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Tezuka Osamu's Circle of Life: Vitalism, Evolution, and Buddhism

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KNIGHT), UNDER THE AIR, UNICO, THE VAMPIRES, VOLCANIC ERUPTION, THE AGE OF GREAT FLOODS, AKEBONO-SAN, ALABASTER, THE AMAZING ANT, APOLLO'S SONG, APPLE WITH WATCH MECHANISM, ASTRO BOY, AYAKO, BA OLOGY, BLACK JACK, BOMBA!, BOY DETECTIVE ZUMBERA, BRAVE DAN, BUDDH TIVE KENICHI, CAVE-IN, CRIME AND PUNISHMENT, THE CURTAIN IS STILL BL EVIL OF THE EARTH, DIARY OF MA-CHAN, DON DRACULA, DORORO, DOTSUITA GHT, ELEPHANT'S KINDNESS, ELEPHANT'S SNEEZE, ESSAY ON IDLENESS O LM LIV

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G. CLINTON GODART

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On October 31, 1988, Tezuka gave a speech at his old school in Osaka for an audience of 1400 students. At this point, Tezuka had already been diagnosed with cancer, of which he would die less than two months later. On stage, he drew on a large sheet of paper several characters that appear in his manga and explained his ideas about them. About the Phoenix, the symbolic character of the manga with that title, he said that it symbolized life (*seimei*) itself, and he believed “it is something cosmical.” In the manga, on several occasions, the Phoenix is flying in space and at times seems to be one with the cosmos itself. Tezuka continued: “This character, Phoenix, possesses eternal life. And this life, this cosmos, pervades everything, and everything has this power of life (*seimeiryoku*): the earth, the sun, all have this life power. Everything is alive.”¹ Tezuka’s last message to the next generation was to respect life.

One welcome development in Japanese studies in recent years has been the recognition that manga and anime have to be taken seriously as important sites and media for the production and dissemination of culture. In the rise of manga and anime studies, much emphasis has been placed on Tezuka Osamu as the pioneer and “God of Manga.” Manga and anime studies, being a young discipline, has initially tended to overemphasize somewhat the pioneering

role of Tezuka Osamu but has since moved to place his work in a longer and more complex history of the development of manga. It is indeed important not to treat Tezuka Osamu's manga, similar to any creative figure in any genre, as *sui generis*, but what about the interactions between manga and other genres, such as philosophy, religion, and intellectual history? How can we understand Tezuka Osamu as a player in the intellectual history of Japan? Attention to the theme of life in Tezuka's work can provide some answers.

Tezuka himself described life (*seimei*, a term that refers to life as such, distinct from the life of an individual as in his or her "life," expressed in Japanese as *jinsei*), as symbolized by the Phoenix, as the central theme of all his work, taking many forms, such as the connections and comparisons between human and animal life, warnings against war, and the depictions of the complexities of medical intervention in life. Hence it is worth looking for the origins and environment of Tezuka's conception of life and its evolution. This inquiry will show that, although Tezuka's ideas were formed by experiences in his own life, his ideas are also to a large degree embedded in a wider intellectual history. Tezuka Osamu's conceptualization of life should be understood within a larger history of Japanese trans-war intellectual history and is a focal point where themes in science, philosophy, and religion converge. In this essay, I will focus in particular on how this conceptualization of life was formed through an interaction among ideas of Buddhism, evolutionary theory, and vitalism. This essay will also confirm that manga and anime are important media in the construction and dissemination of philosophical ideas concerning society, religion, and science, especially in postwar Japan.

