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Intersections between Humans, Animals and Robots in Australian Dance Theatre's *Devolution**

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I. Introduction

In digital performance, posthuman embodiment is represented in a variety of forms ranging from a mediatised or virtual counterpart of a human performer to a cyborg as the actual merging of a human body and a machine. The cyborg as a part-organic, part-technological being is grounded upon cybernetics that insists on the modification and augmentation of the human body through the communication and control systems of the machine. In the introduction of *Cyborg Handbook*, Chris Hables Gray and other colleagues indicate that there is no consensus on the definition of cyborg because types of cyborg and human-machine relations have proliferated.[1] Cyborgian figures have emerged in the military, medical science, science fiction, popular culture, and daily life, ranging from the fictional character (creature) of Mary Shelley's *Frankenstein* (1818) or *RoboCop*'s superhuman (1987), to an actual individual attached with an artificial organ, limb, and supplement, to an organism having genetic manipulation, and to a combat pilot controlling his aircraft through the helmet-mounted display.

Throughout history, the cyborg and its precursors such as automata and robots have provoked

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1) Chris Hables Gray, Steven Mentor, and Heidi J. Figueroa-Sarriera(eds.)(1995), *The Cyborg Handbook*(New York and London: Routledge), pp.2-3.

anxiety about the loss of moral agency and the violation of the human's ontological status. The cyborg as a monstrous, uncontrollable, and fearful figure has roots in the Western imagination of monsters, automata, and robots as ubiquitous figures, which have long been depicted as a threat to the human race in literature and science fiction since Frankenstein's monster. Cyborgian and robotic figures have been increasingly pictured in positive ways from the 1960s onwards, offering optimistic visions that human's association with technologies can save humankind from an apocalyptic event. These positive images of cyborgs and robots, however, are still built on the assumption that the human is in control of technologies, exalting the unique status of the human as a subject through its opposition to the nonhuman as an object.

This article aims to delve into Australian Dance Theatre's *Devolution* (2006) where human dancers not only co-exist with robotic machines but also exist as cyborgs, human beings with robotic appendages, investigating how the work challenges and reformulates hierarchical and conflicting relationships between human, animal, and machine. First, I will illustrate Western cultural imaginations of the cyborg and its forerunners in literature and science fiction and present an alternative view on cyborg that manifests the transgression of ontological boundaries between humans and non-humans (animals or robots). Secondly, by drawing upon various philosophical thoughts including Giorgio Agamben, Don Ihde, and others, I will explore how three types of performing entities – the organic, the robotic, and the hybrid – resist anthropocentric humanist perspectives on robotic and cyborgian figures, which are often relegated to the "Other," distinct from humans, excluded from human moral agency or controlled by humans by all means.

II. Dancing with Robots and Cyborgs

The work *Devolution*, which is directed and choreographed by Garry Stewart in collaboration with the French-Canadian roboticist Louis-Philippe Demers, is performed by thirty robotic and ten organic dancers. The company's artistic director Stewart, who is renowned for choreographic exploration into the extremes of the body's capacities, has grown the company's international reputation. His interests in working with other artists from different areas, such as photography, architecture, and video, have led to the creation of original and ground-breaking works which transcend the conventional boundary of dance. Demers has specialised in machines and media, creating more than 175 machines and working with diverse artists, including Robert Lepage, Stelarc, and Cirque du Soleil. *Devolution* was the first work in which Demers staged his robots to co-exist with human dancers. In *Devolution*, the two collaborators create an extraordinary and striking world in which humans and machines are placed in collision and confluence with each other. The choreographer takes an ecosystem as the

metaphor, exploring choreographic relations to ecosystem processes such as mutualism, territoriality, parasitism, swarming, predation, carnality, symbiosis, and senescence.[2)]

