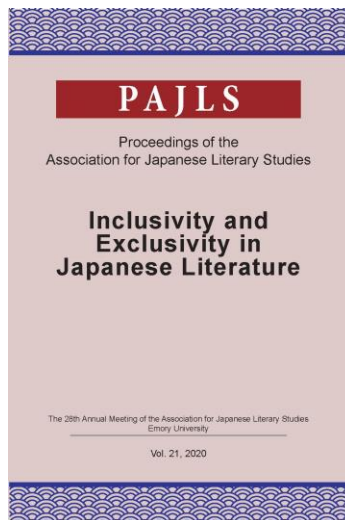


“Creative Science: Meiji-Era Science Fiction and  
the Discursive Location of *Zōkaki-ron*”

Kumiko Saito 

*Proceedings of the Association for Japanese  
Literary Studies* 21 (2020): 59–74.



*PAJLS* 21:  
*Inclusivity and Exclusivity in Japanese Literature.*  
Editor: Cheryl Crowley  
Managing Editor: Matthew Fraleigh

**CREATIVE SCIENCE: MEIJI-ERA SCIENCE FICTION AND THE  
DISCURSIVE LOCATION OF *ZŌKAKI-RON***

Kumiko Saito<sup>1</sup>  
*Clemson University*

In late nineteenth century Japan, the modern concept of literature took shape when the nation vigorously imported books about sciences and technologies from the West, striving to “enlighten” the people and catch up with the global pace of modernization. The field of the natural sciences started to form with scholarly efforts to differentiate science from literature, as well as from traditional Confucian sciences such as geography and history. This process of creating the cognitive boundaries between literature and science was heavily dependent on translation, which involved various new philosophies and practices of translating western languages, whether the source texts concern fictional matters or practical sciences. Often neglected in scholarship today is the significance of science fiction in this formation process of modern literature and science through translation. Translations of western science texts spawned hundreds of Japanese texts on science ranging from pseudoscientific studies to novels, which demonstrated fluid mixtures of translation, adaptation, and original writing.

This adaptation process through translation and modification of the source text for broader readership in the Meiji Era (1868–1912) can be called *tsūzoku* (popularization), which is the word often attached to book titles indicating accessibility to the common readers. The *tsūzoku* process at the interface of science and fiction started with two large movements in Meiji. One was the rise of political novels (*seiji shōsetsu*) in the 1880s, especially utopian novels speculating about Japan’s future introduction of the new political system called democracy. The other stream of the *tsūzoku* process emerged as *zōkaki-ron* (theory of creation), or books and discourses on sexology and medical knowledge about genital organs and their reproductive functions. This paper will focus on the texts published in the *zōkaki-ron* boom and trace the *tsūzoku* process of sexology from western source texts to Japanese texts. In doing so, I will identify transformations of discourses and taboos centered on sexual desire and the (re)production of the human body. These popular texts and playful readership constituted a majority of discourse productions about sex and reproduction across fluid boundaries of science and literature in the 1880s–

---

<sup>1</sup>  <https://orcid.org/0000-0001-7043-2333>

1900s. None of the authors became well-known for their work like the canonical authors of Meiji era; they represent a surprising variety of medical practitioners, translators, and writers of travel literature and popular fiction.

#### ***TSŪZOKU: POPULARIZATION AND CREATIVE TRANSLATION***

Since the middle of the twentieth century, definitions of science fiction consist of postwar products from genre studies under strong influences from structuralist and post-structuralist theories. The structuralist approach tends to rely on the subject matters and characters in relation to science. As *Encyclopedia Britannica* defines the term, it is “a form of fiction that deals principally with the impact of actual or imagined science upon society or individuals.” A leader of the structuralist literary genre studies, Northrop Frye, cites in *Anatomy of Criticism* (1957) a theoretical model from Aristotle’s *Poetics* and sets up four categories of fiction based on whether the hero is superior (high mimetic) or inferior (low mimetic) to “us,” and then divides them according to the degree of the “mimetic mode,” *i.e.* the degree of how close the story is to “our” world. Science fiction and fantasy belong to the less mimetic world of settings and heroes superior to us, often committed to such subjects as high technology and advanced society. Post-structuralist approaches shift from the textual content to the reader’s psychological function with latent, sometimes explicit, relationship to the Gramscian design of literature as a critical reaction to bourgeois realism. Darko Suvin’s *Metamorphoses of Science Fiction* (1979), strongly supported by the socialist utopian model and the notion of estrangement borrowed from Brecht’s *Verfremdung*, the effect of estrangement that differentiates and distances the familiar reality and thereby reveals the underlying historical/political structures of otherwise hidden ideologies.

