystifying objects into inert beings carrying souls [13]. He argues that appropriation of soul to inanimate nonhumans would mean the confirmation of material agencies being embedded by non-material entities. For Holbraad, a resurgence of research on animism should be focusing on an ideological ground that recognises the changeable nature of relation.

2.2. New animism

The shift of scholarly thought in terms of animism prompts anthropologists to scrutinise the frontier correlating human with nonhuman, animate with inanimate. This new ideological faction accentuates on the effects of human interaction with nonhuman rather than the existence of animistic beliefs. This turn of conceptual stance makes animism a viable ideological tool in the age of smart technologies for further inspection of the human apprehension, communication, and interaction with robots and artificial intelligence. However, the existing literatures have not made up a concise analytical paradigm specifically for the animistic mode of thought by humans against robots in Japanese society. It is for the addressing of technoanimistic thinking's percolation and fusion with Japan's traditional Shinto-animism that I feel necessary in constituting a paradigm following the ideological trend of neo-animism for the discussion of Japanese animist ontology's fusion with their robotic technologies. Bird-David dismisses the Tylorian model of animism as a 'failed epistemology' which limits the discussion of animistic phenomena [14]. Bird-David argues that animism is not mere mystification of remote cultures – injection of spiritual essences or soul into inanimate objects. She suggests a trend of rethinking over the relation between human and nonhuman.

Bird-David argues that a relationalist stance best accounts for the mutually constitutive relation between humans and nonhumans [14]. People animate mechanical and technological things by "[doing] what they do in relation, how they respond to our behaviour, and how they act towards us" (ibid.: 9). The human-nonhuman relation is built on the basis of an animistically driven cosmology. Along the line of thought by Bird-David, human-nonhuman relation is never one of constant state, but one of fluctuation and change according to the contextual setting to which animism provides a mirror of reference. The relatedness between humans and nonhumans, following the argument by Bird-David, is one residing on the level of perception – how we the humans perceive of the "appearance" and "response" of the inanimate beings.

And it is against this point of departure by Bird-David's relational epistemology that several other scholars on animism pose their theories against. Tim Ingold initiates his famous argument of "world-in-formation" by a question towards the essences underlying the animistic mode of thought [15]. Ingold argues that the perceptual distinction marking the animate from the inanimate [15], the living among the non-living, is never a given. It is from the ontological differences that come the materials of conception. "Animacy of the [lifeworld]" is not about the epistemological mouldering on the

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inanimate nonhuman substances by “infusion of life”. Animation of the non-livings, according to Ingold [15], is embedded by the aim of differentiation following the ontologies.

Differences in terms of concepts of life comes from the distinction among ontologies. The recognition of ontological differences does not merely mean the pluralisation of typological notions, but a revolution of ideology traditional to western philosophical stance – that of Cartesian taxonomies positing a fixed and static set of notions against the objects in the world.

There is a hard line of differentiation drawing the distinction among human and nonhuman, and categorising different beings, living or non-living into different genres. Deconstructing this metaphysics inherited from Cartesianism, Ingold’s aforementioned argument has captured the straddling nature of entities permeating through the categorical boundaries.

2.3. When Japanese encounter with robots

Human interpretation of robotic behaviours

Japanese anthropologist and STS scholar, Akinori Kubo [15], accounts a story of AIBO, a line of companion robotic dog product devised and manufactured by SONY, in a funeral for one of the senior generation of AIBO’s owning family: “With the AIBO switched on and positioned with its back against the altar amongst the people paying their respect, the 'dog’ slowly turned around and walked toward the photo of the old lady. It barked out 'grandma’ in its particular AIBO language, got seated on one of the cushions in front of the altar and lowered its head as if it was trying to bow to its 'grandma’… During the whole process of AIBO’s honouring of his grandma, the blue light on the back of its neck was lit up, showing that AIBO was in deep sorrow” [15]. According to Kubo [16], the whole family were touched by the little dog’s series of actions. “Watching the AIBO gazing at the photo of 'grandma’, some of the relatives got covered with tears”. The AIBO’s behaviours clearly aroused the emotional change among the relatives present at the funeral.