ADT dancers and Demers's robots on stage also metamorphose into animal or therianthropic creatures. Borrowing from various industrial manipulators, Demers invents the following six robot species, each of which exhibits different scales, shapes, and functions: 1) large geometric structured machines suspended from the ceiling and gliding on tracks, 2) two dinosaur-like gigantic ambulatory robots appearing from both sides of the stage, 3) a row of towering robots occasionally bending back and forward at the rear of the stage, 4) a colony of spider-like electronic creatures crawling across the stage, 5) an electronic python poking down from above and wriggling, 6) robotic prostheses, like limbs or antennae, attached to different parts of dancers' bodies.[3)] Stewart stated that these robots' behaviours were pre-programmed and controlled by a remote human operator, although the degree of unpredictability and arbitrariness that they still exhibited made it unsafe for a cast of dancers to dance with them.[4)] In some instances, due to sudden erratic and risky behaviours of two huge robots, dancers were not allowed to enter onto the stage, so the robots moved alone or the artist had to abandon staging these robots.[5)] Demers's machines were fastidious and cranky performers, not docile and governable ones.

Demers's attempt to attach his robots to dancers' bodies is conceived as the natural and logical consequence of the genealogy of automata and robots since robots, the most innovative form of the automaton to date, induce cyborgs to come into life.[6)] In the middle of the twentieth century, robots appeared in the manufacturing industry, and since then, their use and role have gradually increased in society, including military robots for combating or defusing bombs, domestic robots, such as vacuum cleaners, and medical robots like robotic surgical arms or nursing robots for elderly and disabled people. The advance of the automaton has branched out beyond robots as artificial intelligent beings, into cyborgs as hybrid beings fusing human bodies with robotic and computational systems, coupled with cybernetics. In *Devolution*, ADT dancers appear with metallic appendages located in their upper chest, upper back, legs or arms. The behaviours of the artificial prosthetics vary according to their mechanical structures and material characteristics: a long, foil-like machine strapped to the chest or the back repeatedly bends and waves menacingly; rigid metallic rods attached to limbs often have

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2) Australian Dance Theatre, Works, <http://adt.org.au/, 2013. 7. 1.>.

3) Louis-Philippe Demers, Devolution, <http://www.processing-plant.com/web_csi/index.html#project=devo, 2013. 8. 1.>.

4) Damian Madden(2007. 1. 17.), "Episode 10 of Stagecast: Discussion with Garry Stewart", *Stage Noise*, <http://www.stagenoise.com/stagecast/episode.php?id=10, 2013. 8. 5.>.

5) Jill Sykes(2007. 1. 26.), "Rage Against Machines", *The Sydney Morning Herald*, <http://www.smh.com.au/news/arts/rage-againstmachines/2007/01/25/1169594425802.html, 2013. 7 .14.>.

6) Gabriella Giannachi(2007), *Virtual Theatres: An Introduction*(London and New York: Routledge), p.44; Steve Dixon(2007), *Digital Performance: A History of New Media in Theatre, Dance, Performance Art, and Installation*(London and Cambridge: The MIT Press), p.278.

glitches while swinging; a snake-like machine fastened to the upper chest wriggles at will. These prostheses deform the dancers' bodies, who appear like therianthropes — beings that share human and animal traits.

III. Cultural and Critical Implications of Robots and Cyborgs

In the work, Stewart seeks to shun the banality of a hostile relationship between a vulnerable human being and a bleak machine or between an organic creator and a mechanical creature.[7] Instead, he reveals that

> As performing entities, the robots are given equal status to the human bodies in the work, albeit with some major operational differences. I haven't tried to conceptually separate robots and humans as different 'species' but have been interested in the collision and confluence of the two. Let's see what happens when we collide these operating systems — that sort of thing. It's as much an experiment in morphology and function as anything else.[8]

Stewart posits human dancers as equivalent to robots and conceives them as two different performing entities, each of which has its own operational system.[9] However, the responses of audiences may give rise to interpretations of the work which are incompatible with artistic intention. For example, one journalist states that "[t]he conflict between humanity and technology looms large in Australian Dance Theatre's Festival spectacular," drawing a parallel with Hollywood science fiction films such as *Terminator* and *War of the Worlds*.[10] I assume that the impression of the opposite relation between human and technology in the work is an inevitable reaction caused by historical bias that non-human or technological beings can violate the West's social and ethical standards. Before the cyborg and its forerunners – automata and robots – were scientifically invented, their cultural imaginations as monsters, devils, and abominations were long featured in literature and science fiction, relating to emerging technologies, their influences on society, and anxieties about the border of the human.