In his autobiography, *Boku no manga jinsei* (1997, *My manga life*), and in several lectures, Tezuka described how experiences in his early life and adolescence led him to find life as the leading theme of his work.² Bullied in primary school, Tezuka found solace in reading about biology and collecting insects. He made many studies of animals, especially insects. "Osamu" was his real name, but he changed the way he wrote it in Japanese by adding the character for "insect." According to Tezuka's own story, what first opened his eyes to the theme of life were two dramatic experiences in adolescence. First, Tezuka experienced the devastating B-29 firebombing raids on Osaka, which left a lasting impact on his mind. It might be added that, while the atomic bombs have become the symbols of war trauma in postwar Japan, the firebombing

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was experienced by many more people, and although the atomic bombs are popularly considered the finale in the Asia-Pacific War, Osaka was bombed conventionally even after the nuclear attacks. Tezuka particularly remembered the great firebombing of Osaka in June 1945. When he approached the Yodogawa River, he saw an immense number of burned bodies floating in it: “It was the greatest shock in my life, and writing for forty years did not heal this.”³ One message Tezuka wanted to convey in his work was the horror and futility of war, and its potential to destroy life.

The second experience was during his training as a doctor at Osaka University, when he witnessed a patient dying. Tezuka came from a family with a long tradition of physicians, and this heritage and his own experiences found its way into the series *Black Jack* (1973–83, *Burakku Jakku*), which displayed a form of existentialism that comes out masterfully in the life-and-death choices the characters are forced to make. Tezuka’s existentialism was amplified and heightened by his physician’s knowledge and the profound embodied existence of the human subject. Tezuka remembered the dying patient as suddenly wearing a most beautiful and peaceful expression on his face, “like a Buddha.”⁴ This, he said, led to a larger realization: “There is something like a large lifeforce (*seimeiryoku*), and what resides in the human body is just one small part, one instant of this. Doesn’t the soul, or better, the life-body (*seimeitai*) leave the human body and go somewhere? Doesn’t it begin a new life? That is really what I thought. I don’t know if this is correct. But there, much more than before, I felt directly the mystery of life.”⁵ These two experiences led Tezuka to write manga about this “lifeforce.”⁶

Tezuka’s own account of the experiences surrounding the bombing of Osaka and his life as a manga artist give the impression that the discovery of life as a theme in his work was solely an attempt to overcome this trauma and to explore and transmit the lessons from these two experiences. There is no reason to doubt Tezuka’s account, but we should remember that his story was also carefully crafted. His description of these two experiences of human suffering and death, and his realization of a connection with and reincarnation to a larger existence bear more than a passing resemblance to Gautama Buddha’s experience of suffering and later awakening. Tezuka later wrote a manga series on the life of the Buddha, which, similar to his own experience, depicts the Buddha as gaining an insight into the transmigration to—and from—a core of life at the center of reality. Tezuka’s two experiences also express neatly his ideas about the nature of science and technology: the B-29 shows technology’s potential to destroy life, and the hospital shows its ultimate impotence and inability to save us from death. Tezuka believed that technological

progress could not alter the fact that we humans do not transcend our animal and mortal nature, hence his work is pervaded with skepticism toward “civilization” (*bunmei*).⁷ While not diminishing the impact of Tezuka’s two life-changing events, his discovery of “life” was probably not only a product of pure experience. The religio-philosophical contents, and the language Tezuka used to express his ideas, were not only a direct product of trauma but can also be understood as part of a larger history of twentieth-century Japanese thinking about biology, life, and religion.

Let us look at these themes in more detail, starting with one of Tezuka’s earlier works, *Metropolis* (1949, *Metoroporisu*). This story of creation of an artificial lifeform and consequences of that experiment clearly shows Tezuka’s skepticism of progress through technological change. The warnings about science and technology in *Metropolis*, which have since become common tropes, perhaps show Tezuka’s prescience, especially in his explorations of the possibly fluid boundaries between humans and robots. The story opens with an account of evolution by Dr. Bell, who maintains that, throughout evolution, certain species developed features that allowed them dominance but also caused their demise: the mammoth “became too advanced, and in actuality, as a result, they too, died out.” Dr. Bell thinks that humans might follow the same pattern:

Tens of thousands of years passed . . . in their place, animals, today called humans, began to conquer the land. Humans had one weapon—brain power—of which nothing was more advanced. And so, finally, human civilization reached its summit. However, might the day not come when humans also become too advanced and, as a result of their science, wipe themselves out?⁸

The message is repeated at the end of the story. The idea that, through technology, humanity has dug its own grave has of course been explored many times, but looking at it in the context of Japanese approaches to evolution, we can see that Tezuka’s critical view of technological progress was probably not only a direct product of his experience of war. Unknown to the casual and English-speaking reader, Tezuka’s theory has special relevance in Japan, as it is almost identical to the ideas of human evolution put forth by the biologist Oka Asajirō.

