THE MECHA THAT THEREFORE WE ARE (NOT): AN ECO-PHENOMENOLOGICAL READING OF *NEON GENESIS EVANGELION*[1]

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ABSTRACT

In the late 1960s, Japanese animation inaugurated a prolific science fiction strand which addressed the topic of mediated experience. In a context of transnational reception and consumption of anime, the "robotic" subgenre (particularly the one that will be called "mecha" in the 1980s, i.e., narratives of giant robots piloted by a human within) occupies a strategic place. By highlighting the

peculiar synergy between themes, forms of storytelling and "out-of-joint" consumption, the Japanese robotic animation series thematized and popularized content and perspectives on mediated experience that I define as "eco-phenomenological": "phenomenological" because (i) it reevaluates the quality of the subjective experience in its historical and biocultural context; "ecological" because (ii) it look at the environment as an intelligent system; and (iii) it proposed a multidisciplinary approach between the human sciences and the life sciences.

The article proposes an analysis of the forms of narration and reception of the anime series Neon Genesis Evangelion (1995-1996), in its ability to have intercepted, synthesized and internationally popularized in an innovative and almost unparalleled way, the complexity of the eco-phenomenological perspective. Views and epistemological approaches at the center of the contemporary scientific and cultural debate will be reconstructed, discussed and analyzed through the concepts of body, mind, environment and presence which are promoted in the Evangelion series.

1. PRINCIPLES OF SUPER ROBOT SERIALITY

In the late 1960s, Japanese animation inaugurated a prolific science fiction strand which addressed the topic of mediated experience. Inspired by Japanese science fiction prose (Nakamura 2007) and especially by the artwork of various successful manga, the "anime boom" (Clements and McCarthy 2015) spawned fictional worlds which dealt with the social, cultural and cognitive consequences of a uchronic and hyper-technological reality in constant tension among the nostalgia for the lost innocence and the hope for a salvific future, the return to nature and the dominion of technology, the new renaissance and a transhumanist dream, as an allegory of the paradigmatic shift faced by the post-war Japanese society (Levi 1996, Azuma 2009, Napier 2007, Bolton, Csicsery-Ronay and Tatsumi 2007, Nacci 2016):

> The rise of Japanese economic power in the 1970s and its economic decline in the United States led to an ambivalent fascination with Japanese attitudes toward development—the synthesis of robotic industrialization, neofeudal corporate culture, and the enthusiastic acceptance of new communication and simulation technologies in daily life. As Japanese investment and market share leaped worldwide, the future appeared to be saturated with Japanese elements, a Western perception distilled in *Blade Runner*'s enormously influential image of a futuristic Los Angeles that resembled Tokyo. Ridley Scott's 1982 film was the forerunner of japonaiserie in cyberpunk novels like William Gibson's *Neuromancer* (1984) and *Idoru* (1996), which took an adrenalized dreamscape Japan as their model for the future (Bolton, Csicsery-Ronay and Tatsumi 2007: ix).

While the cyberpunk imaginary was being saturated "with Japanese elements", major anime films like *Akira* (Katsuhiro Otomo, 1988) and series such as *Neon Genesis Evangelion* (TV Tokyo, 1995-1996) broke through and anchored the anime genre in the Western pop culture (Napier 2005, Pellitteri 2011, Steinberg 2012, Bolton 2018). So, Japan not only exported "imaginary media" to the West, but also real technologies that revolutionized global modalities of sound, audiovisual, and computer consumption, such as the Walkman and a variety of home video recording systems produced by Sony and Matsushita (Bordwell and Thompson 2010: 427-

28), without mentioning video game systems by Sega and Nintendo (Wolf 2007).

In this context of transnational reception and consumption, the "robotic" subgenre (particularly the one that will be called "mecha" in the 1980s, i.e., narratives of giant robots piloted by a human within) occupies a strategic place in the visual tradition of the post-war Japanese science fiction (Schodt 1988: 73-90, Napier 2007: 87, Nacci 2016: 13). On the one hand, because the narrative seriality of the "Super-robot" genre of the 1960s and 1970s helps initiate transnational consumption and collection of "multiple associated media products" (Lamarre 2009: xiii-xiv) as well as forms of "media mix" (Steinberg 2012) including movies, series, video games, manga, and toy robots, which drive the emergence of true "media franchises" within a now globalized "anime ecology" (Lamarre 2018). On the other hand, as Hiroki Azuma notes, it is the anime system itself that, since the 1970s, has educated authors and viewers/fans to privilege a form of storytelling and consumption based on an "animal drive" towards the accumulation and the exchange of information on the model of the "database" (Azuma 2009). Such is a characteristic that eventually became globally embedded in the transmedia (Manovich 2001, Jenkins 2006, Bolter 2019) and serial (Mittell 2015, Brembilla and De Pascalis 2018) forms of storytelling of the new millennium.

Drawing from Matt Hills' (2002) characteristics of "cult text" (authorship, deferred narration, and hyperdiegesis), Brian Ruh attributes the longstanding transnational circulation of some Japanese "media cults" to the paratextual, deferred, and transmedia nature inherent to the anime visual storytelling (Ruh 2013: 1-3). Within this framework, Ruh uses as a case study the transnational reception of the *Neon Genesis Evangelion* franchise (*Shin Seiki Evangerion*, lit. "New Century Evangelion", henceforth *Evangelion*) as an example of transmedia storytelling consciously constructed to activate "cult" dynamics of consumption beyond the Japanese national market.

2. NEON GENESIS EVANGELION: A "SERIAL SINGULARITY"

Produced by Gainax studio, *Evangelion* is in fact one of the most acclaimed transmedia sagas of all time, which notably began with a single season TV anime series in 1995. The series was a peculiarity in the Japanese serial tradition, seen as "violating" certain narrative clichés and renewing its aesthetic and consumption paradigms (Azuma 1996, Woznicki 1998, Napier 2007).

Evangelion's fictional universe is set in 2015, after a violent cataclysm at the dawn of the new millennium (the Second Impact) caused the melting of the polar ice cap and a change in the Earth's tilt. The climate change caused by the rising waters triggers a series of nuclear conflicts that leads to the death of three billion people. In the city of Neo-Tokyo-3, where people now live in a neverending Japanese summer, the saga tells the story of giant anthropomorphic mechas (the "Evas") and their pilots (the "childrens") who, under the leadership of a special department of the UN (the "Nerv"), fight to defend human civilization from the attack of the Angels: gigantic and mysterious shape-shifting entities to which it is attributed the cause of the Second Impact. Shinji, the fourteen-year-old protagonist of the saga, is the pilot of the Eva Unit 01, while his other peers, Rei and Asuka, are in command of the models 00 and 02. While the Nerv finds itself serially resisting the attacks of the Angels, a secret organization called Seele is designing the destiny of humankind by following an occult "Project for the Perfection of Man".

The *Evangelion* TV series, created by Hideaki Anno in his second work for Gainax after the good reception of *Nadia: The Secret of Blue Water* (NHK, 1990-1991) and aired on TV Tokyo, presents two main singularities. The first one is its unquestionable originality when compared to any previous manga character (as was the case for most robotic anime). Secondly, the Evas' design proposed a hybrid between two traditional mecha models: that of the "Super-robot", unique and sometimes sentient machines with supernatural powers and mutant abilities, inaugurated by *Mazinger Z* (Fuji TV, 1972-1974) and continued until 1980 with series such as *Steel Jeeg* (NET, 1975-1976) and *Future Robot Daltanious* (Tokyo Channel 12, 1978-1980); and that of the "Real-robot", a unit with a certain technological verisimilitude and mass-produced for military purposes, inaugurated by the *Mobile Suite Gundam* series (Nagoya TV, 1979-1980) and continued with *Patlabor* (Nippon TV, 1989-1990) and *Evangelion* (Nacci 2016).

This ambivalence is also reflected in the incongruent scansion of the narrative arc of the series, which represents the "founding" product of the franchise. If in its first part, the *Evangelion* series follows the classic structure of self-contained episodes (with the arrival, the clash and the annihilation of the monster through the "final blow" typical of the Super-robot strand); in the second part, the episodes progressively thin out into fragmented and unstructured forms of narration.

Instead of increasing the number of episodes or seasons, as one would expect from a semantically dense and narratively complex series like this, Gainax produced only 26 episodes as opposed to the previous Japanese standard made of 51. The result is a spurious storytelling, but rich in ellipses, flashbacks, dreams, cryptic dialogues, plot twists and visual remixes (difficult to reassemble even after repeated viewings), and further problematized by the ambiguous nature of the Evas: neither mecha, nor demons, but the prototype of a "new species" that will take the place of the humans according to the eugenic plans of the Seele. The series' semiotic strategy aimed at the "forensic fandom" (Jenkins 2006), confirmed by the inclusion in the last two episodes of some fandom stills of Rei that director Hideaki Anno incorporated in the season finale (Azuma 2009: 95). The stratagem, together with the collage of images taken from other episodes, composed a double episode with a "surrealist" cut that, more than a narrative conclusion, represents a raid in the unconscious of the protagonist Shinji. Violating the schemes of the great classic or cathartic narration, *Evangelion* proposes an open ending where "the problems cannot be tied up so carefully" and without the "return with the elixir" (Vogler 1992: 150), consciously launching the sprint for the multiplication of alternative endings through the two films *Neon Genesis Evangelion: Death & Rebirth* (Hideaki Anno, Masayuki and Kazuya Tsurumaki, 1997) and *The End of Evangelion* (Anno and Tsurumaki, 1997).