Since Karel Čapek coined the term robot in his novel *R.U.R. (Rossum's Universal Robots)* (1923), robots have been widely imagined as a menace to human beings in science fiction films, including the

7) Debelle Penelope(2006. 2. 24.), "Man, Machine and The Mystery of Which Is More Mechanical", *The Sydney Morning Herald*, <http://www.smh.com.au/news/arts/man-machine-and-the-mystery-of-which-is-more-mechanical/2006/02/23/1140670204879.html, 2013. 6. 20.>.

8) Erin Brannigan(2006. 2. 1.), "Dance Evolution in The Age of Robotics", *RealTime*, <https://www.realtime.org.au/garry-stewart-dance-evolution-in-the-age-of-robotics/, 2013. 8. 9.>.

9) Ibid.

10) Peter Burdon(2006. 2. 18.), "Dances with Robots", *The Advertiser*, pp.6-7.

Maschinenmensch in *Metropolis* (1927), HAL-9000 in *2001: A Space Odyssey* (1968), replicants in *Blade Runner* (1982), and Skynet's assassins in *The Terminator* (1984). Even though the world's first cyborg, a white laboratory rat with an implantable osmotic pump, was created in the late 1950s, it has been generally considered that the first description of a cyborgian figure was the monster that appeared in Mary Shelley's novel *Frankenstein*.[11] In this fiction, the eccentric and obsessive scientist Victor Frankenstein brings the creature into being in his experiment by assembling parts of human and animal corpses. Upon discovering that the creature is not a human being but a monster with a gigantic figure and repulsive appearance, he disowns the creature. The abandoned monster desires to fraternise with humans and searches for a companion who will understand his existence. However, his hopes are dashed by people who are terrified by his inhuman appearance, which inspires his rage and leads him to seek revenge against his creator.

Throughout Western history, pessimistic views of technology have proliferated — for example, in representations of fearful machines — and have been accompanied with widespread scepticism about the dehumanisation of humans. Despite such negativity, recent science fiction films and television series foreground optimistic visions of technology, often imagined through heroic cyborgian figures that defeat their demonic antagonists, thereby reflecting scientific advances toward the cyborgian future and technological encroachments on our society from the 1960s onwards. Ranging from television characters like *The Six Million Dollar Man* (1974-1978) and *The Bionic Woman* (1976-1978) and to comic and movie characters like Wolverine in *X-Men* (2000) and Tony Stark in *Iron Man* (2008), the idea of mechanically enhanced or genetically modified humans entered into the mainstream through the portrayal of a cyborg hero or heroine whose superhuman physical and mental ability is used to save humankind from human or cyborg villains. However, according to Parker-Starbuck, these fictive imaginings of the cyborg are safely and superficially illustrated without challenges to the West's social and cultural norms.[12] Hopeful depictions of cyborgs in science fiction films are primarily grounded on liberal humanism's technological determinism which supposes that technologies can co-exist with bodies only if humans are in charge of technologies. In most of the positive cinematic and television depictions of cyborgs, humans use technologies in morally justifiable ways to pursue peace for humankind. To put it in another way, even though the fictive cyborgs manifest the increasing technological agency and its intimate incorporation into the human, they tend to position technologies as external instruments used for the sake of human beings without critical reflections on technologies' engagement in the construction of the human agency and subjectivity.

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11) Gray et al.(1995), p.5.