From the first publication of his *Shinkaron kōwa* (Lectures on evolutionary theory) in 1904, Oka Asajirō (1866–1944) was the bestselling biologist in prewar Japan, and he inspired a variety of thinkers, such as the anarchist Ōsugi Sakae (1885–1923), philosophers such as Miki Kiyoshi (1897–1945)

and Tsurumi Shunsuke (b. 1922), and given the similarities with his own work, it is unlikely that Tezuka had never heard of him.⁹ Oka, like Dr. Bell in *Metropolis*—basing himself more on the theory of orthogenesis than on natural selection—argued that every dominant lifeform developed features that, while initially beneficial, eventually overdevelop and become the very cause of its extinction. Oka predicted that, in the case of humans, it was bipedalism (the free use of hands) and intelligence that allowed for the eventual development of technology and civilization that allowed us to possess this paradoxical evolutionary power. Oka also warned of Nature possibly taking “revenge” against humans for the changes inflicted on her.

In this way, Oka Asajirō used evolutionary theory as a counterpoint to the Meiji ideology of “progress and enlightenment” (*bunmei kaika*). Despite the more familiar association of evolutionary theory with the ideology of modernization, expressed in the very translation of the term “evolution” into, literally, “progressive change” (*shinka*), the idea that biological and social evolution leads to inevitable retrogression and decline was widespread among intellectual circles in Japan since the late Meiji period. This was often inspired by Buddhist ideas of evanescence and decline but also by scientific theories such as that of cosmic evolution as developing from and returning to the nebular (based on the Kant-Laplace hypothesis). Many Japanese intellectuals argued that evolution was not really “progressive change,” since it was always accompanied, or inevitably followed, by “retrogression” or “devolution” (*taika*). Buddhist thinkers and philosophers, who were inspired by the ancient theory of Buddhist decline (*mappō*) and who questioned the idea of continuing “progressive change,” emphasized inevitable retrogression.

These religious and philosophical receptions of evolution resonate strongly in Tezuka’s works. Nowhere does this come to the fore more clearly than in *Phoenix* (*Hi no tori*), his magnum opus on which he worked intermittently from 1954 to 1989 but unfortunately never finished.¹⁰ As already mentioned, the central figure of the Phoenix was the symbol of the cosmic lifeforce itself and expressed Tezuka’s most deeply held and ambitious philosophical beliefs.

Let us have a closer look at *Phoenix*. The series has a complex configuration of time, with the first volume beginning at the dawn of history, the second taking place in a far distant future, then alternating between past and future, drawing ever closer to the present. Different characters come and go and are connected through rebirth. The character who keeps the entire manga together is the Phoenix—truly a powerful symbol. Of the Phoenix it is said that if one drinks its blood, one attains eternal life. The tragedy of the

stories is the lengths to which various characters go in their vain attempts to attain this eternal life, destroying others and themselves in the process, only to be reborn again. Tezuka shows how technology impacts human lives (as in *Metropolis* the theme of self-destruction appears again, this time in the form of an ultimate nuclear war), while the Phoenix and the basic facts of human life and strife remain unchanged. The Phoenix stands for life itself, which is one and eternal and united with the cosmos. Humans partake in this life, through transmigration in eternity but are all too often unaware of it, vainly and paradoxically seeking eternal life by attempting to kill the Phoenix. The fundamental and universal fear of death, the vain attempts to overcome death (such as through medicine and technology), all the while partaking in a larger eternal cosmic life, is in fact, Tezuka Osamu tells us, the human condition.