The term “science fiction” in this essay will traverse several classifications that may appear as established disciplinary borders today. Science fiction in Meiji precedes the emergence of both the words and concepts of “reality” and “science.” These texts challenge the contemporary reader for they show the distinction between science and imaginative creation to be elusive. “Science fiction” in this essay is not synonymous with the postwar notions of sci-fi as defined by structuralist or post-structuralist discussions of the genre or with what came to be called S.F. (*esu efu*) in postwar Japan. Unlike contemporary ideas of science fiction conditioned by their posteriority to the binaries of realism and fantasy, early Meiji was still undergoing the emergent phase in separating fantastic fiction from realism, to say nothing of literature from science.

The field of the natural sciences started to form as Japan vigorously imported books about sciences and technologies from the West, striving to catch up with the global pace of modernization. This process of forming literature and science involved various new philosophies and practices of translating western languages, whether the source texts concern fictional matters or practical sciences. Translation in early Meiji was “a project on which the existence of the entire nation was staked” (Kamei, 9) and regarded as one of the most powerful means to accelerate modernization following the two-century-long period of isolation from the world.

Characteristically, many science fictional texts in this era collocate translation, adaptation, and original writing. Translations of books on sexology from the West especially display creative additions and modifications due to the degree of moral and religious restraints surrounding the subjects, namely sex and the mystery of birth. This literature resides in the national-scale translation project for advancing enlightenment or westernization known as *kaika* in Japanese. Continuing from the traditions of Dutch studies (*rangaku*) and later of Occidental studies (*yōgaku*), translation of western texts led the *kaika* culture of Meiji Japan. The value of science fiction from late-Meiji to postwar rapidly deteriorated to entertainment, low culture, or children’s educational materials at most, in clear proportion to the rise of science and the formation of the modern nation-state. The scientific literature undertook the mission of inventing a new language for science as well as valorizing and classifying multiple notions of “science” built on both traditional Confucian concepts of knowledge and western natural sciences. The emergence of science fiction, whether in the form of utopian novels or popular medical tracts, primarily owes to the interstitial topography of the texts between the waning but strong premodern popular culture from Edo period, mostly derived from *gesaku* and *kōdan*, and the new corpus of translated literature, which placed enormous challenges for readers to comprehend. In this essay, I call this manifold and heterogeneous process of translation, adaptation, and popularization *tsūzoku*, a term widely used for book titles in Meiji that attempted to bridge new knowledge from the West and popular fiction for the masses. As Akagawa Manabu points out, one of the most notable characteristics of *tsūzoku* is that information came to be widely distributed as paperbacks without medical experts’ filtering of knowledge (21).

It is essential to address the effects of the *tsūzoku* process in terms of amorphously differing degrees of translation and creation through the spectrum that spans from the imaginary authorship in the West to the fluid readership in Japanese popular culture. These *tsūzoku* texts attempt to

cross the epistemological gap between Japanese readers and “enlightenment,” Japan and the western source texts, and the reader and the author. The source texts are mostly serious studies written by American and German medical experts who perhaps assumed no Japanese readership. *Tsūzoku* enabled the Japanese readers to enjoy accessible readings that satisfy their curiosity about the newly discovered world of “western knowledge,” which was strictly limited to experts and intellectuals prior to the Meiji era. Meiji-era science fiction can be located in this widespread popularization of “scientific” knowledge loaded with the ambition of simultaneously educating and entertaining the readers. It was especially so with the popularity of *zōkaki-ron* 造化機論, or books and discourses revolving on sexology and medical knowledge about genital organs and their reproductive functions. I will trace the *tsūzoku* process from the western source texts to fictional texts and thereby identify transformations and expansions of discourses centered on prohibitions and celebrations of sexual matters.

#### **ZŌKAKI-RON: FROM SOURCE TEXTS TO TSŪZOKU TEXTS**

*Zōkaki* was a newly coined term for generative organs in the human body, which seems to have emerged along with the rise of translations and adaptations mostly from English writings imported to Japan. The term *zōkaki-ron*, or theory on *zōkaki*, signifies sexological discourses that triggered a boom from the late 1870s to 90s. They merged translated and original Japanese texts, mostly adapting information gained from imported books and reediting it with original ideas and opinions. The actual scale of the boom is unknown: *Nihon shisō taikai*'s volume on sex (1990) lists 54 books that can be identified as *zōkaki-ron*, and *Meiji bunka shiryō sōsho* (1959) lists 56 books in the *zōkaki-ron* category. Considering the publications that may have disappeared, the number of *zōkaki-ron* books can be estimated to surpass 100. While scholarship assigns the name “*zōkaki-ron*” to the group of texts, they do not form a coherent group or share a commonality among all members of the category. Some common *zōkaki* contents include medical anatomy of male and female genital organs and discussions of their functions, illustrated explanations on the growth of the fetus tracking its growth month by month, the mechanism of pregnancy, and the symptoms and treatment of venereal diseases. Japanese translations can be identified by such key words as *zōka* (creation), *seishoku* (reproduction or reproductive organs), *shikijō* (amorous emotion) or *shikijō eisei* (sexual hygiene), and *danjo kōgō* (male-female intercourse), and *jintai* or *jinshin* (human body).