According to Susan Napier, the media specificity of the *Evangelion* series consists in having combined narrative and visual inconsistencies with equally "problematic" themes and concepts (such as the relationship with technological mediation) through a "striking visual style, largely architectonic, in which space, shape, and color play off each other to produce in the viewer a sensation that is disorienting and exhilarating at the same time" (2007: 108).

More recently, Ilaria De Pascalis has defined as "out-of-joint" a similar type of serial storytelling, emphasizing how a specific category of post-1980s TV series is characterized by "the importance given to visual spectacularization, to the intensification of emotions through the use of sensationalist formulas, as well as to sensory and affective pleasure, [...] in favor of an 'out-of-joint', fragmented and dislocated temporality [...] primarily aimed at questioning a traditional form of subjectivity" (De Pascalis 2019: 665). To analyze such a complex serial universe, De Pascalis proposes a "design-inspired" methodology which aims to (i) highlight distinctive puzzling passages within a series and (ii) to look at them as "scalar models" or "fractal units" for mapping out the (dis)organization of the whole narrative universe (2019: 661-63).

By assuming the peculiar synergy between themes, forms of "out-of-joint" storytelling and consumption typical of the

Japanese robotic animation, I will employ De Pascalis' methodology to analyze the narrative and thematic singularity of the *Evangelion* TV series. If, a few years after the television launch, reconstructing a linear narrative was impossible, nor separating an "official" story from the "derivative" ones (Azuma 2009: 95, Ruh 2013), yet the first and only *Evangelion*'s TV series of 1995-1996 represents a paradigmatic "scale model" of the whole media system in terms of topics, modes of narration and consumption. As I argue, this anime series is foundational to the transnational reception of the entire *Evangelion* media franchise, but it also represents an insightful case of contemporary "out-of-joint" seriality in terms of topics and storyworlding.

In particular, by innovating traditional structures of Japanese robot seriality, *Evangelion* has thematized and popularized content and perspectives on mediated experience that I define as "eco-phenomenological": "phenomenological" because (i) it reevaluates the quality of the subjective experience in its historical and biocultural context; "ecological" because (ii) it looks at the environment as an intelligent system; and (iii) it proposed a multidisciplinary approach between the human sciences and the life sciences. Therefore, my analysis will focus on some distinctive features of the character design and recurring passages in the episodes, in order to map out an eco-phenomenological reading of the whole series, and to shed light on its transmedia circulation and reception.[2]

3. THE POSTBIOTIC BODY

What is striking about *Evangelion*'s mechas is their distinct animalistic character design. Starting from the initial suggestions of Anno, the designers Ikuto Yamashita and Yoshiyuki Sadamoto thought of the Eva as a paradoxical anthropomorphic insectoid, equipped with mechanical "extensions" incorporated within a biological structure composed of internal organs, blood vessels, muscle fibers, epidermis, teeth and eyes. The character design of the Eva, still a singularity in the panorama of the mecha aesthetics, recalls on the one hand the technological imagery of the second European industrial revolution, already present in the cinematography of Hayao Miyazaki and later in Anno's *Nadia*. On the other hand, it refers to the demons of Japanese folklore, and is openly inspired by the "poetics of contamination" between man, animal and technique of Go Nagai's *Devilman* saga (NET, 1972-1973) and *Ideon* (Tokyo Channel 12, 1980) (Misté 2018: 355). By looking at the morphology of Eva-01 (Fig. 1), one can grasp the biomimetic attitude behind its design. Animal characteristics and peculiarities are in fact integrated in robotic technology and interfaced with the human pilot's sensorimotor apparatus, presenting us the Eva-children system as a real "postbiotic" hero. This term, used by the philosopher of mind Thomas Metzinger, defines those cases where the distinction between natural and artificial elements makes little sense. As a matter of fact, it addresses systems "which are neither exclusively biologi-

FIG. 1. THE FIRST ENCOUNTER BETWEEN SHINJI AND EVA-01. IN THE 1995-1996 SERIES, THE ESTIMATED HEIGHT OF AN EVA IS APPROXIMATELY 40 FEET.

2   The information on the technical-scientific bases and the design of the Eva that follows is taken from the vision of the series and the accurate reconstructions of fandom sites including www.evangelion.fandom.com. For the interest and constituency of research, I will not consider other possible readings of *Evangelion* (epic, esoteric, postmodern, gender-oriented, etc.) that are at the center of an endless fandom and, only in part, academic literature. An updated academic bibliography of *Evangelion* edited by the staff of "Anime and Manga Studies" is available at https://www.animemangastudies.com/2019/06/28/neon-genesis-evangelion-a-bibliography-of-english-language-scholarship/ (last accessed 26-02-21). For an updated review of the relationship between academic and fandom anime literature, see Pellitteri (2019).
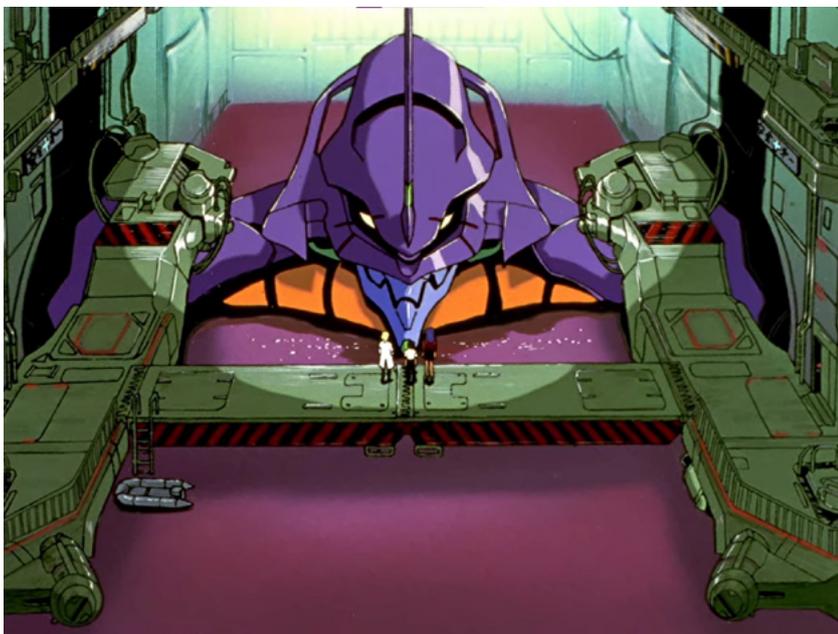
cal nor exclusively artificial", and among which we can include those robots that "use artificial control structures implemented through a fully biological substrate (e.g., in hybrid bio-robotics) - that is, human-created 'software' running on naturally evolved 'hardware' if you will" (2013: 3n5).

The carapace of the Eva-01, with its minimal and androgynous lines, bright colors and facial inexpressiveness (more similar to a praying mantis than to a warm-blooded humanoid), contrasts with the embodied experience of Shinji inside it, who finds himself "inhabiting", rather than piloting, a body-device that retroacts on his sensorium sending painful feedbacks and triggering real phenomena of post-traumatic stress.

While in other groundbreaking robot series, like *Mobile Suite Gundam*, the diegetic and technical backgrounds underlying the mechas were introduced in the first episode by a voice over narration, in *Evangelion*'s opening these data seem deliberately deferred and puzzled. In "Angel Attack" (1.01), Shinji is just presented as the new candidate pilot of the Nerv and is escorted by Misato to a subterranean military base where the Eva-01 appears to him as a gigantic robotic half-figure immersed in a purple liquid. "A face? A giant robot!", exclaims Shinji, who seeks for more info at Nerv's guidebook. "You won't find this in the orientation book", replies Nerv's head scientist Ritzuko, "This is the ultimate multipurpose decisive combat weapons system created by man. The *artificial human* Evangelion. Unit 01 of the series. Built in complete secrecy, this is mankind's very last trump card". The impossibility of Shinji to know the very nature of the Eva "series" and his role within the "military plot" directed by the Nerv seems to allegorize the spectator's serial experience of *Evangelion*: not (and never) fully aware of the details of the storyworld, but nonetheless fascinated with its narrative and thematic complexity.

The recurring image of Shinji who, after a fierce battle inside the Eva, wakes up unharmed in a hospital bed, showing himself debilitated in body and memory, can also be read as a guideline for the forensic serial spectator who has to move back and forth through the episodes to make sense of the storyworld. Moreover, this portrait of Shinji's body contrasts with that of the Eva who presents organic protrusions, wounds and, unlike the child, is unable to communicate its mental states but seems to share with him a common state of intimacy.