Phoenix explores the same theme as announced in the beginning of *Metropolis*, but on a much larger scale. Evolution plays a prominent role in the series, especially in the beginning. The first cycle of the *Phoenix* consists of two interlocking stories, one at the beginning of Japanese history, the second in the thirty-fifth century—the end of the human race. The few remaining humans live in underground cities. The main character, Masato, flees with his love, Tamami, a “nupi,” a kind of malleable organism that has taken the appearance of a human girl, to the earth’s surface, which is now covered in the snow of a nuclear winter. They flee to the dome of Dr. Saruta, a scientist who is attempting a last-ditch effort to recreate the species on earth but cannot find the secret of life. Earlier, the Phoenix has appeared to Dr. Saruta to explain that the “earth is sick,” and has to be healed. The earth, sun, stars, and planets, the entire universe, the Phoenix explains, is alive. It is a “cosmozone” (written with the compound “universe” and “life” [*uchū seimei*], accompanied by the furigana “*kosumozōn*”). The Phoenix explains that Saruta’s scientific efforts are in vain, that the disease the cosmos is suffering from is humanity’s civilization, and announces that a person will come to save the earth. A nuclear war erupts between the remaining metropolises, and all life, save for Masato, Saruta, one enemy of Masato, and Tamami, is wiped out. To simplify the story somewhat, everyone dies, except Masato. The Phoenix appears to him to show the true nature of the universe and tells him that he is assigned the task of the revitalization of the earth.

In a crucial passage that displays Tezuka’s speculative vision of the “cosmozone,” the Phoenix shows Masato the smallest elementary particle of the universe, which itself is structured like a solar system, and shows how at its nucleus is a living being. Going further into the cells of the organism, they again consist of particles. Then the Phoenix shows Masato the universe as a whole:

THAT THE PHOENIX SHOWS A BIOLOGICAL ORGANISM AT THE CENTER OF THE MATERIAL PARTICLES OUT OF WHICH THE UNIVERSE IS BUILT IS A CLEAR STATEMENT AGAINST PHYSICALIST REDUCTIONISM.

“Beyond the dimensions, the universe is not more than a particle. Universes assemble and form something similar to a cell. These cells assemble and form a ‘living being.’” From the smallest to the largest, the universe is a living being, the “cosmozone.”¹¹ The “disease” of the cosmos, the Phoenix explains, is the human race: “Having let the

human race be born and evolve, this evolution has taken a mistaken course.” Humanity has to go extinct and evolve once again. Masato realizes he has an immortal body and comes to understand it is his task to wait for and watch over the recurrence of the evolution of life on earth and the rebirth of humanity. Masato becomes “a ‘being’ who only watches over life that is slowly evolving;” his body disappears and he becomes a “supra-living body (*chō seimeitai*), transcending space and time.”¹² As life evolves again, Masato is venerated and treated by the new species as “Creator” and “God,” expressing Tezuka’s critical view of organized religion. Eventually, the Phoenix appears again, and explains to Masato that he has become “the living universe, the cosmic life / cosmozone.”¹³ The Phoenix invites Masato to enter its body, which he does, and inside finds his old love Tamami and merges with her. The story then returns to the beginning, when a human attempts to kill the Phoenix. The Phoenix laments that every time humanity evolves, it evolves wrongly, always “further developing civilization (*bunmei*), eventually strangling himself with his own hands.”¹⁴ The cycle ends with the Phoenix expressing hope that perhaps this time when man evolves “he realizes his mistake and uses life correctly.”¹⁵

In this story, we can discern several interlocking characteristics of Tezuka’s concept of life in *Phoenix*. First, life is cosmic. That the phoenix shows a biological organism at the center of the material particles out of which the universe is built is a clear statement against physicalist reductionism. In other words, the universe itself is alive; life is not a by-product of a material and otherwise dead world of physics, consisting of lifeless material particles. Life is at the core of its being. Second, the universe is a *cosmos*: alive, and structured *organically*, not *mechanically*. Tezuka’s universe is not a nineteenth-century machine but a living being. Further, the smallest particle is identical to the whole itself. Third, life evolves but does so in a circular way; after its destruction, life evolves again. Fourth, individual human lives partake in this larger cosmic life and after death transmigrate.