Most of the primary source texts that contributed to the formation of the sexology boom in Meiji are family medicine guides and marriage guides written by physicians for common readers. In addition to the common contents in Japanese listed above, the western texts typically include practical advice on courting, happy marriage, child-rearing, and controlling pregnancy, whether preventing it or impregnating with a baby of the desired sex. The Japanese translations and creative revisions tend to exclude the sections or chapters about general family medicine unrelated to sexual tips or cultural matters of courting or family management. Below, I will provide an overview of six common source texts and their Japanese translations.

Christoph Wilhelm Hufeland's (1762–1836) *Macrobiotics: The Art of Prolonging Life*, was first published in Germany in 1794, according to the editor and translator of the English version published in 1854. The German title, *Die Kunst, das menschliche Leben zu verlängern*, or the art of extending human life, was literally translated by Tsuji Jōsuke as *Chōsei-hō* in Japanese, published in 1867. The Japanese book is likely a translation of the 1854 English publication in Boston, judging from the preface. Both English and Japanese versions discuss the importance of abstinence in youth and the regulation of lovemaking and passion in marriage.

The invention of the word *zōkaki* can be credited to Chiba Shigeru's *Tsūzoku Zōkakiron*, published in three volumes from 1876 to 1878. According to Chiba, the first volume was translated from James Ashton's book, which appears to be *The Book of Nature: containing information for young people who think of getting married: on the philosophy of procreation and sexual intercourse, showing how to prevent conception and to avoid child-bearing: also, rules for management during labor and child-birth* (1861). The other two volumes come from Edward Bliss Foote's (1829–1906) *Medical common sense applied to the causes, prevention and cure of chronic diseases; and plain home talk about the sexual organs: the natural relation of the sexes; society civilization; and marriage* (1868). *Medical Common Sense* is a comprehensive family medicine guide on diverse medical topics, but Chiba's volumes excerpt the chapters on sexual organs, sexual activities, and venereal diseases. The three-volume Japanese books consisting of select chapters from two separate works by Ashton and Foote did not sell well and soon turned into an abridged version, also translated by Chiba, which significantly contributed to the sexology boom.

Samuel La'Mert's (1812–76) book, first published around 1841, is known as *Self-preservation: a medical treatise on the secret infirmities and disorders of the generative organs, resulting from solitary habits*,

*youthful excess, or infection, with practical observations on the premature failure of sexual power.* The Japanese translation in 1878, *Tsūzoku danjo jieiron* [Theories on the Self-Defense of Men and Women], was translated from *Die Selbst-Bewahrung* (1869), a German book by a doctor known as Retau according to the translator Miyake Torata, but Retau's book is a German translation of La'Mert's *Self-Preservation* although this is not credited in Miyake's Japanese version. La'Mert's book is unique due to the extensive moral discussions of correlatives between self-pollution and diseases, which transfers in detail to the Japanese version through Retau's translation.

O.S. Fowler's *Creative and Sexual Science* (1870) came out in Japan as *Danjo no gimu* [Duties of Men and Women] in 1879, translated by Hashizume Kan'ichi. Fowler's book has comprehensive discussions of gender differences, courtship, marriage cohabitation, maternity, and child-rearing, but Hashizume's translation exclusively focuses on Part VI, namely on intercourse, love, and marriage. Fowler's book promotes the idea that mental love and sexual pleasure correspond with each other while what Fowler calls self-pollution, namely masturbation, is one of the most destructive evils.

Frederick Hollick (1818–1900), American physician and sex educator, is perhaps best known today for the obscenity trials he underwent due to his public teachings about sex and contraception, mainly to women. His book, *The Marriage Guide, or, Natural History of Generation* (1850), was translated by Moriya Jūjirō and published under the title, *Tsūzoku zōkaki kigenshi* [History of the Origins of Generative Organs] in 1880. Moriya's translation is faithful to the original in the chapter compositions. Hollick's theories significantly differ from the mainstream of the era because of the promotion of contraception for financial and health reasons. Hollick also emphasizes the importance of sexual pleasure. The Japanese translation closely follows the contents on anatomy and mechanism of pregnancy but ends before reaching the sections on detailed theories on these subjects.