As this visual tension may allude to that between narrative and "animalistic drive" envisioned by Azuma, it also thematized the encounter with the animal senses by means of technology. By retrieving imaginaries from the previous series

Raideen The Brave (Nihon Educational Television, 1975-1976), *Evangelion* articulates the animal-technology bond through two conceptual metaphors: the cyborg-body and the postbiotic contamination. Those are speculative allegories that, in equal measure, fed the criticism to the "techno-science" approach proposed in those same years by Donna Haraway ([1985]1990, 1997). In fact, Haraway's cyborg-feminist theory promoted a vision of the relationship between nature, culture and technology as a *continuum*, inspired by sci-fi imagery but inspiring in turn new imagery. Proof of this is the "role" dedicated to the American philosopher within the cyberpunk franchise of *Ghost in the Shell* (1989-), which in 2004 featured "Dr. Haraway" among the characters of the second animated film of the saga *Ghost in the Shell 2 - Innocence* (2004). More recently, Haraway has returned to the subject, borrowing the concept of "holobiont" from biology to reflect on the endemically symbiotic nature and open to contamination of organized systems. Haraway writes, "my use of *holobiont* does not designate host + symbionts because all of the players are symbionts to each other, in diverse kinds of relationalities and with varying degrees of openness to attachments and assemblages with other holobionts" (2016: 60).

Haraway's model of the holobiont recalls that of the *Eva-children* system. This is why, starting from an apparently unbalanced relationship where the Eva prefigures the host and the child the "parasite" within it, it shows different degrees of relationality and mutual attachment that, as we will see, often lead the two "symbionts" to intertwine and merge into an indistinguishable and protean unity.

While the holobiontic nature of the body-cyborg is expressed through the open relationship between the Eva and the children, the contaminated and contaminating nature of *Evangelion*'s postbiotic organisms emerges particularly in the episodes recounting the attack of two "invisible" Angels: Iruel in "Lilliputian Hitcher" (1.13) and Bardiel in "Ambivalence" (1.18).

In episode 1.13, Iruel appears in the form of a rust on the walls of the operative base, and then implants itself in the Nerv supercomputer. This invisible bacterium, rapidly evolving from an organic virus to a computer virus, launches the self-destruction program of the base. In order to defeat it, Dr. Ritsuko stimulates the Angel (further evolved into a self-programmable "intelligent circuit") to complete the infection of the entire computer system so as to fulfill its drive to "apoptosis" (in biology, the form of programmed cell death).

In this narrative arc we can see a reference to the theme of self-induced apocalypse anticipated in *Akira*, continued in the

series *Serial Experiments Lain* (TV Tokyo, 1998) and *Paranoia Agent* (Wowow, 2004), and exposed in the various "endings" of *Evangelion*. The episode thematizes how the relationship of intimacy between postbiotic assemblages turns out to be anything but tending to homeostatic balance or mutual benefit. On the contrary, as Haraway postulates it by echoing the studies of biologist Lynn Margulis, symbiogenesis is a process that creates surprising changes and "problems" for self-organizing units (Haraway 2016: 92). Not coincidentally and according to Margulis' studies reported by Haraway, it is believed that it was bacteria and archaeobacteria that *enacted* the first forms of *symbiogenesis*, structuring themselves as "complex individualities" or "string figures" that provide the biological and theoretical model for forms of "extended synthesis" between ecologies and technologies, affect and

performance, in the sphere of the human and the non-human (Haraway 2016: 61-63).

Similarly, in episode 1.18, the new Unit-03 is infected by another Angel-bacteria. During a test session, the Unit-03 suddenly breaks contact with the base and the children, revealing mycelium-like filaments on its back and opening huge blood-red jaws. During the fight in the open field, the creature (now identified as Enemy Angel) is able to extend its limbs like a reptile and disarticulate its carapace like an insect. This ability allows it to immobilize the 00 and secrete an irritating pink fluid in an attempt to innervate its "ganglia" (Fig. 2).

In order to defeat it, the Eva-01 will manifest against the will of his children the same animal characteristics, reaching a state of "increased" presence that recalls, to some extent,
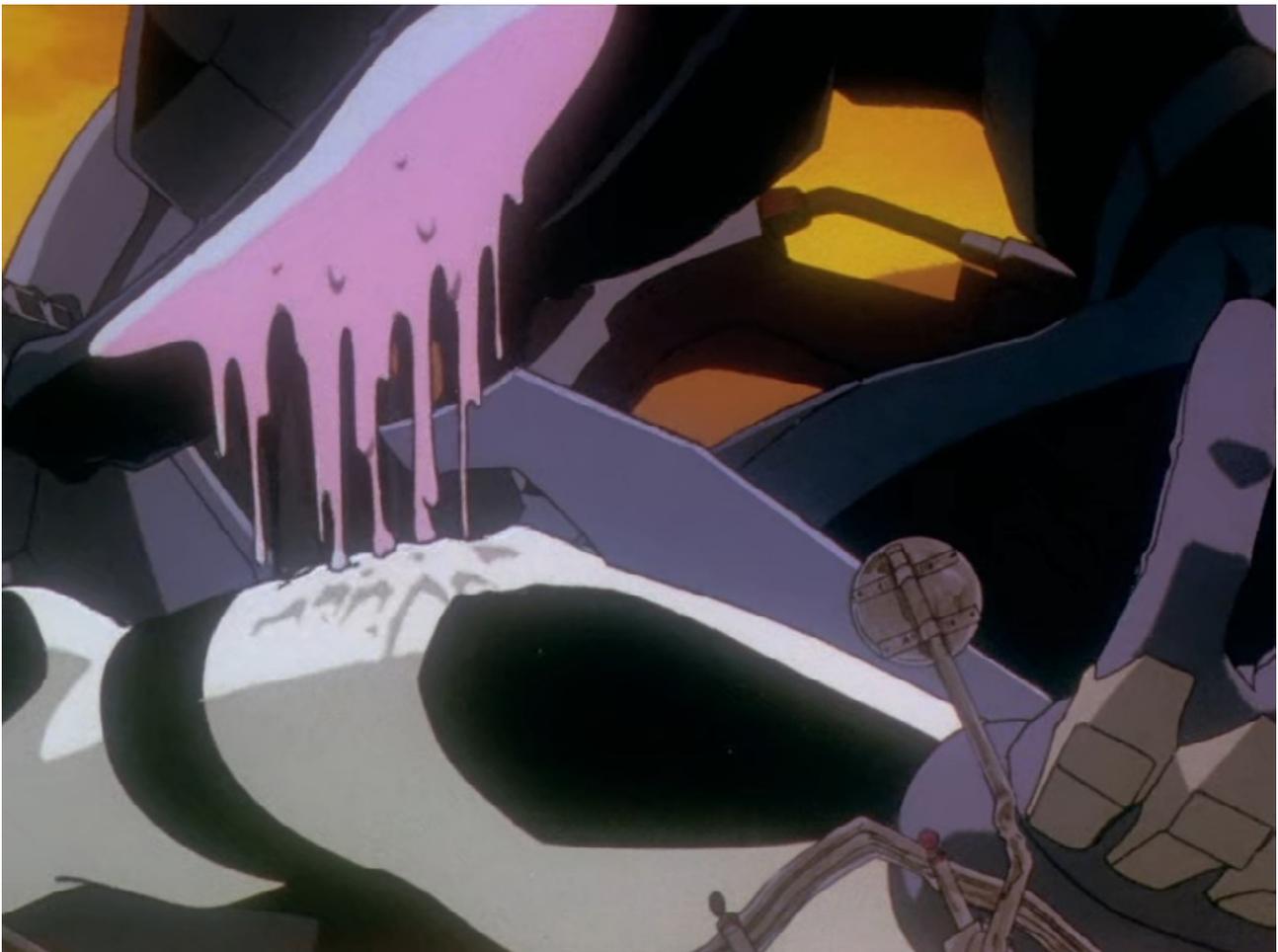

FIG. 2. A FRAME TAKEN FROM THE EPISODE "AMBIVALENCE" (1.18). EVA-03, POSSESSED BY THE ANGEL BARDIEL, DRIPS A CORROSIVE LIQUID ON THE IMMOBILIZED ARM OF EVA-00.

what in 1997 cyberpsychologist Frank Biocca will call "hyper-presence", on which we will focus in the sixth section.

These two episodes are decisive in showing the postbiotic and *sympoietic* richness of the visible and invisible bodies that populate *Evangelion*, unhinging the Cartesian metaphor of the "ghost in the machine" (Ryle 1949, Dennett 1991), rooted in the "traditional" imaginary of mecha, where, very schematically, the pilot evokes the conscious "mind" and the robot the performing "body". This is where the unmediated experience of real life is contrasted with the virtual or artificial experience mediated by robotics.

This is a vision of the body that, in the contaminated and contaminable characters of *Evangelion,* is certainly anti-Cartesian, but it no longer strives to "justify" the transitions between the biological and computer worlds (as in the case of Iruel and Bardiel's infections) or between the host and the symbiont (as in the Eva-children relationship), by presenting bodies that are "naturally" embodied in their postbiotic *continuum.*

The pivotal concept of the embodied theories developed in the 1990s is that experience of the world necessarily involves the sensorimotor system's understanding of the relationships between possible actions and the resulting sensory changes. It follows that "having" a body with eyes and hands in the frontal area, for observing and manipulating objects, has determined the evolution of specific "anthropomorphic" mechanisms of reasoning and language in human beings (Lakoff and Johnson 1999). This is the meaning of the words of the newcomer Asuka (the Unit-02 pilot of German nationality) when, in the episode "Asuka Strikes!" (1.08), she is forced to share her piloting capsules with Shinji: "I told you not to think in your own language!", she shouts at her peer when she can't synchronize with the Eva.