12) Jennifer Parker-Starbuck(2011), *Cyborg Theatre: Corporeal/Technological Intersections in Multimedia Performance*(Basingstoke and New York: Palgrave Macmillan).

Contrary to cinematic and television depictions of robotic and cyborgian figures, academic discourses on cyborg in literary and cultural theory have attempted to go beyond criticising or praising technology itself and redefine the human which integrates with the non-human. In her seminal essay "A Manifesto for Cyborgs" (1991), Donna Haraway argues that the cyborg becomes a political metaphor, highlighting its potential to disrupt the Western traditional dualisms between human and animal, autonomy and automaton, the natural and the artificial. For Haraway, a cyborg is a creature of social reality as well as of the imagination, standing for possibilities to question what nature and the human are and to destroy political and physical boundaries that cause class, ethnic, and cultural differences. In this sense, Haraway declares that we are already cyborgs, stating that

> By the late twentieth century, our time, a mythic time, we are all chimeras, theorized and fabricated as hybrids of machine and organism; in short, we are cyborgs. The cyborg is our ontology; it gives us our politics.[13)]

While Haraway focuses on the cyborg as the metaphor of the subversion of traditional identity politics, in particular relation to gender, Katherine Hayles, one of the most prominent cultural posthumanists, takes issue with the anthropocentric subject of humanism. Hayles articulates the notion of the posthuman as one possible construction of human subjectivity, which is different to a historically specific construction called "the human."[14)] In his book *What is Posthumanism?* (2010), Cary Wolfe argues for the deconstruction of human nature and human exceptionalism, contending that there is no unified human subjectivity because

> [We are] always radically other, already in- or ahuman in our very being—not just in the evolutionary, biological, and zoological fact of our physical vulnerability and mortality, our mammalian existence but also in our subjection to and constitution in the materiality and technicity of a language that is always on the scene before we are, as a precondition of our subjectivity.[15)]

Wolfe's posthumanist notion of human hybrid subjectivity shows that the human is no longer defined in a strict dualism against the non-human realm. The human's unfixed nature and its mutable relation to the nonhuman undermine the humanist hierarchical system that places the human above the nonhuman others including animals, machines, objects, systems, and environment. Next, I will

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13) Donna Haraway(1991), *Simians, Cyborgs and Women: The Reinvention of Nature*(New York: Routledge), p.150.

14) N. Katherine Hayles(1999), *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics*(Chicago: University of Chicago Press).

15) Cary Wolfe(2010), *What is Posthumanism?*(Minneapolis: University of Minnesota Press, 2010), p.89.

investigate Stewart and Demers's choreographic way of representing the three types of the performers and their becoming-cyborg in terms of its stance on anthropocentric oppositions between humans and animals, nature and artifice, humans and robots.

IV. Human's Animality

During the performance, ADT dancers, dressed in leathery armour by costume designer Georg Meyer-Wiel, hardly show their faces to audiences since they mostly pull themselves down to the floor, drooping their heads and leaning forward while moving. Their limbs constantly unfurl and fold while their fingers remain tense with wrists bent. The distorted posture and odd angles of the body parts make them appear like non-human beings. Despite the restricted range of sight, the dancers move like edgy, sentient, and wild beings, following their instincts. At times, the dancers cease moving as they hold deformed postures, poising themselves on one leg with their head down or standing upside down for a long time. The dancers' uptight and alert movements are combined with composer Darrin Verhagen's booming and creaking sounds and ghastly blue lighting. With a sudden thundering sound, the dancers' movements become energetic and fast to an extreme degree. They storm against each other: tumbling speedily, flying high, throwing themselves into each other, brutally falling onto the ground, and rolling over. Ten of the resilient and powerful dancers carry out acrobatic and violent movements in their respective ways.