#### CREATION MYTHS AND CREATIVE TRANSLATIONS

The *zōkaki-ron* publications imaginatively wove Japanese translations and imported medical discourses together into varying degrees of interpretations, ranging from relatively literal translations to creatively abridged and loosely paraphrased versions merged with the translator's own opinions. Existing scholarship on the genre of *zōkaki-ron* has often limited the research scope to social sciences and medical discourses and tended to neglect creative aspects of translation and *tsūzoku* adaptations.

This “creativity” in translation does not necessarily signify positive changes, of course. More importantly, the alterations and renditions in Japanese versions show many traces of attempts to translate cultural differences and convey knowledge about taboos centered on sex and the creation of life, many of which are rooted in unyielding religious beliefs of the source cultures. The source texts originating from the U.S. and Europe built medical discourses around the Christian taboos, some of which transferred to Japanese texts in literal translation and some of which disappeared along the process of cultural transfer. The representative concepts that appear in the source texts and are detectable in the Japanese texts can be classified into four categories: 1) the essential monogamy and vice of extra-marital relationship, 2) the correspondence between mental love and physical pleasure, 3) the evil of contraception, and 4) the harm of solitary habits (masturbation) especially to children and the need for disciplining children’s sexual habits.

The Japanese translations show tendencies to more faithfully transfer, sometimes even expand, the new knowledge about these social rules. Regarding the correlation of mental bonding and physical pleasure, the source texts make extra efforts to hypothesize the scientific correspondence between the psychological effect called love and the physical effects of sex. For instance, Ashton argues that the sex of the fetus is determined by the degree of passion and sexual engagement: “the sex of a child is influenced by circumstances at the moment of conception. Both experiment and observation have shown that the most ardent and vigorous individual of the couple, whether it be the man or the woman, will cause the sex of the child” (Ashton, 28). In Foote’s theory, the mutual psychological attraction between a man and a woman is theorized to be electric effect between positive and negative: “it is apparent that two persons of different sex and temperament sustain the electrical conditions of positive and negative to each other, and that contact, if of sufficient duration, produces an equilibrium, unless the one possessing the greater amount, restrains it by the action of the will” (Foote, 624). Fowler proposes the idea that men possess two types of semen: the mental semen, which does not excite men but attracts men to women’s virtues, and the physical semen, which leads men to coitus provoked by female magnetism (719). Friction in coitus further generates electricity (738), which produces “mutual sympathy” through the union between positive (semen) and negative (ovum) and thereby bears new life (742–3). These hypotheses coming from specific sources reappear across various Japanese writings in the *zōkaki-ron* genre, sometimes finding their seats in traditional terminologies. For example, the magnetic effect of positive and negative



electricity bringing new life translates to the Yin and Yang concepts of East Asian thought. Common to these books is the idea that women's sexual pleasure is healthy, often more intense than men: the *zōkaki* translations closely follow this discourse without any objection.

The harm of masturbation is widely discussed across the source texts and translations with much hesitation and conflicting opinions. As Ueno Chizuko points out, the modern discourses of sexual abnormality and disciplinary control of normative reproduction rapidly formed in the 1920s in tandem with the emergence of eugenics (520). These Meiji-era publications on sexology in the 1880s–90s display diverse beliefs and opinions in contrast to the uniform voices about the harms and abnormalities of masturbation, originating from medical experts in the 1920s such as Habuto Eiji. Akagawa questions why masturbation is already the only strict taboo widely accepted in Meiji sexology (24). From the viewpoint of textual comparisons between source texts and translations, however, there are few discrepancies between what the sources present as evil and what the Japanese translations claim to be evil. In other words, the *tsūzoku* writings do not object to theories presented in the source texts; or rather, they unequivocally translate and transfer newly discovered knowledge, including the vice of self-pollution, following the Meiji mission of enlightening the Japanese by westernization. Differing voices emerge as the texts become more distant from the epicenter to the margins, namely from authentic translations to more original and creative writings.

The disparities among translations and opinions appear when they attempt to provide the reasons for prohibiting masturbation. The Japanese translations tend to delete sections in the source texts that explain the Christian origins of the taboo, namely, onanism. For example, La'Mert's *Self-Preservation* (and its German version by Retau) explicitly presents the episode of Er and Onan in Genesis, which is removed and replaced by references to general morals in Miyake's translation. Chapter 38 of Genesis tells the story of Judah's sons, Er and Onan. After Er was killed due to his being "wicked," Judah told Onan to lie with Er's wife to produce offspring, but Onan "spilled his semen on the ground to keep from producing offspring for his brother" (line 10). For this wicked act, the Lord killed Onan as well. *Self-Preservation* states that Onan wasted seed and the prevention of procreation is a sin (37). In this context, onanism strictly signifies the act of wasting seed, while masturbation, usually equated with self-pollution and solitary habit, may not necessarily result in committing the sin of onanism. Onanism in the source texts also include the so-called "withdrawal" or spilling outside the female body during an intercourse