Notably it is only in the eighth episode (one third of the entire series) that we get a sense about the language-based connection underlying the Eva-children system which – backwardly – shed light to the sibylline definition of Eva-01 as an "artificial human" proposed in the first episode. Eva and the children seem able to synchronize by sharing a common language and body morphology, suggesting that cognition implies possessing a body, thus different bodies develop different cognitive processes. Especially, the progress of the symbiotic intimacy between Eva-01 and Shinji seems to strengthen along with the episodes and their "abandonment of the anime-like narrative" made of happy endings and savoir stories (Azuma 1996). This progression towards narrative and corporeal complexity makes *Evangelion* an effective model of a "postbiotic series" as well. States of "me-ness" alternating with deep, problematic and sometimes painful experiences of "we-ness" undergone by the fictional characters *mirror* those of the occasional viewers and fans, who try to decipher the cult media alone or together with the community of fans.

4. THE EMBODIED MIND

To ensure this complex postbiotic relation, the Evas possess sophisticated technical specifications. Each Unit is in fact equipped with an internal capsule called the Entry Plug in which the children, once on board, can innervate their bodies and minds with the Eva's, establishing, according to the authors, a neural connection between the A10 regions of the ventral tegmental area (VTA). In this area "the cells [are] soaked in dopamine, certain emotions are processed here; such as the thoughts of two lovers or of a parent and child. And it is the synchronization of the threads and bundles of A10 that splice pilot and Eva together; to become one entity, to fight. In other words, the power of love drives this weapon of mass destruction" (Sadamoto 1997). In cognitive terms, *Evangelion* imagines a neural interconnection device between the human sensorimotor apparatus and that of a giant cyborg. The result is a reciprocal increase in sensory capabilities and a distribution and/or extension of perception-action-reasoning processes outside of one's own "brain". Studies and experiments on cortical neuroplasticity applied to the use of sensory substitution devices in the medical field (Bach-Y-Rita et al. 1969, Bach-Y-Rita 2003) or avant-garde forms of cyborg art such as that of Stelarc (Smith 2005), already in the years of the first airing of *Evangelion* had provided more than enough evidence to show how the human being was biologically predisposed to integrate technology not simply at the "prosthetic" level but to "intertwine" it with the deep structures of the psycho-cognitive apparatus (Clark 2003, Parisi 2019). An idea underlying the so-called "extended mind" hypothesis (Chalmers and Clark 1998), which would become one of the four foundations of the contemporary *enactivist* approach to the study of cognition (Gallagher 2017).

But the statement of Sadamoto, which appeared as a comment on the first volume of the spin-off manga of *Evangelion,* also confirms the attention of the authors towards the "affective" turn of the new cognitive sciences. Just in the same years, Jan Panksepp indicated in the midbrain (the oldest part of the central nervous system shared by humans with vertebrates) the presence of seven innate emotional systems that regulate the foundations of mammalian agentivity (Panksepp

1998). Similarly to Haraway, but from an analytical perspective, Andy Clark also used the metaphor of the "cyborg" to define the plastic relation between mind, body, and technology that, in the course of human biocultural evolution, has made us true "bio-technological symbionts" (Clark 2003: 59-88). His hypothesis that the mind can extend beyond the body by integrating extra-neural devices and circuitry (from the "white cane" used by visually impaired people to the most recent "virtual assistants"), suggests a vision of the cognitive mind as "naturally" mediated by the proactive and biunivocal relationship with the body and environments (real, virtual and imaginary). This perspective is embodied in the extended circuitry established between the Eva and the child, connected through a sort of amniotic fluid, called "LCL", in which the pilot, once within the Unit, is completely immersed. A relationship of bio-chemical and umbilical nature, related to the topics of abjection and the "monstrous feminine" (Kristeva 1982), which is revealed in the course of the series and goes back to another *topos* of the super robotic strand of the Seventies (Nacci 2016: 156-157). In fact, another "revelation" made during the episodes, is that a maternal consciousness lives inside the Evas, for they can establish an emotional feedback loop only with young motherless teens (as in the case of Shinji, Rei and Asuka). The LCL is the only "medium" for human-machine interconnection that, at the expense of "conventional" cockpits, rather advances an eco-phenomenological conception of medium as "a playground within which experience, mediated or non-mediated, is made possible through the co-dependence between perceptual and environmental dispositions" (Gatti 2019:110) and imagines in audiovisual terms the human-machine relationship as the building of "affective niches" in the wake of the mother-infant relationship (Carocci 2020).

The medium imagined in the *Evangelion*'s world does not just achieve a radical form of mental extension but also recalls what neuroscientist William Hirstein has referred to as "mindmelding". Hirstein has in fact hypothesized that being able to connect in some way the prefrontal lobe of brain A (responsible for unconscious cognitive functions) with the posterior cortex of brain B (responsible for conscious executive processes), could allow the agentivity A to experience the consciousness of B (Hirstein 2012). This would seem to be the neural interconnection strategy allowing Shinji not only to feel and control the Eva's body, but also to receive painful sensory feedbacks whenever the mecha is hit or damaged.

Ever since the first battle with the Angel Sechiel in "Angel Attack" (1.01), the process of mediating with the Eva is indeed problematic, intermittent, and very painful. Thus, when Sechiel crushes the Eva-01's right limb, Shinji instinctively grabs his own human arm, which he feels shot through with an agonizing jolt of pain. "Take it easy!" – says the tactical base over the radio link – "You feel pain but it is not grabbing your real arm". The paradox of a mind perceiving real sensations through a fake body is not only another great cyberpunk *topos*, but has provided the basis for neuroscientific experiments that have brought to light the "phantasmal" interplay between mind and body.

Vilayanur Ramachandran (2003) studied neuroplasticity in patients affected by perceptual deficits such as prosopagnosia (a neuronal disorder that prevents face recognition) or in people who had undergone the amputation of a limb, offering interesting neuro-phenomenological case studies on the phenomenon of phantom limbs, blind vision and synesthesia. As a result, these cases consist in an exemplary demonstration of how high degrees of neural re-mapping are possible even in adulthood. In particular, by simultaneously stimulating a part of a subject's body and an artificial reproduction of it (a rubber hand, but also a VR version of the same), if the subjects focus their visual attentions on the phantom limb, after a few seconds they will experience the strange sensation that their real limbs are actually the phantom ones. By employing robotics and VR technology to make more accurate and radical experiments, scientists have additionally demonstrated that the body is a phantasmal construction of the mind, but that through the same principle states of out-of-body experience or body-swap can be easily elicited even without the aid of brain-machine interfaces (De Oliveira et. al 2016). This attitude of "embodied transcendence" peculiar to mental neuroplasticity is thematized by the painful interfacing between Eva and children, and visualized in *Evangelion* through the numerous juxtapositions between the face of Eva and that of the pilot. Through the use of cross-fades, the director evokes a dimension of emotional and intentional superimposition, while recoloring the faces with hyper-saturated and sometimes psychedelic colors suggests states of estrangement and mental transcendence (Fig. 3).

In other cases, it is instead the LCL as an interface or "post-digital membrane" (Pepperell and Punt 2000) that is used by director Anno as a color filter to be applied to the children's bodies so as to emphasize their mental mediation with the Evas. By resuming the study of the "electronic presence" in the filmic experience elaborated by Vivian Sobchack (1990), Bolton analyzes how the superimposition of semi-transparent interfaces or head-up displays on the face

of the protagonists is a typical strategy of sci-fi anime aesthetics linked to the endemic and problematic mediation at the base of postmodern subjectivity (Bolton 2007). As Bolton argues, while characters see and act through a "transparent" interface with their robot or device, we, as spectators, can observe the mediation from the outside, glimpsing the data and digital images of the HUDs superimposed on the pilots' faces (Bolton 2007: 134-135). This is a paradoxical "third-person subjective camera" that *Evangelion*'s visual and narrative lexicon also makes use of by showing numerous semi-transparent interfaces to connote the hypermediation of the characters, but still using as many fades and space-time ellipses to develop forms of hyperdiegesis.

But the Eva-children media experience is completed (and complicated) by a third "external" element, represented by a trio of bio-computers (called "Magi") corresponding to three aspects of the personality of the scientist Naoko Agaki (late designer of the computer system), later revealed by Ritzuko in episode 1.13. The Magis composed the AI that monitors, stabilizes, and adjusts the Eva-children's neural interfacing *on-the-fly* in order to reduce feedback delays; a function Grush (2004) called "emulator circuitry" in robotics jargon. Data from the emulation of the Magi is expressed either on the translucent displays of the children (as in the cases mentioned by Bolton), and also on the giant "holoscreens" of the Nerv's operating base.

Here, through a "synchronization rate" expressed in percentage, the Nerv tactical staff coordinated by two women, Major Misato and Dr. Ritsuko, can monitor the degree of "transparency" of the Eva-children mediation and stay in radio contact with the pilots to inform them of what is happening inside and outside the Eva. In addition to monitoring other vital parameters, the base is able to limit neural feedbacks and force direct control of the Eva through the "Dummy System", a kind of autopilot that excludes the intervention of the child. It is only when the rate of synchronization reaches or exceeds 100% that a true form of "mental fusion" is established, a state which goes beyond even the "mindmelding" theorized by Hirstein.