If only referring to the manual instruction of AIBO, this robotic dog’s behaviour at the funeral is nothing more than technical design. At this aforementioned funeral, the AIBO dog recognised the image of its 'grandma’ with its optical units beneath the eyes. According to the specification by SONY, AIBO can memorise the image of its users and recognise them regardless of the change of surrounding context [13]. As AIBO made the particular sound towards the photo of 'grandma’, it was calling in the stored data related with the human user and acted in accordance with the assigned set of behaviours. The 'particular’ sound for 'grandma’ was determined by nothing more than the sequence 'grandma’ got memorised by the AIBO. With no response made by its 'grandma’, the AIBO lit up its indicator light in blue and followed a series of movements and gestures along its pre-programmed codes. However technical may the way of behaviours by AIBO can be explained, the interpretation by its owners would never merely reflect AIBO as a mechanical device responding to physical stimulus. As has been shown in Kubo’s account of the AIBO owners at the funeral, the robotic dog can express emotion and affect the humans in return. The AIBO, in the eyes of its owners’, is an autonomous agent.

As “boundary beings” situated across technological spheres, cultural spaces, and modes of perception [4], robots along with their actions, reflected through the aforementioned AIBO case, cannot be checked against given answers. While there may be an accurate set of explanation for the principle of mechanical design and creation behind the robotic behaviours, there is no precise model for human users to further interpret them. Sabe and Fujita, the two chief roboticists for AIBO, stated, in regard to a series of survey in terms of user attitude towards AIBO’s appearance and behaviours, that the robotic dog rarely behaves beyond technical expectation, “but users frequently interpret the behaviours quite arbitrarily and end up pleased”. This assertion by the designers has suggested that

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the interaction between humans and robots can be taken in two folds – one as coming from the technical design, the other as reflected from the real-life interaction. As Kubo puts it, the 'imprecise' and seemingly 'arbitrary' interpretations carry with themselves the significance within the cultural spaces when technological beings, such as AIBO, inevitably meet with their mirrored image perceived by the human users.

3. Techno-animism

"We, the Japanese, have a special feeling for robots" [16]. Similar notions following the essence of this herein above-mentioned proposal that robots hold a special place in the eyes of Japanese people have been widely discussed among the academia. Japanese people's way of dealing with nonhumans and surrounding environment as animate or even personified beings is argued as being embedded by a greater body of "animist unconscious" [4]. Fundamental to the Japanese narrative in terms of its human-nonhuman relation is a linkage to Japan's traditional value system – rooted underneath Japan's socio-cultural display. The distinct Japanese Shintōism-Buddhism cosmology renders the infusion of spiritual essences into inanimate mechanical beings an acceptable phenomenon. This line of perception when extended to Japanese people's conception of technological creation is argued as part of a shared Japanese ontology. The materials for people's perceptualizing of robots, as argued by prior studies, come from the Japanese Shintōism-Buddhism cosmology and media representation in manga and anime [1,3,5,7]. It is about the perceptual materials for specific conceptualisation of robots in Japanese context that lead to the first component of my discussion – Japanese animism – to which I shall now turn. Japanese animism differentiates itself as an interesting case from the prevalent animistic paradigms on two bases. Firstly, as cultural theorists point out, that Japanese Shintōism, as a line of thought energised by animistic correlation, is politically intensive. Historically, Shintōism has been embraced as the core element for epistemological grounding and historical cultural relatedness to prompt different creations, material or non-material, as inherited from a uniquely Japanese origin [16]. The seeking for historical rootedness, according to Kovacic [2], is under nationalist aims (noticeably significant during the Taisho and Shaowa periods) and the governmental goal of pushing forward modernisation schemes. The prominence of Japanese animism is that it offers a contra-example to relational animism. which is usually taken as one in direct contrast to modern dualistic thinking following the tradition of Cartesianism4. As will be further illustrated, technological design and creation in Japan source their inspiration and concern from the Shintōist-Buddhist model of animistic thinking. Their fusion of the technological and the animistic reflected through robots' industrial making process has presented a set of phenomena unable to be included by the existing ideological stances.