How can we understand this conception of life historically, especially in the intellectual history of Japan? Primarily, much of this narrative echoes

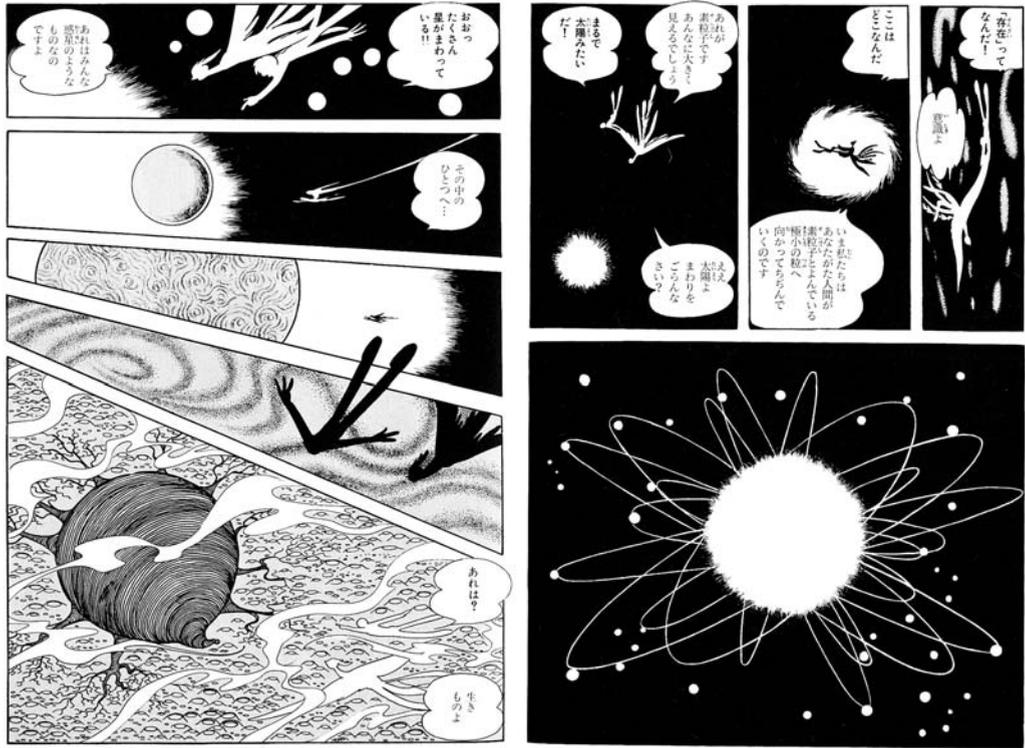


FIGURE 1. “The Phoenix shows Masato the life at the core of the particles of physical nature.” Tezuka Osamu, *Hi no Tori* (Phoenix), vols. 201–12, 362–65 of *Tezuka Osamu manga zenshū* (Complete manga works of Tezuka Osamu) (Tokyo: Kōdansha, 1987), 146–47. Used by permission of Tezuka Productions Co., Ltd. All rights reserved.

Buddhist cosmology, especially the idea that the smallest particle reveals or contains the whole (which can be found in the *Avatamsaka* or *Kegon sutra*), and transmigration theory. Tezuka Osamu, although critical of organized religion, was inspired by Buddhism, as can be seen in the *Buddha* series. In this work, Tezuka presents a more detailed vision of transmigration. The Buddha attains an insight into the nature of life as he follows the soul of a dying princess into the center of a cosmic life core, to which souls return and also from which souls are born again. However, Tezuka is not rehashing ancient Buddhist ideas. In conceptualizing his ideas, his choice of words is thoroughly modern and probably rooted in a larger history of Buddhist receptions of science and evolution in Japan.