FIG. 3. FRAME TAKEN FROM THE EPISODE "THE BEAST" (1.02). THE FACE OF EVA-01 (PRESUMABLY UNCONSCIOUS) FADES INTO THE "PSYCHEDELIC" FACE OF SHINJI, WHO AWAKENS THE EVA BY OPENING HIS EYES WIDE.

It is relevant to note how the theme of postbiotic fusion is linked to forms of narrative diradiation and confusion that intensify as the relationship between Shinji and the Eva-01 becomes more complex and the boundary between reality and virtuality, intention and action, *me-ness* and *we-ness* becomes indistinguishable. An example of such can be seen in the sequence of "Weaving a story: oral stage" (1.20), in which Mitzuko, Rei and Asuka ask Shinji's mind to join them, while the boy's body, after reaching a 400% synchronicity rate, was absorbed within the LCL of the Unit-01 and undergoes a real out-of-body-experience: "Do you want to become one with me? One in body and soul. It will be a very, very pleasant thing, you'll see", repeat the three women within a cross-montage that echoes the aesthetics of Fig. 3 and leads to Shinji's unexpected "expulsion" from the core/uterus of the Unit-01: once again, he revives unharmed. This unexpected outcome has induced some fans to interpret the irrational and animalistic behavior of Evas (labelled as "berserk mode") as a manifestation of a maternal soul which takes control of the Eva in order to save their children.[3] Other fandom speculation regards the

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3   See https://evangelion.fandom.com/wiki/Yui_Ikari#Yui_as_Unit-01 (last accessed 15-04-21).

very nature of Rei Ayanami (which in episode 1.23 is discovered to be a clone) and the ultimate "meaning" of the season finale (does Shinji really save the humankind or it's just a compensative dream? Or even something else?). What is relevant is the capacity of a 24-episode TV series ended in 1996 to have instantiated one of the most long-standing "endlessly deferred narrative" (Hills 2002: 101) of contemporary media ecology. With this term Hills refers to the serial praxis of postponing narrative solutions, encouraging fans to scrutinize episodes and other transmedia contents for clues. A serial phenomenon only comparable with *Twin Peaks* (ABC, 1990-1991; Showtime, 2017) which analogously ended its *complex soap opera* after 27 years from its first airing. In his analysis of David Lynch's successful serial gamification of Laura Palmer's mistery, Smith concludes "a television/transmedia producer should incorporate strategic gaps into a core narrative and reserve these gaps to be filled in or better understood through narrative extensions" (2009: 51). Analogously, while "database consumption" of the *Evangelion* series has led to the creation of "real" *Evangelion*'s databases and wiki pages which are far from being de-structured,[4] the 2008 announced (and long-awaited) *Evangelion: Final* has been released in Japanese theatres on March 8 2021 with the title *Evangelion: 3.0+1.0 Thrice Upon a Time* (Hideaki Anno, Kazuya Tsurumaki, Katsuichi Nakayama and Mahiro Maeda). Notably, this ultimate "gap filler" comes after 25 years from its first ending.

5. THE SYMPOIETIC ENVIRONMENT

As anticipated, in the same years in which the first Evas were imagined and animated, cognitive science became more aware of the experience of the subject located in a biocultural environment. "Outdated" concepts such as *Umwelt* (world-environment), in the meaning given by the ethologist Jacob Von Uexküll ([1934] 2010), revived in authors such as James Gibson for theorizing an ecological perspective

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4   In 2007 Gainax Studio embarked on another film saga entitled "Rebuild of Evangelion" consisting of three animated feature films and which should have ended by 2015 with a fourth and final episode that, after numerous postponements, (the last of which due to the Covid-19 emergency) was released in 2021. Pending the epilogue of the saga, in February 2015 the animated 3D short film *Evangelion: Another Impact* (directed by Hideaki Anno himself) was distributed online. The objective was to capture the great transnational interest still underway towards the saga by recalling some images and situation of the 1995-1996 series. In particular, the 3-D Eva protagonist of the short film, among other quotations, resembles an analogous "state of confusion" showed during the activation tests of Eva-00 in the 1995-1996 series.

FIG. 4. FRAME TAKEN FROM THE EPISODE "THE BEAST" (1.02). EVA-01 (RIGHT) PENETRATES WITH ITS HANDS INSIDE THE ANGEL'S A.T. FIELD, AN ICONIC SCENE THAT HAS BECOME THE THEME OF NUMEROUS ACTION FIGURES AND ILLUSTRATIONS.

on perception. It was no longer a "private" experience, but a real perceptual system distributed and embedded in the environment (Gibson 1979: 111). In summary, the so-called "Umwelt theory" is based on the assumption that the subjective experience of a creature is co-dependent on the invitations to perception and action provided by the surrounding environment (*affordances*), thus creating a subjective "bubble" that becomes precisely the creature's *world-environment* where it perceives and acts accordingly. This is the reason why different species can inhabit the same space, but not the same *Umwelt*. In order to intersect these worlds, a medium is needed. For instance, the spider's web connects the world of the arachnid with that of the fly: the web is elastic enough to imprison the fly and strong enough to serve as a stepping-stone to the spider's attack, thus forming a shared and "open" *Umwelt* (Agamben 2004: 42).

These are theories that have revived AI studies and built the theoretical basis for the construction of real proactive robots (Nolfi 1998, Clark and Grush 1999) capable of "dealing with unpredictable events in an environment or niche without recourse to an external designer" (Haselager 2007: 64), and which we find anticipated in the character design of the Evas.

Resembling an insect's carapace, the outer armor of each Unit is characterized by a specific morphology and colors. Moreover, the Evas can release a kind of luminescent aura called "Absolute Terror Field" (A.T. Field), meaning the

"absolute" power of the mind extension in the world as well as the "terrifying" mental barrier which defines the Self from the Other. Basically the A.T. Field is a force field that can become a weapon, a defense shield, or an elastic membrane that is able to intersect (and pierce) the opponent's force field. The visualization of the A.T. Field as a kind of luminous spider's web (Fig. 4) offers an effective representation of the *Umwelt* as a circle of perception-action extended beyond the physical limits of the body as well as an intersubjective *medium* among different *Umwelten* or, as Metzinger hypothesizes, a tool for building new and more shared ones. In fact, according to the German philosopher, a consequence of the progressive use of humanoid AI in virtual reality environments could lead to the birth of a *Lebenswelt*, a "natural" inter-subjective perception of *togetherness* that would emerge in AIs from their relationship with the human and non-human avatars that inhabit these environments (Metzinger 2018: 14).

In our case, it would be plausible to imagine that the agencies of the Evas and the Magi, in their neural circuitry with the children and the tactical base, could "naturally" perceive themselves as part of a *Lebenswelt* determined by the coexistence of more *Umwelten* in the same self-organized system.

At this point, however, it is worth remembering that in *Evangelion* this struggle between complex environments is located within a larger ecosystem that, as anticipated, has been compromised as a result of a catastrophic climate change. On the one hand, we find the neverending summer: with the chirping of the cicadas that punctuates the sound carpet of the whole series, and the static long shots that transmit its atmosphere of cognitive and narrative thinning. An example of this is Shinji's 48-second long still frame at the train station while he is undecided whether to stop piloting the Unit-01 or return to Misato waiting for him (Fig. 5).[5]

On the other hand, we discover a militarily advanced Neo-Tokyo 3, able to model its topography through a system of "retractable skyscrapers": to save the population, but even to offer shelter, weapons or access routes to the Evas which, from the tactical base located in the underground, emerge on the surface in case of Angels' attack.

The Forum of the Athenian City as a "subjectivity device" (Deleuze [1989] 2007: 20), or the modern metropolis as a "hyper-device" for the citizen-spectator (Hansen 1991), was questioned at the turn of the new millennium in the face of an urban structure. It was modelled on the "decentralization of points of presence" and suited for a subjective experience defined as "nodular" but regulated at the rate of access, prophylaxis, default options and *mobile* device algorithms (Mitchell 2003: 144).

The very environment of Neo-Tokyo 3 therefore appears as a hyper-connected and sympoietic ecosystem, but with a medieval lifestyle: perched within the retractable walls of a perennial state of emergency. When Shinji and his companions do not socialize in the school's disciplinary device, they walk through the deserted streets of a sultry and demotivating endless summer that portrays the characters devoid of depth and crushed on the ground.

FIG. 5. THE 48-SECOND STILL FRAME OF THE EPISODE "SHAPE OF HEART, SHAPE OF HUMAN" (1.20) DEPICTING SHINJI (TOP) AND MISATO (BOTTOM) WHILE A SPEAKER ANNOUNCES THE ARRIVAL OF THE TRAIN.

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5   The poetics of the "still image" is one of the salient features of the direction of *Evangelion*. Other images of this kind, which have become cult in the fan community, are the fixed 53-second shot of Rei and Ayanami inside the elevator in the episode "At Least, Be Human" (1.22) and the still image preceding the death of the Angel-*children* Kaworu by the hands of Eva-01 in episode "The Final Messenger" (1.24).