The appearances and movements of the dancers evoke regressive, primitive, and animalistic characteristics. The exposure of torsos or buttocks and the layered leather costumes reminiscent of larva carapaces explicitly imbue the dancers with atavistic traits. When the dancers enact extremely fast, powerful and aggressive movements, they rarely move in erect positions but instead mostly hunch their backs and occasionally crawl on four limbs and stand upside-down. Enraged and unerect attributes in choreography dare dancers to exceed their physical limits. Stewart reveals that his intention of manifesting the zoomorphic potential of bodies is carried out by "distorting the body away from an upright pedestrian orientation and challenging the Cartesian view of the body."[16] Although he does not elucidate how unerect postures and movements help to contradict the Cartesian view of the body, I presume that it is related to a deliberate hindering of vision, which is a sense in which the mind is enacted most strongly in the Cartesian understanding.[17] The dancers heighten

16) Brannigan(2006. 2. 1.).

17) For Descartes, an external object that we sense is perceived and comprehended by the mind which exerts ideas and controls the body within the brain. Vision is considered as the most spiritual sense among the all senses since it lets the mind apply thoughts to objects without any physical stimulation. Celia Wolf-Devine(2000), Descartes' Theory of Visual Spatial Perception, Stephen Gaukroger, John Andrew Schuster, and John Sutton(eds.), Descartes' Natural Philosophy(London and New York: Routledge), p.506.

kinaesthetic sensations and engage less with visual sensations, which connotes escaping from mind control over body and returning to the instinctive nature of the human body.

Through instinctive and sometimes feral qualities of dancers' movements, dancers no longer reveal themselves as human beings. Although dancers primarily do not mimic specific animals' behaviours in a direct manner, there are some scenes that recall images of certain kinds of creatures to audiences. For instance, a pair of dancers whose mouths stick together while their arms hold each other tight and their limbs are repeatedly entwined or stretched out. They are suggestive of two battling praying mantises. In the middle of the performance, a female dancer lifts up her back while supported on four limbs and creeps on the floor with her head upside-down. Her limbs are constantly folded and unfolded at odd angles. Her body shape and movement evoke the image of a spider. Throughout the work, ADT dancers exhibit extreme physicality, as they follow bodily instinct, possibly without vision, and conjure zoomorphic figures. In so doing, they reveal the shared nature between humans and animals, which is acknowledged in Stewart's choreographic intention to resist a social tendency to deny the human as biological beings and its instinctive nature which is shared with animals or other creatures:

> ··· we're trying to position humans more as creatures or animals – which is what we are. We think about ourselves as being separate from the animal world [···] yet we are actually driven by very basic and primal instinctive forces. [···] *Devolution* is about devolving or regressing back conceptually to the idea that we are instinctive biological creatures, rather than extraordinarily cultured beings that are separate from nature.[18)]

Stewart prioritises the body and its instinct over the mind and consciousness while emphasising humans as biological beings rather than cultured ones. Stewart's intention of the "devolution" of human dancers into animals or creatures can be construed as an objection to social hierarchy between humans and animals in the Western historical context. By drawing upon Italian philosopher Giorgio Agamben's theory, I intend to address the dancers' metamorphoses into animals as the rejection of an ontological distinction between humanity and animality.

Since the 1970s, animal studies has emerged and developed as an interdisciplinary paradigm which not only addresses animal welfarism, rights, and exploitation, but also calls into question human-centric perspectives on the relationship between human and non-human animals, responding to increasing ethical issues of biopolitical controls, the military's infringement of freedom, and the government's surveillance of the nation through a biometric database. In the age of anthropocentrism, global capitalism, and Western imperialism, the human's mastery and control, not only of nature but

18) Michelle Read(2006. 3. 14.), "Australian Dance Theatre's Devolution", *Rip It UP*, <http://www.ripitup.com.au, 2013. 7. 8.>.

also him/herself, is driven more by technological advances, generating the animalisation of humanity and casting into doubt what distinguishes humanity from animality. In this sense, animal studies parallels with cyborg theory since both tackle the drastic changes in Western societies and the attendant questions about the human's relationship to the nonhuman, which is animal and machine respectively.