In the Meiji period and afterward, Japan imported modern scientific thought on a large scale. There was no great “clash” between religion and evolution. However, while very few Japanese had problems with a view of nature as evolving, the idea of evolution raised the specter that life, mind, and morality had ultimately all emerged through a random process from material

building blocks and were therefore lifeless and perhaps meaningless. This went contrary to fundamental ideas of the nature of reality and life. The idea that nature consists of nothing more than physical building blocks and that evolution is a mindless, random process proved distinctly unpopular among many philosophical and religious circles in Japan. Among many intellectuals and religious figures, especially since the turn of the century, there was a marked opposition to the physicalist reductionism that seemed to be associated with evolutionary theory. This resistance to materialist metaphysics was due to the continuing influence in the modern period of the Buddhist idea that all of reality, sentient and nonsentient, possesses (or partakes in) the Buddha-nature (*hongaku shisō*), and of the Shinto idea of nature as being inhabited by manifold *kami*.

Hence, starting in the mid-Meiji period, Japanese intellectuals searched for ways to accommodate evolutionary theory within a nonmaterialist conception of nature. This was done through a revival of German Romanticism and idealism, as well as the revitalization of Buddhist theory. For example, one of the most important Buddhist thinkers who challenged the problem of evolution from a Buddhist perspective was Inoue Enryō (1858–1919). While Enryō fully accepted the theory of evolution and was keen to prove that Buddhism was compatible with it, he fought hard against the interpretation that accepting evolution meant embracing a materialist worldview. Enryō (and many of his contemporaries) favored a form of monism, coopted partly from German Romanticism, which held that mind could not be reduced to matter, and that mind and matter were like two sides of the same coin. In his 1897 *Against Materialism* (*Ha yuibutsuron*), Enryō proposed a view of evolution as emerging from a core of pure life-energy.

Tezuka Osamu's vision of evolution in a vitalist worldview, as put forward in *Phoenix* and *Buddha*, in which humans partake through transmigration, is remarkably close to Enryō's notion, especially as put forward in his *Reikon fumetsuron* (1899, On the indestructibility of the soul), a sister volume to *Against Materialism*.¹⁶ In this work, Enryō described a universe that, at its core, is a life-energy source from which human souls emerge and return after death: "If you know that the cosmos is a living thing and a spirited body (*katsubutsu reitai*), and that it is endowed with the highest and greatest spirit, then one should not doubt that the spirit we have is completely one part or one particle of it."¹⁷ And: "Looking at it from this perspective, there is no doubt that our death is the return home, return to the base, of a small spirit from the great spirit of the universe from which it has split off, the same as returning to one's hometown, not an extinction, but becoming the large and larger spirit

and continuing activity. Hence the spirit does not die.”¹⁸ Enryō explicitly uses evolutionary theory as proof that the world is “alive” and links evolution to transmigration.

Second, while Enryō was thoroughly a modernist, he and others after him questioned the idea of evolution as “progressive change” (*shinka*), arguing evolution encompassed both progression (*shinka*) and retrogression (*taika*). Inoue Enryō, just like Tezuka Osamu later, described a pattern of evolution and devolution. Evolution, according to Enryō, was not linear but circular.

I am unaware of any evidence that Tezuka Osamu read the work of Inoue Enryō, but the similarities are striking. Rather than a case of direct influence or coincidental discovery, the similarities between Inoue Enryō and Tezuka Osamu are perhaps better explained by the fact that the idea of evolution combined with vitalism and often transmigration have been very influential in Japan since the turn of the century and became a structural aspect in Japan’s subsequent Taishō and Shōwa intellectual history. Similar ideas can be found in the writings of the bestselling writer Koizumi Yakumo (Lafcadio Hearn) (1850–1904), Minakata Kumagusu (1867–1941), and the journalist and philosopher Miyake Setsurei (1860–1945). The ideas of evolution as a circular pattern of a primordial life force, rather than a random progress starting from lifeless particles, became very influential. This culminated during the interwar period in philosophy, art, and literature, into a boom of “vitalism” (*seimei shugi*) as the idea of a larger cosmic life in which humans partake.¹⁹ This trend seemed to be confirmed by trends in theoretical biology that posited that biological life could not be reduced or be explained by physics and chemistry alone. In philosophy, this trend is symbolic of the popularity of Henri Bergson in Japan, with the 1910s “Bergson boom.” Bergson proposed a view of evolution that was not materialist or reliant on natural selection. It was the elusive life-power of the “*elan vital*” that pushed evolution forward. While for French intellectuals Bergson was popular because he retained God in the process of evolution, for interwar Japanese intellectuals, it seemed to be an alternative to the dead world of physics and saw the universe as alive. Arthur Schopenhauer, whose natural evolution was the product of a cosmic Will, also became one of the must-reads of the era. While thoroughly modern, these ideas show the resistance to materialist reductionism and the interwar unease with modernity and the loss of the ideals of progress and civilization.