FIG. 6. CHARACTER DESIGNS OF NINE ANGELS FEATURED IN THE *EVANGELION* SERIES OF 1995-1996. IMAGE TAKEN FROM THE ARTBOOK *NEON GENESIS EVANGELION ARTBOOK (NEWTYPE 100% COLLECTION),* EDITED BY YOSHIYUKI SADAMOTO (KODOKAWA SHOTEN, 1997).

In the episode "A Human work" (1.07), in which the human responsibility of the Second Impact is revealed, another still image shows the sunken ruins of the old Tokyo, while Misato, flying over the water desert, exclaims: "It's hard to think that this was the great metropolis called the city of cherry blossoms". After the Anthropocene, the era of exploitation of the Earth by human beings, *Evangelion*'s intersubjective and multispecies environment has the merit of having also problematized the advent of that new subterranean, fungiform and "compostable" era, renamed "Chthulucene" by Haraway (2016: 51-57). This is a term composed of the Greek roots *khton* ("earth") and *kainos* (meaning "now" or "new") to indicate a space-time where one "stays with the trouble" of an Earth now damaged and wounded by the Anthropocene and populated by "Chthonic" creatures ("as replete with tentacles, feel-

ers, digits, cords, whiptails, spider legs, and very unruly hair"). Furthermore, Haraway concludes that monotheistic societies have traditionally tried to exterminate all chtonic creatures (Haraway 2016: 2). The character design of the mysterious and gargantuan Angels against which the Evas struggle (Fig. 4) seems to embody the model of the Chtonic creature to which, as we will see, even the Eva in certain circumstances seem to adhere. More in general, it completes the picture of an open, complex and at times mysterious ecosystem, which makes *Evangelion* still today a precious table of philosophical and scientific confrontation of eco-phenomenological perspectives.

6. **THE ENHANCED PRESENCE**

"It's safer than a wildly dangerous weapon that can go out of control and go on a rampage at the drop of a hat, I'd say. Weapon that can't be controlled is utter nonsense... It's like hysterical women." These are the manager's words of a competing corporation to the women at the head of the Nerv base who rightly defend the animal and affective component that moves the Eva.

His short-sightedness can be found in reality, too. The manufacturing of the first military robots like *BigDog* by Boston Dynamics in 2004 was in fact inspired by supposed animal characteristics. By designing a military dog-robot as a quadruped machine, military industries would to some extent "compensate" humans from ethical and moral responsibilities in their warfare by addressing military operations to an inhuman agency (Braidotti 2014: 133-134).

That of mechanics animalization and animal mechanization is another distinctive path of the techno-science of the twentieth century. "Animals – and their ability for instinctive, almost telepathic communication – question the primacy of human language and consciousness as an optimal mode of communication", asserts Akira Mizuta Lippitt (2000: 2), according to whom the figure of the animal, disappeared from the modern metropolitan environment, is progressively re-located in the visual media system, including Japanese animation works.

The marked and uncontrolled animality of the Eva is certainly a metaphor for this problematic tension between an openness to new forms of consciousness, self-awareness and philosophically "animalistic" and cognitively "altered" presence. Yet, it also concerns their exploitation for military, economic and eminently anthropocentric purposes. Precisely,

it was the particular sense of echo-location - the ability of some animals to orient themselves and locate external bodies based on the echo of ultrasounds they themselves emitted - combined with an all-anthropocentric vision (White 2013). These features led the USSR and the United States to train dolphins for military use during the Cold War.

In particular, the manager's criticism refers to the Eva's ability to exclude control of the pilot and tactical base, acting independently and revealing powerful, as well as uncontrolled, wildly animal skills. This is a state of altered presence that the Nerv calls "berserk" (*bousou*, literally "out of control" but also "fugitive"), during which the Eva's carapace deforms and disarticulates, showing truly bestial traits, fighting skills and emotions.

While in past tradition some super-robots could transform into animals by reassembling their mechanical components *(Raideen, Voltron,* etc.), in the Eva animalization this process bursts as a phenomenon of abject metamorphosis: nauseating and repulsive, but also adrenaline-pumping and visually attractive. An alteration of the psycho-physical state that *children* within the Eva seem to live, by going into a state of trance or becoming "possessed" by its animal fury. It is no coincidence that among the innate emotional systems indicated by Panksepp, "rage" is "aroused by frustrations and attempts to curtail animals' freedom of action [...] The RAGE system invigorates aggressive behaviors when animals are irritated or restrained and also helps animals defend themselves by arousing FEAR in their opponents" (Panksepp 2011: 1799). A system common to humans and mammals that, according to Panksepp, can be inhibited (by blocking some neurotransmitters or administering opioids) and that is linked to the development of "high-level" psychological states such as irritability, resentment and anger.

Similarly, in *Evangelion* the berserk mode can manifest spontaneously during borderline situations of stress and psycho-physical coercion, or it can be induced by the tactical base by activating the Dummy System (as is the case in the aforementioned scene of Bardiel's attack on episode 1.18). More generally, the series shows a vast sample of berserk situations, winking at the cinematic "body

horror" (Williams 1991) and dynamizing the shots with copious jets of blood, secretions and dismemberments (Fig. 6).

This *recursive remix* of this canonical situation is certainly one of the main features of the series and provides another "scale model" for the franchise. In fact, the berserked Evas become iconic images in the *Evangelion* ecology, and, as within the episodes of the series, has been remixed throughout different media (films, manga, action figures, etc.).

Among the various scenes showing the Evas in *berserk mode,* I am going to focus on that of the episode "Introjection" (1.19). These will later be remixed in the films *Death and Rebirth* (1997) and *Evangelion 2.0 You Can (Not) Advance* (Anno, Masayuki and Tsurumaki, 2009), which provide several endings, reverberating "forensic" and hyperdiegetic fascinations within the entire media franchise too. The three versions resemble the same starting situation: during the fight against the angel Zeruel, the Eva-01 has its left arm cut and, when apparently shot to death, it deactivates the neural bond with the *children,* remaining helpless under the slashes of the enemy. In the series, the director shows Shinji disconnected from the Eva who, within the Entry plug, begs the Unit-01 to wake up. After a few seconds of waiting, as Zeruel is about to violate the capsule by inflicting the *coup de grace* on Shinji, the Eva's eyes suddenly light up.

FIG. 7. FRAME TAKEN FROM THE EPISODE "AMBIVALENCE" (1.18). THE EVA-01 IN *BERSERK MODE* DISMEMBERS THE BODY OF THE EVA-03 POSSESSED BY THE BACTERIUM ANGEL.

FIG. 8. FRAME TAKEN FROM THE EPISODE "INTROJECTION" (1.19). THE EVA-01 IN BERSERK MODE TAKES ON AN ANI-MAL-LIKE CONNOTATION.

After pushing the enemy away, the Unit-01 opens its jaws and throws a frightening roar to the sky. Quickly regenerating the severed limb, the Eva attacks and kills the opponent by devouring its energy core (a kind of pineal cell located in the center of the chest, called the "S2 engine"). While in the episode "The Beast" (1.02), the battle of Eva-*children* in berserk mode is told through a series of flashbacks of Shinji in the aftermath of his awakening in the hospital. In episode 1.19, we witness the metamorphosis "in real time", where the Eva recalls the posture and verses of a mammoth goril-la-cyborg (Fig. 7).

Here, as in the 1997 film version, only at the end of the battle do we discover that Shinji's body has been absorbed by that of the Eva which, after devouring the Angel, frees it-self from part of its carapace ("A constricting armor", Ritsuko admits), revealing organic parts hitherto unknown even to characters and spectators. An experience, that of berserk, that cyberpsychology would define as a state of "hyperpres-ence" to indicate the ability that a highly immersive medium (such as some virtual and mixed reality environments) has to "create a greater intimacy than face-to-face communica-tion" (Biocca 1997). In this case, it is the intimacy between Eva and *children,* which, from an initial effect of immediacy and communicative intimacy, defined in jargon "social presence" (Lombard and Ditton 1997: 3), passes to a state of co-pres-ence or *togetherness* that merges each other's intentionality. A phenomenon, I would say, that is similar to the notion of *Lebenswelt* evoked by Meztinger.

If feeling present and located in a specific body (*embodiment*) is the basis of the sense of self, according to more recent studies, forms of "distributed embodiment" between the body of a human user and a robotic or virtual avatar can alter and expand the processes of presence with possibilities and results still to be discovered in the social, therapeutic and communication field (Riva, Waterworth and Murray 2014).