with a partner; thus, contraception is “a kind of Onanism on the part of the male” (Ashton, 38). Fowler’s *Creative and Sexual Science* explains that self-pollution is one of the most destructive evils, yet onanism is worse than masturbation and causes various diseases (700). The implications of onanism entirely disappear in the Japanese texts. Hashizume’s translation of *Creative and Sexual Science* is a rare exception that introduces the word *onanisumu* in katakana although without noting the difference (117). Once translated to Japanese, the various English euphemisms for masturbation like solitary habits as well as onanism altogether turn into *shuin* (hand sensualism, also read as *te-itazura*), sometimes *tezuri* (hand rubbing), without tangible traces of semantic differences.

The translators decipher *zōkaki-ron* texts on two different planes of translation: linguistically, they sought for similar words in Japanese, and culturally, they attempted to present similar cultural aspects. Accordingly, the religious justification for the prohibition of the solitary act is lost in translation and converted to medical discourses. The adverse effects of masturbation are translated straightforwardly, and their stories are widely disseminated as medical guidance across Japanese writings. The most common story about the danger of masturbation is that the semen is made of blood. Tsuji’s *Chōseihō*, translated from Hufeland’s *Macrobiotics*, writes that *shuin* goes against the rule of Heaven (*tenri*) because it exhausts and shortens one’s life. The translator even adds his own words to explain further that one coitus equals the loss of six ounces of blood, and one ejaculation equals the loss of six times more blood than coitus (16). Accordingly, one ejaculation sacrifices about one liter of blood. La’Mert’s *Self-Preservation* also mentions that “the loss of 1 ounce of this fluid [semen] by the unnatural act of self-pollution or in nocturnal emissions weakens the system more completely than the abstraction of 40 ounces of blood” (41). This idea ties into the common discourse among the *zōkaki* writings that masturbation is especially harmful to youth and children, as their growth will be incomplete. This evil act will eventually result in general weakening, weak sight, weak nervous system, baldness, pimples, and symptoms associated with venereal diseases. Another common reason for the prohibition of masturbation is presented by the theory of sex as interaction of positive and negative electricity, advocated mainly by Chiba’s translations. Hashizume’s translation closely follows Fowler’s hypothesis that in solitary or single-sex acts, the body exhausts magnetism without resupply from the other sex, eventually resulting in deteriorated health (Fowler, 700; Hashizume, 117). These examples replace religious justifications with speculations about the body as a mechanical organism.

In Japanese translations, the holes created by the absence of justification for the sin of onanism are filled by Japan's indigenous religious contexts, namely, Shinto mythologies. The term *zōka* itself was borrowed from the Japanese creation myths, allegedly the historical records of the imperial ancestry written in *Kojiki* and *Nihon shoki*. *Zōka* literally signifies "creation" in its Sino-Japanese reading but is also accompanied by a Japanese phonetic reading, which is *kami* or *kamisama* (gods). According to *Kojiki*, the three gods of *zōka* are Ame no minakanushi no kami (the center pillar of Heaven), Takami musubi no kami (representing the male side and the creation of Heaven), and Kami musubi no kami (representing the female side and the creation of Earth). The central role of the two gods who created Heaven and Earth is *musubi*, literally tying a knot and figuratively lovemaking. The mystic celebration of the gods' sacred creation can be traced in moral messages added in translations. For instance, Miyake's translation of *Self-Preservation* adds original sentences while removing Onan references, stating that *kamisama* (*zōka* in kanji) created two sexes, granted us sexual emotion (*iroke*), and gave us tools (*kikai*) for intercourse (36). He asserts that human coition is the heavenly gods' will and nothing immoral (37). These writings loosely link the danger of masturbation with the heavenly order to reproduce, but the contexts revolving around the sin of refusing to reproduce while indulging in sexual pleasure are entirely lost in translation. This absence of contexts makes the prohibition of masturbation in the *zōkaki* corpus an awkwardly isolated discourse unsupported by religious literature but loosely endorsed by medical science.