This vitalist conception of the universe resonated with older conceptions of nature in the Buddhist and Taoist traditions. While Buddhism was originally concerned with how to escape the meaninglessness and suffering cycle of life and rebirth, Buddhist discourse in Japan, especially after theories such

TEZUKA OSAMU'S VISION OF LIFE, OF A LIVING UNIVERSE IN WHICH AN ENDLESS CIRCLE OF EVOLUTION AND TRANSMIGRATION TAKES PLACE, AND HIS CONCOMITANT MESSAGE ABOUT THE DANGERS OF THE ILLUSION OF TECHNOLOGICAL PROGRESS, IS ONE VARIANT OF A SPECIFIC MODERN CONVERGENCE OF LARGER INTELLECTUAL TRENDS IN WHICH VITALISM, BUDDHISM, AND EVOLUTIONARY THEORY MERGE.

as those of Inoue Enryō, and when merging in the twentieth century with vitalist theory, developed an affirming attitude toward life (*inochi* or *seimei*). After the defeat in 1945 and the reinvention of Japan as a nation devoted to peace, this commitment to life intensified and was coupled to the message of peace. Today, Buddhist temples often display signs encouraging respect for life. The same can also clearly be seen in the new Buddhist religions. To give one example, Ikeda

Daisaku, the leader of Soka Gakkai, in a conversation with Arnold Toynbee on religion and evolution, said:

The entire universe, including our earth, is a life entity: it is *kū* [emptiness] which contains life. When the conditions are right for the tendency for life to manifest itself, life can be generated anywhere and at any time. Modern scientists suspect that there may be life on other planets. I interpret their suspicion as the first step toward the proof of the idea of the life-nature of the universe. I believe that the entire universe is a sea of life potentiality comprising infinite possibilities for manifestation.²⁰

Prewar vitalism transformed into a message of peace was also the main intellectual thrust in Tezuka's project. In this respect, it is worth noting that Tezuka did not commit himself outright to one camp in the debates in evolutionary biology concerning natural selection, competition, and the "struggle for survival." To give just one example, *Apollo's Song* (*Aporo no uta*) features an island where all animals live in harmony, having been brought there by a zookeeper who had fled the onslaught of war, and created a kind of Eden of mutual aid.²¹ But most times struggle illustrated between and within species is emphasized, often suggesting the need for this to produce a greater harmony in nature. Tezuka's nature was no utopia and, similar to Darwin's nature, the two poles of struggle and harmony in nature often stand in unresolved (or a creative) tension.

In the postwar era, prewar vitalism was also coupled with an ecological message, especially when the price of Japan's "high growth" on the environment became clear. The dissonance between industrial civilization and



FIGURE 2. "Gautama discovers that the universe itself is alive." Tezuka Osamu, *Hi no Tori* (Phoenix), vols. 201–12, 362–65 of *Tezuka Osamu manga zenshū* (Complete manga works of Tezuka Osamu) (Tokyo: Kōdansha, 1987), 101. Used by permission of Tezuka Productions Co., Ltd. All rights reserved.

biological evolution is put even more concretely in Tezuka's 1970–71 *Ode to Kirihito* (*Kirihito sankā*), a story in which polluted water produces a disease that causes humans to partially devolve to what seems like an earlier stage of evolution.²² In both *Metropolis* and *Phoenix*, humanity's greed drives the development of civilization and a disconnection from nature. Ultimately, this "mistake in evolution" makes humankind a disease in the larger living body of the cosmos.