However, in *Evangelion*'s world, the alteration of senses (*altered embodiment*), the illusion of non-robotic mediation (*expanded embodiment*) and the *hyper-intimacy* achieved between Eva and children during the *berserk* mode (*distributed embodiment*) produces a schizophrenic fragmentation of Shinji's sense of self which, from episode 1.16, corresponds to a fragmentation of the diegetic time and space. According to John and Eva Lindh Waterworth, "If the technology is integrated with the self, we attend to and feel present in an external mediated reality in which the mediated nature of the world is invisible" (2014: 42). It is therefore conceivable that Shinji's alteration or loss of consciousness corresponds to a degree of transparency (i.e., "synchronization" in Nerv jargon) that fuses the human self with the bionic self of the Eva, thus creating an unprecedented form of cognitively richer and more complex *postbiotic presence*, than the concepts of mind-melding and hyperpresence have presupposed. The question arises as to whether even the agentivity of the Eva feels an opposite "inside-of-the-body" experience, that is, whether it is perceived as an autonomous singularity or senses the disturbing feeling that its actions are driven by an external agency, or even, whether its presence fluctuates from one strata to another and it is aware of it. The same dilemma could arise in respect of the audience experience: are we watching an extremely well designed (yet still) mecha anime series, or this is just the *rabbit hole* for entering in a puzzling, avant-pop and ultimately "postbiotic" media ecosystem? The "curse of Eva" – a side effect of piloting Evas which prevent pilots from aging – could be intended as a "figurative side effect" of *Evangelion*'s out-of-joint and deferred seriality. Even after decades, in fact, the hard-core fans demand for an all-encompassing explanation of Evangelion remains unrealised.[6]

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6   It could be suffice to say that in Italy (considered as one of the most relevant anime's western market) an Evangelion's guide titled *Evangelion for Dummies (Plug)* (Tedeschi and Brignola 2020) has been recently published. The book's introduction claims: "The Nerds aren't afraid of anyone. Not even Hideaki Anno! Two fans stood in a basement and shot *Neon Genesis Evangelion* an unquantifiable number of times. And afterwards they thought of writing a book. To explain Evangelion!". For a multi-disciplinary discussion of the "Italian anime boom" see Pellitteri (2014).

7. **CONCLUSIONS**

By proposing a "fractal" analysis of the *Evangelion* series by highlighting some distinctive features of the episodes and character design, I have analyzed how the series intercepted, thematized and popularized an eco-phenomenological approach to reality that, at the turn of the new millennium, developed among the human and cognitive sciences. The remix of themes and forms of the "mecha" serial genre effectively hooks up with the fandom ecosystem, triggering a long-standing, transnational and deferred narrative about its own "ending" and the complexity of contemporary mediated experience. In doing so, the *Evangelion* series has intercepted and helped to spread within the pop and fan culture groundbreaking eco-phenomenological themes and perspective.

Within the episodes the notion of body is conceived as a place of postbiotic encounter and sympoiesis among species, and depository of an "intimacy between strangers" that is constitutive of the biocultural evolution. The character's mind, embodied and anti-Cartesian, is capable of altering, extending, merging and transcending the biological body through technological mediation. The *Evangelion*'s environment is proposed as an intelligent and contaminated system, populated by chthonic creatures and multiple species, politically contended between the Anthropocene and the Chthulucene. And finally, the series articulates a compelling vision of "presence" as an endemically mediated and volatile experience which nowadays is at the center of the ethical debate on the "human enhancement" (Kaspersky Lab 2020) and on the possible "artificial suffering" of *near-to-future* sentient robots designed by humans (Metzinger 2013).

By recalling and, at times suggesting, postbiotic and sympoietic scenarios of the world to come through a sophisticated visual and serial strategy based on endlessly deferred narrative and a complex character design, *Evangelion* has the merit of having synthesized, in an innovative and probably unparalleled form, the complexity of the eco-phenomenological approach *to* and *within* the Japanese serial animation and partially underestimated in the Western one.

REFERENCES

Agamben, Giorgio (2004). *The Open. Man and animal.* Stanford: Stanford University Press.

Azuma, Hiroki, (1996) "Anime or Something Like It: *Neon Genesis Evangelion.*" *Intercommunication* 18. http://www.

ntticc.or.jp/pub/ic_mag/ic018/intercity/higashi_E.html (last accessed 26-02-21).

Azuma, Hiroki (2009). *Otaku: Japan's Database Animals.* Minneapolis: University of Minnesota Press.

Bach-Y-Rita, Paul, Carter C. Collins, Frank A. Saunders, Benjamin White, and Lawrence Scadden (1969). "Vision substitution by tactile image projection." *Nature* 221: 963-964. https://doi.org/10.1038/221963a0.

Bach-Y-Rita, Paul, S. Kercel (2003). "Sensory Substitution and the Human-Machine Interface." *Trends in Cognitive Sciences* 7(12): 541-46. https://doi.org/10.1016/j.tics.2003.10.013.

Biocca, Frank (1997). "The Cyborg's Dilemma: Progressive Embodiment in Virtual Environments." *Journal of Computer-Mediated Communication* 3(2). https://doi.org/10.1111/j.1083-6101.1997.tb00070.x.

Bolter, David Jay (2019). *Digital plenitude. The decline of elite culture and rise of new media.* Cambridge: The MIT Press.

Bolton, Christopher (2007). "The Mecha's Blind Spot". In *Robot Ghosts and Wired Dreams. Japanese Science Fiction from Origins to Anime*, edited by Christopher Bolton, Istvan Csicsery-Ronay Jr. and Takayuki Tatsumi, 123-47. Minneapolis: University of Minnesota Press.

Bolton, Christopher (2018). *Interpreting Anime.* Minneapolis: University of Minnesota Press.

Bolton, Christopher, Istvan Csicsery-Ronay Jr. and Takayuki Tatsumi (2007). "Introduction". In *Robot Ghosts and Wired Dreams. Japanese Science Fiction from Origins to Anime*, edited by Christopher Bolton, Istvan Csicsery-Ronay Jr. and Takayuki Tatsumi, vii-xxii. Minneapolis: University of Minnesota Press.

Bolton, Christopher, Istvan Csicsery-Ronay Jr. and Takayuki Tatsumi (Eds.) (2007). *Robot Ghosts and Wired Dreams. Japanese Science Fiction from Origins to Anime.* Minneapolis: University of Minnesota Press.

Bordwell, David and Thompson, Kristin (2010). Film *History: An Introduction (3rd Ed.)*. New York: McGraw-Hill Education.

Braidotti, Rosi (2013). *The Posthuman.* Oxford: Polity Press.

Brembilla, Paola and Ilaria A. De Pascalis (Eds.) (2018). *Reading Contemporary Serial Television Universes: A Narrative Ecosystem Framework.* New York: Routledge.

Carocci, Enrico (2020). "Technological intimacy and media subjectivity. A reading of *Her.*" *Visual Culture Studies* 1: 201-22.

Chalmers, David and Clark, Andy (1998). "The Extended Mind." *Analysis* 58: 7-19. https://doi.org/10.1093/analys/58.1.7.

Clark, Andy (2003). *Natural-Born Cyborgs. Minds, Technologies and the Future of Human Intelligence*, Oxford: Oxford University Press.

Clark, Andy and Grush, Rick (1999). "Towards a Cognitive Robotics." *Adaptive Behavior* 7(1): 5-16. https://doi.org/10.1177%2F105971239900700101.

Clements, Jonathan and Helen McCarthy (2015). *The Anime Encyclopedia (3rd Revised Edition): A Guide to Japanese Animation since 1917.* Berkeley: Stone Bridge.

Deleuze, Gilles (2007). *What is a device?* Naples: Cronopio.

Dennett, Daniel (1991). *Consciousness Explained.* New York: Little Brown & Co.

De Oliveira, Elen Collaço, Philippe Bertrand, Marte Ernesto Roel Lesur, Priscila Palomo, Marcelo Demarzo, Ausias Cebolla, Rosa Baños and Romero Tori (2016). "Virtual body swap: a new feasible tool to be explored in health and education." In *2016 XVIII Symposium on Virtual and Augmented Reality (SVR 2016)*, 81-9. Gramado: IEEE.

De Pascalis, Ilaria (2019). "Cartographies of Complexity: Models for the Interpretation of Contemporary Serial Narratives". *SigMa* 3: 643-78.

Gallagher, Shaun (2017). *Enactivist Interventions: Rethinking the Mind.* Oxford: Oxford University Press.

Gatti, Giuseppe (2019). *Dispositivo. Un'archeologia della mente e dei media.* Rome: Roma TrE-Press.

Gibson, James (1979). *An ecological approach to visual perception.* London: Psychology Press.

Grush, Rick (2004). "The emulation theory of representation: Motor control, imagery, and perception." *Behavioral and Brain Sciences* 27(3): 377-442. https://doi.org/10.1017/S0140525X04000093.

Hansen, Miriam (1991). *Babel and Babylon. Spectatorship in American Silent Film.* Cambridge: Harvard University Press.

Haraway, Donna (1990). *Simians, Cyborgs, and Women: the Reinvention of Nature.* New York: Routledge.

Haraway, Donna (1997). *Modest_Witness@Second_Millennium. FemaleMan©Meets_OncoMouse™: Feminism and Technoscience.* New York: Routledge.

Haraway, Donna (2016). *Staying with the Trouble. Making Kin in the Chthulucene.* London: Duke University Press.

Haselager, Willem (2007). "Robotics, philosophy and the problems of autonomy." In *Cognitive Technologies and the Pragmatics of Cognition,* edited by Itiel E. Dror, 61-76. Amsterdam/Philadelphia: John Benjamins Publishing Company.

Hills, Matthew (2002). *Fan Cultures.* New York: Routledge.

Hirstein, William (2012). *Mindmelding. Consciousness, Neuroscience, and the Mind's Privacy.* Oxford: Oxford University Press.