3.1. Social imaginaries on robots as agents of embodied intelligence

The phenomena of treating non-living technological creations as things alive is widespread in Japan. According to Jennifer Robertson [16], household robots in Japan are designed to be in the appearance with general likeness to human child. Such humanoid robots5 may carry certain attributes that can be related with human characteristics. This kind of correlation, reported by the roboticists interviewed by Robertson [16], can lead to better human acceptance of robots. Case in point, Mitsubishi's humanoid robot, Wakamura, is designed to be in general yet ambiguous assemblance to a human boy. It is officially referred to as kun (the reference used to address male teenagers). In a public demonstration of Wakamura to showcase its functionality as a household humanoid, it is dressed in child clothes as this way of dressing can resonate with people's

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impression of an actual child. In the imaginaries by Japanese people, humanoids are animated with different humanly attributes assigned. Such robots, in general sense of effect, are like members to the household spaces. It is the coded social context of Japan that connects robots' 'real reality' with their perceived presentation. In this coded context, robots are treated as 'a third existence', having their 'lives' in effect between living and non-living.

The ideological proposal that people are animists in front of technological inventions is gaining influence among science and technology studies (STS) scholars. The point of focus for this paper – "animistic responses" by people towards technological objects – does not necessarily point to the belief of such mechanical beings as 'animated' but an amalgam of human experiences and consequent reactions following encounters with robots. That it is a gradual process for humans to pave into the social imaginaries commonly held against the technological things. In his autography on the 'interaction' he has with Mitsubishi's Wakamura robot, Hornyak describes how his initial impression of Wakamura simply as a 'cutelooking, yellowish, standing vacuum cleaner' and a 'cup holder' changes to a viewing of it as a 'humanoid assistant' . It is through the exchanges of dialogues, and shared staring at one another, and otherwise tiny humanly details of Wakamura that makes Hornyak feel like being engaged with a being rather than a cold-blooded 'something' [12].

As argued by Munakata, a complexity of information is generated following "the development of bonds … between the 'intelligent' products and their users" [13]. To the technological products, their users are cognitively as well as emotionally attached. Specific "repertoires of physical gestures" are applied. Towards each technological product, a particular system of expression is followed with regard to an "ontology infused with animistic inclination" [6]. The reality of advanced technology has enabled the rise of responsiveness of various technological entities among which robot epitomises. Towards the responsive technological things, we the human develop our embodied set of expression, which is informed by related social imaginaries that can eventually traced back to the loaded context of our ontology. Among all technological beings, robots take up a special place in terms of their interaction with humans.

4. Conclusion

Put anthropologically, a study of robots is not merely an inspection of the material culture but a scrutiny on these technological beings' complex association with the cultural and the symbolic. Robots are energised by the cultural particularities especially in terms of its perceived images to people of specific contexts. Humans' perception of robots is never a given that grows out of the mechanical appearance. It varies on the level of ontologies. As creations out of technoscientific researches, robots in Japan are put under the scope co-constituted by different epistemologies and cultural spaces in ways informed by the Shintōist-Buddhist ontology. Robots, not necessarily limited to the humanoids, are fitted into the semiotic contexts and in return further influence the side of humans. As material entities of symbolic significance, the infusion of meaning to robots and their consequent behaviours are inscribed by the given context in a style characteristic of the concerned cultural spaces.

The Shintōist-Buddhist inspired animistic ontology has been demonstrated as embedding a non-bifurcation that treats all beings – living or non-living, organic or inorganic – as spirited. Nonhumans, in material or non-material presence, are aligned parallelly with humans. Predicating the agencies of materials, Shintōist-Buddhist cosmology can be put into communication with the new animistic ideological stance that emphasises the changeable correlation between the animate and the inanimate. Japan's ontologically informed human perception of the relation with nonhuman surrounding, as a contrast to the western counterpart, is shown as flat and symmetrical rather than

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hierarchical and contested. This set of conception is extendable to techno-scientific context applying to the perceived human understanding of robots. Its techno-animistic ontology has paved the way for robots to be embraced by Japanese general public as 'a third existence' other than the beings coming from organic and inorganic origins.