In conclusion, we can say that Tezuka Osamu's vision of life, of a living universe in which an endless circle of evolution and transmigration takes place, and his concomitant message about the dangers of the illusion of technological progress, is one variant of a specific modern convergence of larger intellectual trends in which vitalism, Buddhism, and evolutionary theory merge. While Tezuka's self-description portrays this theme of "life" as a product of his two foundational experiences, it seems his ideas should be seen as part of a longer tradition of vitalism and circular theories of evolution, especially as formulated by modern Buddhist thinkers in their encounter with modern science. Tezuka's ideas also show the continuing resistance to the materialist worldview associated with evolutionary theory, the merging of evolution with vitalism and transmigration, and the continuing use of evolutionary theory to resist the ideology of progress through technological advancement. It would be interesting to see how and to what extent Tezuka's manga influenced postwar Japanese conceptions of nature. But given its massive circulation, Tezuka's manga undoubtedly formed an important link in the construction and dissemination of the interwar conceptions of nature and life in postwar Japan.

Notes

1. "Rasuto messēji 1: kodomo tachi e: mangaka Tezuka Osamu" (Last Message, to Children: Manga Artist Tezuka Osamu), *NHK Supeshiaru*, *Nippon hōsō kyōkai* 5 November 2006.
2. Tezuka Osamu, *Boku no manga jinsei* (My manga life) (Tokyo: Iwanami shinsho, 1997).
3. "Rasuto messēji 1"
4. Tezuka, *Boku no manga jinsei*, 76.
5. *Ibid.*, 77.
6. *Ibid.*, 75.
7. *Ibid.*
8. Tezuka Osamu, *Metropolis*, trans. Kimar Sivasubramanian (Milwaukee, Ore.: Dark Horse Comics, 2003), 12–13.

9. I have described the philosophy of biology of Oka Asajirō in more detail in “*Kokemushi kara tetsugaku made: seibutsugaku, shinkaron no tetsugaku no senkusha toshite no Oka Asajirō. Nihon tetsugakushi kenkyū*” (From *Bryozoa* to philosophy: Okasajirō, pioneer in the philosophy of the philosophy of biology and evolutionary theory) *Nihon tetsugakushi kenkyū* 4 (2007): 75–99.

10. Tezuka Osamu, *Hi no Tori (Phoenix)*, vols. 201–12 and 362–65 of *Tezuka Osamu manga zenshū* (Complete manga works of Tezuka Osamu) (Tokyo: Kōdansha, 1987).

11. Tezuka Osamu, *Hi no tori*, vol 2. (1967; Toyko: Kadogawa bunkō, 2004), 145–51.

12. *Ibid.*, 234.

13. *Ibid.*, 265.

14. *Ibid.*, 281.

15. *Ibid.*, 282.

16. Inoue Enryō, *Reikon fumetsu ron*, in *Inoue Enryō senshū* (Selected works of Inoue Enryō), 19:307–412 (Tokyo: Tōyōdaigaku, 1987).

17. *Ibid.*, 337.

18. *Ibid.*, 338.

19. See, among others, Suzuki Sadami, *Seimei de yomu nihon kindai-taisho seimei shugi no tanjo to tenkai* (Reading Japan’s modern period through life: The birth and development of vitalism) (Tokyo: Nippon hōsō shuppan kyōkai, 1996).

20. Arnold Toynbee and Ikeda Daisaku, *Choose Life: A Dialogue*, ed., Richard L. Cage. (London: Oxford University Press, 1976), 251.

21. Tezuka Osamu, *Aporo no Uta* (Apollo’s Song) serialized in *Shukan Shōnen Kingu* (1970).

22. Tezuka Osamu, *Kirihito Sanka* (Ode to Kirihito) serialized in *Biggu Komiku* (1970–1971).