The religious linkages between sex and gods are more intense in original Japanese writings than translations, such as *Irogoto no shikata* [How to conduct sex] by Gika Jōshi (1883) and Nakamura Asakichi's *Irogoto shinan* [A guide to sex] (1889). These practical how-to sex books closely reflect influences from popular novels and entertainment in the Edo period and openly state that sex is the beginning of all things in the world and the origin of the nation. These also do not include the references to the harms of masturbation common in *zōkaki* translations. It is worth noting that Japan's openness to cultural ties between the celebration of sex and the gods of creation already appears as a counterexample to the modern West in the source writings, although not translated. For instance, Foote introduces Japan as a nation where "they have various little gods, and among them those made in imitation of the male organs of generation" and in "a perfect representation of the female organs of generation (external)" (610). In this example, Foote insists that Japan is a contemporary rare example where men and women worship

phallus/vagina deities and bathe naked together in the public bath. In contrast to Japan, according to Foote, the modern world came to regard sexual organs with contempt and silence. However, what Foote fails to understand is that while Japanese religion openly celebrates the connection between human and divine creation, this in no way means that Japan is free from sexual taboos. Because the myths record the history of the imperial ancestry, to call attention to the associations between the amorous gods and the imperial family, especially in the name of medical science, could be controversial.

#### SCRIBBLES IN THE MARGINS: ZŌKA-INSPIRED FICTIONS AND PLAYFUL READERS

If the translations and their imagined source texts from the West were at the epicenter of the explosive popularity of *zōkaki-ron*, the readers of the allegedly scientific texts playfully fictionalized the medical, technical, and religious discourses of creation, thereby disseminating their playful interpretations on the margins and twisting the authenticity of translation. Compared to the tangible records of *zōkaki-ron* available on paper, traces of readership are hard to track. According to Oda Ryō, the populace “actively misconstrued the sexological purposes of *zōkaki-ron* and read them in the manner of Edo-period *shunga* [pornographic drawings]” (38). The translated texts faithfully copy the detailed drawings of the source texts, which are highly graphic in the original publications. Some remaining copies of the books on *zōkaki-ron* have scribbled drawings of sexual organs left by previous owners, suggesting that the readers’ interests may have lay outside the intended use of the medical books. Fictional writings closely influenced and inspired by *zōkaki-ron* share the interpretive playfulness with readers keeping distance from the authenticity of translated sexual taboos. In these fiction texts, discourses proliferate around the sites of cultural clashes over imported knowledge.

Now I will delve into discussion of three textual examples that playfully translate scientific knowledge into popular fiction. These novels demonstrate differing degrees of negotiations between interpretations of sexual taboos. *Jintai dōchū hizakurige* by Sango no Tsukimaru (1887) parodies the Edo bestseller *Tōkaidōchū hizakurige* (1802), known as *Shank’s Mare* in English, a picaresque novel by Jippensha Ikku. Changing the setting from a traveler’s guide to the Tōkaidō Road to a medical guide to the human body (*jintai*), the story focuses on the two travelers, Yaji and Kita, in a comic but informative manner. The locations they visit are not internal organs but external body parts such as hands and breasts. The public interest in the newly discovered body functions may have driven

this type of fiction, but this novel shows less influence from the anatomical details characteristic of *zōkaki-ron*.

Nadaoka Komataro's *Jinshin tainai seijiki* [The Record of Political Affairs in the Human Body] (1889) closely mirrors the popularity of *zōkaki-ron* and incorporates the author's knowledge from the *zōkaki-ron* books in the form of comments added to the story. The book seemingly presents educational stories about the function of essential organs in the human body. Each body part and its functions are compared to lives and duties in society, like present-day children's educational books about how the human body works. Bodily operations are generally divided into the imperial sphere and the governmental sphere, respectively representing the mental work of the brain or nervous system and the physical needs and activities of the body. For example, the Ministry of Internal Affairs conducts duties related to nutrition and blood circulation, and the Army manages muscles and motion. The novel details the "great festivals" or holidays for all residents' shrine visits to celebrate imperial marriage. The newly coined word for the womb in this period is literally the imperial residence for a child (*shikyū*, or *ko no miya*), and the *miya*, the imperial residence or shrine, securely holds a princess (Figure 1). Once the imperial



Figure 1: The prince visits the princess in *ko no miya*, or the palace of the child.

sanction comes from the emperor and the great shrine visit begins, a bridge to the *miya* is built for the imperial prince to visit her (85–6). The emperor expresses pleasure on this national holiday (86). The matching is not always successful: the prince may be too weak to reach the princess and fail to save her from dying in 28 days, or the princess may be absent in certain months. After successful lovemaking, the baby may still die due to malnutrition. In serious cases of illness, the residence itself may collapse.