Along the line of the ideological establishments by science and technology studies, robots cannot be disconnected from the societal and cultural materials from which the technoscientific disciplines arise. Residing on the boundary of real and unreal, living and nonliving, robots are substantial entities holding discursive sets of meanings. Perceptions people hold against the robotic figures, as is shown in the cases of this paper, are made up by a complexity of such discursive meanings, which in combination oscillate and weaver along a referential coordinate anchoring Japanese people's impression of what it means to be a robot. 'The third existence' notion, therefore, points to the presence of robots as a result of their material appearance being compared against the internalised robotic images. It is the social imaginaries embedded by animistic ontology that interconnect technological creation of general robotic essences, the kyara, with the real-life or fictional figures of iconicity and distinctiveness, the yorishiko.

References

[1] Richardson, K. (2015) An Anthropology of Robots and AI: Annihilation Anxiety and Machines. 1st edn. Routledge.
[2] Kovacic, M. (2018) 'The making of national robot history in Japan monozukuri enculturation and cultural lineage of robots', Critical Asian Studies, 50(4), pp. 572–590. doi: 10.1080/14672715.2018.1512003.
[3] Richardson, K. (2016) 'Technological Animism: The Uncanny Personhood of Humanoid Machines', Social Analysis, 60(1), pp. 110–128. doi: 10.3167/sa.2016.600108.
[4] Robertson, J. (2007) 'Robo sapiens Japanicus: Humanoid robots and the posthuman family', Critical Asian Studies, 39(3), pp. 369–398. doi: 10.1080/14672710701527378.
[5] Holbraad, M. (2009) 'Ontology, ethnography, archaeology: An afterword on the ontography of things', Cambridge Archaeological Journal, 19(3), pp. 431–441. doi: 10.1017/S0959774309000614.
[6] Ingold, T. (2006) 'Rethinking the animate, re-animating thought', Ethnos, 71(1), pp. 9–20. doi: 10.1080/00141840600603111.
[7] Sone, Y. (2018) 'Android Corporeality, Transhuman Performance and the Japanese "Mind"', Performance Research, 23(8), pp. 67–73. doi: 10.1080/13528165.2018.1573088.
[8] Ingold, T. (2010) 'Bringing things to life: Creative Entanglements in a world of materials', in National Centre for Research Methods. Economic and Social Research Council, pp. 1–14.
[9] Allison, A. (2003) 'Portable monsters and commodity cuteness : Pokemon as Japan's new global power', Postcolonial Studies, 6(3), pp. 381–395. doi: 10.1080/1368879032000162220.
[10] Bird-David, N. (1999) '"' Animism "' Revisited', Current Anthropology, 40(Supplement), pp. 67–92.
[11] Allison, A. (2006) Millennial Monsters: Japanese Toys and the Global Imagination. Berkeley: University of California Press.
[12] Ishiguro, H. (2007). 'Andoroido saiensu: Ningen wo sirutame no robotto kenkyu [Android science: A study to learn what the human is]', Tokyo: Mainichi Komyunike¯shonzu.
[13] Munakata, I. (1976) 'The ambivalent effects of modernization on the traditional folk religion of Japan', Japanese Journal of Religious Studies, 3(2–3), pp. 99–126. doi: 10.18874/jjrs.3.2-3.1976.99-126.
[14] Robertson, J. (2017) Robo sapiens japanicus: Robots, Gender, Family, and the Japanese Nation. Berkeley: University of California Press.
[15] Sone, Y. (2017) Japanese Robot Culture: Performance, Imagination, and Modernity. 1st edn. New York: Palgrave Macmillan. Available at: https: //www.youtube.com/watch?v=G5Vd9k3-3LM.
[16] Tylor, E. B. (2006) Primitive Culture: Researches Into the Development of Mythology. 2nd edn. Ann Arbor: University of Michigan Press.