Jenkins, Henry (2006). *Convergence culture. Where Old and New Media Collide.* New York: New York University Press.

Kaspersky Lab. (2020). The Future of Human Augmentation 2020. Opportunity or Dangerous Dream? https://bit.ly/38LREqJ (last accessed 26-02-21).

Kristeva, Julia (1982). *Powers of horror: An Essay on Abjectness.* New York: Columbia University Press.

Lakoff, George and Mark Johnson (1999). *Philosophy in the Flesh. The Cognitive Unconscious and the Embodied Mind: How the Embodied Mind Creates Philosophy*, New York: Basic Books.

Lamarre, Thomas (2018). *The Anime Ecology: A Genealogy of Television, Animation, and Game Media.* Minneapolis: University of Minnesota Press.

Levi, Antonia (1996). *Samurai from Outer Space: Understanding Japanese Animation.* Chicago: Open Court.

Lippit, Akira Mizuta (2000). *Electric Animals. Toward a Rhetoric of Wildlife.* Minneapolis: University of Minnesota Press.

Lombard, Matthew and Theresa Ditton (1997). "At the Heart of It All: The Concept of Presence." *Journal of Comuter-Mediated Communication* 3(2): 1-26. https://doi.org/10.1111/j.1083-6101.1997.tb00072.x.

Manovich, Lev (2001). *The Language of New Media.* Cambridge: The MIT Press.

Metzinger, Thomas (2013). "Two principles for robot ethics". In *Robotik und Gesetzgebung*, edited by E. Hilgendorf & J.-P. Günther, 263-302. Baden-Baden: Nomos.

Metzinger, Thomas (2018). "Why Is Virtual Reality Interesting for Philosophers?." *Frontiers in Robotics and AI* 5:101. https://doi.org/10.3389/frobt.2018.00101.

Misté, Jacopo (2018). *Guida ai Super e Real Robot. L'animazione robotica giapponese dal 1980 al 1999.* Bologna: Odoya.

Mitchell, William J. (2003). *Me++. The Cyborg Self and the Networked City.* Cambridge: The MIT Press.

Mittell, Jason (2015). *Complex TV: The Poetics of Contemporary Television Storytelling.* New York: New York University Press.

Nacci, Jacopo (2016). *Guide to Super Robots. Japanese Robotic Animation from 1972 to 1980.* Bologna: Odoya.

Nakamura, Miri (2007), "Horror and Machines in Prewar Japan. The Mechanical Uncanny in Yumeno Kyusaku's *Lean Dogura*". In *Robot Ghosts and Wired Dreams. Japanese Science Fiction from Origins to Anime*, edited by Christopher Bolton, Istvan Csicsery-Ronay Jr. and Takayuki Tatsumi, 3-26. Minneapolis: University of Minnesota Press.

Napier, Susan J. (2005). *Anime from Akira to Howl's Moving Castle: Experiencing Contemporary Japanese Animation.* New York: Palgrave Macmillan.

Napier, Susan J. (2007). "When the Machines Stop Fantasy, Reality, and Terminal Identity in *Neon Genesis Evangelion* and *Serial Experiments: Lain*". In Robot *Ghosts and Wired Dreams. Japanese Science Fiction from Origins to Anime*, edited by Christopher Bolton, Istvan Csicsery-Ronay Jr. and Takayuki Tatsumi, 101-22. Minneapolis: University of Minnesota Press.

Nolfi, Stefano (1998). "Evolutionary Robotics: Exploiting the full power of self-organization." *Connection Science* 10(3-4): 167-83. https://doi.org/10.1080/095400998116396.

Panksepp, Jaak (1998). *Affective Neuroscience: The Foundations of Human and Animal Emotions.* Oxford: Oxford University Press.

Panksepp, Jaak (2011). "The basic emotional circuits of mammalian brains: Do animals have affective lives?" *Neuroscience and Biobehavioral Reviews* 35: 1791-804. https://doi.org/10.1016/j.neubiorev.2011.08.003.

Parisi, Francesco (2019). *La tecnologia che siamo.* Torino: Codice.

Pellitteri, Marco (2011). *The Dragon and the Dazzle: Models, Strategies, and Identities of Japanese Imagination: a European Perspective.* London: John Libbey.

Pellitteri, Marco (2014). "The Italian anime boom: The outstanding success of Japanese animation in Italy, 1978–1984". *Journal of Italian Cinema & Media Studies* 2(3): 363-81. https://doi.org/10.1386/jicms.2.3.363_1.

Pellitteri, Marco (2019). "Nota introduttiva". In *Anime system. Il successo polimediale dell'animazione giapponese*, by Marc Steinberg, edited by Marco Pellitteri, ix-xxxvi. Latina: Tunué.

Pepperell, Robert and Punt, Michael (2000). *The Postdigital Membrane. Imagination, Technology and Desire.* Bristol-Portland: Intellect.

Ramachandran, Vilayanur R. (2003). *The Emerging Mind: The BBC Reith Lectures.* London: Profile.

Riva, Giuseppe, John Waterworth and Dianne Murray (Eds.) (2014). *Interacting with Presence: HCI and the Sense of Presence in Computer Mediated Environments.* Warsaw-Berlin: De Gruyter Open. https://doi.org/10.2478/9783110409697.

Ruh, Brian (2013). "Producing Transnational Cult Media: *Neon Genesis Evangelion* and *Ghost in the Shell in Circulation*" *Intensities: The Journal of Cult Media* 1: 1-22.

Ryle, Gilbert (1949). *The Concepts of Mind*. London-New York: Hutchinson's University Library.

Sadamoto, Yoshiyuki (1997). *Neon Genesis Evangelion. Vol. 1*, Eng. translation by William Flanagan and David Ury. http://www.evamonkey.com/writings/sadamoto-yoshi-yuki-evangelion-manga-commentary.php (last accessed 05-06-2021).

Schodt, Frederik L. (1988). *Inside the Robot Kingdom: Japan, Mechatronics, and the Coming Robotopia*. Tokyo: Kodansha International.

Smith, Marquard (2005). *Stelarc: The Monograph*. Cambridge: The MIT Press.

Smith, Aaron Michael (2009). *Transmedia Storytelling in Television 2.0. Strategies for Developing Television Narratives Across Media Platforms*. Middlebury: Middelbury College.

Sobchack, Vivian (1990). "Toward a Phenomenology of Cinematic and Electronic Presence: The Scene of the Screen." *Post Script* 10(1): 50-9.

Steinberg, Marc (2012). *Anime's Media Mix: Franchise Toys and Characters in Japan.* Minneapolis: University of Minnesota Press.Tedeschi, Francesco and Cristiano Brignola (2020). *Evangelion for Dummy (Plugs)*. Granarolo dell'Emilia: Dynit.

Uexküll, Jacob Von (2010). *A foray into the worlds of animals and humans: with a theory of meaning*. Minneapolis: University of Minnesota Press.

Vogler, Chris (1992). *The Writer's Journey: Mythic Structure for Storytellers and Screenwriters*. Studio City: Michael Wiese Productions.

Waterworth, John and Waterworth, Eva Lindh (2014). "Altered, Expanded and Distributed Embodiment: the Three Stages of Interactive Presence". In *Interacting with Presence: HCI and the Sense of Presence in Computer Mediated Environments*, edited by Giuseppe Riva, John Waterworth, and Dianne Murray, 32-45. Warsaw-Berlin: De Gruyter Open. https://doi.org/10.2478/9783110409697.

White, Thomas (2013). "Humans and Dolphins: An Exploration of Anthropocentrism in Applied Environmental Ethics." *Journal of Animal Ethics* 3(1): 85-99. http://dx.doi.org/10.5406/janimalethics.3.1.0085.

Williams, Linda (1991). "Film Bodies: Gender, Genre, and Excess." *Film Quarterly* 44(4): 2-13. https://doi.org/10.2307/1212758.

Wolf, Mark J. P. (2007). *The Video Game Explosion: A History from Pong to PlayStation and Beyond.* Westport: Greenwood Press.

Woznicki, Krystian (1998). "Towards a Cartography of Japanese Anime. Year Hideaki's *Evangelion*. Interview with Azuma Hiroki". http://www.nettime.org/Lists-Archives/nettime-l-9802/msg00101.html (last accessed 26-02-21).

TV series, films, and other media cited

Akira (1988)
Blade Runner (1982)
Devilman (1972-1973)
The End of Evangelion (1997)
Evangelion 2.0 You Can (Not) Advance (2009)
Evangelion: 3.0+1.0 Thrice Upon a Time (2021)
Evangelion: Another Impact (2015)
Future Robot Daltanious (1978-1980)
Ideon (1980)
Idoru (1996)
Mazinger Z (1972-1974)
Mobile Suite Gundam (1979-1980)
Nadia: The Secret of Blue Water (1990-1991)
Neon Genesis Evangelion (1995-1996)
Neon Genesis Evangelion: Death & Rebirth (1997)
Neuromancer (1984)
Paranoia Agent (2004)
Patlabor (1989-1990)
Raideen The Brave (1975-1976)
Serial Experiments Lain (1998)
Steel Jeeg (1975-1976)
Twin Peaks (1990-1991; 2017)
Voltron (1984-1985)