*Daikaibutsu: eisei shōsetsu* [The Great Monster: A Hygienic Novel], published in 1896, calls itself a “bacterial novel.” According to the author, under the penname of Kūchōshi (meaning empty intestines), he translated a micro-size manuscript that the novel’s protagonist, a virus, wrote in bacterial letters. The bacterial author is Mr. Tuberculosis, born in a prestigious singer’s lungs, an elite pedigree for a virus. He goes to the highest bacterial university, where he rises as a prominent scholar by proposing the theory that in their original state, humans do not possess sexual desire. For microscopic creatures in the human body, the human world is still full of untrodden areas. Top scholars explore and colonize these unmapped territories while conducting research on the body. One day Tuberculosis is selected for the honored government mission to investigate the mystery of human creation. After life-threatening adventures, he reaches the mystic country where the legends say human life is born. The indigenous people who worship the sacred place of the origin tell that eels evolve into human forms in the cave, which Tuberculosis hopes to witness, but fails to see the magical fish because a giant monster appears in the cave at each opportunity. Eventually, his rivals, Mr. Syphilis and Mr. Gonorrhea, gain political power with new discoveries about generative organs, while Tuberculosis exiles himself to the Far East and authors this novel.

These novels share the setting that the characters are cells and viruses living in the microscopic world of a human body. The minuscule creatures are anthropomorphized so that the body can be remapped in metaphorical comparisons to the real-world social structure. The human body and its residents are in an antagonistic relationship with invading viruses such as immigrants, colonialists, and imported goods. The idea that cells work autonomously owes much to the new theory of the semen in which minuscule fish-like creatures swim on their own. These “little eels with large heads, or pollywogs, are supposed to be the germ of the brain and spine” (Ashton, 10). The eels already own the core of the future human body, which eats the egg to grow. This theory is widespread across Japanese translations as well, including the translations from Ashton and

Footnote and other original *zōkaki-ron* writings such as *Zōka myōmyō kidan* [Strange Stories of Zōka] by Miyazaki Ryūjō (1887) and *Danjo kōgō genron* [The Principles of Male-Female Intercourse] by Seyama Sakichi (1887).

These novels construct and reinforce the proximity between the emperor, emblematic of the nation's highest spiritual quality, and lovemaking, equating the two through metaphors of bodily functions. The process is similar to the careful building of associations between sex and the gods' work that we saw in some of the translated examples discussed above. In some respects, new scientific knowledge serves to sustain the mythological discourses surrounding the birth of the nation. In the episode in *Jinshin tainai seijiki* illustrating the imperial court as a metaphor for intercourse, the story does not depict the prince and the princess to obscenize the imperial court: rather, it augments the trinity of the emperor as the central pillar of the nation that governs the male and female gods of creation. The anthropomorphized cells better fit the politico-literary purpose of imagining the country made of microscopic departments, each of which functions independently but respects the imperial order of sexual celebration issued from the brain and nerves. The depiction of characters as loyal cells to the royal customs works hand in hand with the anatomical view of the body, with each organ independent and functioning as an integral portion of the overall network under the supreme spiritual order beyond the government. Comparing generative organs to autonomous mechanisms further helps to tie the miraculous work of creation into the newly invented terminology of technological mechanism (*kikai*). The term *ki* or *kikai* for *zōkaki* helps the reader to imagine the biological birth of life in closer associations with the mythical gods' creation of tools in the borderless continuum between organs and hand-made mechanisms.

The absence of sexual desire, on the contrary, is regarded as a threatening taboo originating from modern science. In *Daikaibutsu*, Mr. Tuberculosis attempts to prove his cutting-edge theory that humans have no sexual desire, even by risking his life to explore the ancient legend in the deepest part of the dark continent, only to encounter the invisibility of the great monster and fish in the cave. In this sarcastic episode, science aims to reaffirm the concept that the asexual condition exists in the human body and precedes the sexual state, which enables the scientist to re-discover the monster and birth of life as a taboo. The magical creation of human life becomes the invisibility itself, a taboo to the scientist who aspires to prove the absence of sexual desire by means of the anatomical proposition of coitus. In contrast to *Daikaibutsu*, *Jinshin tainai seijiki* reveals efforts to defy the scientific discourses common in *zōkaki-ron*. In

the story about the imperial marriage, the author adds practical advice that coitus and masturbation are equally safe to adults as far as they sustain the moderate practice, such as once every four days (98–99). In this story, a greater fear lies with the death of the prince or princess or the disapproval issued from the emperor’s discomfort, as all cells and their organs contribute much of their work to the successful marriage.

#### CONCLUDING REMARK

*Danjo no eisei* [Men and Women’s Hygiene], a 1908 bestseller written by a group of medical doctors, marked the end of the *zōkaki-ron* boom in many respects. While taking into consideration Henry Havelock Ellis’s argument that masturbation does little harm to health, the guidebook explicitly set forth the medical risk of having sexual desire in youth, calling for strict disciplining of children. The emergence of medical studies on abnormal sexuality (*hentai*) in the 1910s–20s solidified the proposition that not only masturbation but sexual desire itself is harmful. The *zōkaki-ron* boom in the emergent phase of sexology in the late nineteenth century has been often overlooked due to these texts’ fluid and conflicting distinctions between science and fiction, knowledge and popular culture, and translation and creation. This paper argues that the “literary” features of the *zōkaki-ron* texts that mix diverse degrees of creative interpretations reveal locations of conflicting ideas across cultures. In particular, the mixture of creation myths and religious taboos presented a fuzzy continuum of facts and legends, extending from translation and its imaginary source texts as the center of discourses to marginal texts that merge fiction and scientific knowledge without traceable borders. The issues of translation and cross-cultural interpretive discrepancies framed the adaptation process of medical theories from the West in attempts to bridge differing concepts of taboos.

#### WORKS CITED

- Akagawa, Manabu. “Kaika sekusorojī no kenkyū.” *Shinshū daigaku bungakubu kiyō* 32 (1998). 21–39.
- Ashton, James. *The Book of Nature*. New York: Wallis & Ashton, 1861.
- Chiba, Shigeru. *Tsūzoku zōkakiron*. 3 vols. Tokyo: Inada Sakichi, 1876–78.
- Foote, Edward Bliss. *Medical Common Sense*. New York: Published by the author, 1870.
- Fowler, O.S. *Creative and Sexual Science*. Cincinnati: Jones Brothers & Co., 1870.
- Gika jōshi. *Irogoto no shikata*. Hiroshima: Kamine Zen’yū, 1883.



- Hashizume, Kan'ichi. *Danjo no gimu*. Tokyo: Gyokuzandō, 1879.
- Hollick, Frederick. *The Marriage Guide, or, Natural History of Generation*. New York: T.W. Strong, 1850.
- Hufeland, Christoph Wilhelm. *Macrobiotics: The Art of Prolonging Life*. Boston: Ticknor, Reed and Fields, 1854.
- Kamei, Shunsuke. "Nihon no kindai to hon'yaku." *Kindai nihon no hon'yaku bunka*, ed. by Kamei Shunsuke. Tokyo: Chūō kōronsha, 1994.
- Kūchōshi. *Daikaibutsu: eisei shōsetsu*. Tokyo: Kawaguchi Shinsaku, 1896.
- La'Mert, Samuel. *Self-preservation*. London: Published by the author, 1841.
- Meiji Bunka Shiryō Sōsho Kankōkai. *Meiji bunka shiryō sōsho*. Vol.9 *Hon'yaku bungaku hen*. Tokyo: Kazama shobō, 1959.
- Miyake, Torata. *Tsūzoku danjo jieiron*. Tokyo: Published by the author, 1878. 2 vols.
- Miyazaki, Ryūjō. *Zōka myōmyō kidan*. Tokyo: Makino shobō, 1887. 2 vols.
- Moriya, Jūjirō. *Tsūzoku zōkaki kigenshi: ichimei kon'in no michibiki*. Tokyo: Yamaki Yoshitoshi, 1880. 2 vols.
- Nadaoka, Komatarō. *Jinshin tainai seijiki*. Osaka: Hōseidō, 1889.
- Nakamura, Asakichi. *Irogoto shinan: jinzō shinpō*. Kyoto: Published by the author, 1889.
- Oda, Ryō. *Sei*. Tokyo: Sanseidō, 1996.
- Ogi, Shinzō, Isao Kumakura, and Chizuko Ueno, editors. *Fūzoku sei. Nihon kindai shisō taikai*, vol. 23. Tokyo: Iwanami shoten, 1990.
- Retau, O. *Die Selbst-Bewahrung: Aertzlicher Rathgeber Bei Allen Krankheiten Und Zerrüttungen Des Nerven Und Zeugungssystemes Durch Onanie, Ausschweifung Und Ansteckung. Nebst Einem Anhang Über Die Folgen Der Onanie Bei Dem Weiblichen Geschlecht*. Leipzig: Verlags-Magazin, 1901.
- Sango no Tsukimaru. *Jintai dōchū hizakurige* Illustrated by Nomura Yoshikuni. Kyoto: Fujii Asajirō, 1887.
- Seyama, Sakichi. *Danjo kōgō genron: kairaku hihō*. Kyoto: Nakamura Asakichi, 1888.
- Tsuji, Jōsuke. *Chōseihō*. [s.l.]: [s.n.], 1867.
- Ueno, Chizuko. "Kaisetsu." *Fūzoku sei*, edited by Shinzō Ogi, Isao Kumakura, and Chizuko Ueno. *Nihon kindai shisō taikai*, vol. 23, Tokyo: Iwanami shoten, 1990. 505–550.