In his book *The Open* (2004), Agamben offers theoretical insights on the ongoing teleological concept of humanity in relation to animality. He contends that the human is produced with and against the animal through an "anthropological machine" which he refers to as the mechanism in Western philosophy and science underlying our process of distinguishing between humans and animals. The anthropological machine propels humanity by excluding the animality of the nonhuman and the animality within the human itself. In doing so, the machine brings about the ontological hierarchy between humans and animals and upholds the human's mastery over nonhuman species. Agamben provides two variant versions of the anthropological machine, proving how humanity is set against those that are not (fully) humans through inclusion and exclusion.[19] The pre-modern anthropological machine defines the inhuman by humanising the animal. For example, ape-men, slaves, and barbarians were deemed as animals in human form. On the contrary, the modern anthropological machine demarcates the inhuman by animalising the human, to the extent that Jews during the Holocaust and, more recently, Iraqi internees were considered as humans in animal form. The humanised animal and the animalised human demonstrate an unstable and ambiguous border between human and animal. In order to make border clearer and to ennoble the human, we justify the subordination of the animal to the human and deny the ambiguous nature within the human itself.

Agamben contends that if the anthropological machine is stopped, the relation between the human and the animal will be reformed, which is exemplified by an image of the banquet of the righteous on the last day of history. The image, taken from a thirteenth-century Hebrew Bible, portrays the righteous as animal-headed beings. Given that in the rabbinic tradition "the righteous" stands for the remainder of Israel at the coming of the Messiah, Agamben proposes that the quintessence of humanity is the reconciliation of man with his own animal nature.[20] For him, when we cease being hostile to animals and acknowledge that humanity is not incompatible with animality, the human will exist as man, neither dominating nature nor animalising man. Agamben concludes that within the human itself, humanity and animality can co-exist in a state of harmony and stasis, although he does not account for how to apply this reconciliation in relation to morality, technology, and the animalised world.[21]

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19) Giorgio Agamben(2004), *The Open: Man and Animal*, Kevin Attell(trans.)(Stanford: Stanford University Press), p.37.

20) Ibid., p.3.

21) Guillermina Seri(2005), Giorgio Agamben's The Open. Man and Animal, *Politics & Culture* 3, <http://www.politicsandculture.org/2005/05/07/giorgio-agambens-the-open-man-and-animal/, 2013. 5. 7.>.

Agamben's concepts of resisting the anthropological machine and bringing forward the reconciliation of the human and the animal is visualised in *Devolution* where human dancers metamorphose into animals in human form. Distinct natures belonging to humans and animals respectively no longer exist within the dancers who twist, bend, and curve their bodies, crawl about on all fours, stand on their hands and enhance instinctive and kinaesthetic sensations. From an anthropocentric humanist perspective, the animalised dancers may be conceived as the Other, lacking in humanity and subordinated to the human. By contrast, they can be viewed as the embodiment of the animalistic nature of humans because the dancers become animalised, which is not the opposite of humanity but rather inherent within it.

V. Robots as Living Organisms

As is the case with human dancers, robots also take the form of animals. The robotic artist Demers rejects stereotyped depictions of machines as opposed to living organisms, and instead represents robots as creatures. To look into robotic machines which are staged as separate entities from human dancers (robotic prosthetics attached to the human dancers will be discussed later), robots are fabricated from abstract and geometrical figures of industrial manipulators. They are not sleek and smart high-tech machines, but rather somehow regressive and clumsy industrial machines. Their mechanomorphic appearances resemble non-representational architectures or symbolic metallic sculptures, but their zoomorphic behaviors echo living organisms. Two peering giants, a mob of diminutive robots and an elongated metallic cylinder are respectively transformed into clumping carnotauruses, crawling spiders, and a wiggling python. Their inert mechanomorphic shapes are reformulated and evolve into living organisms. As stated above, the robots are pre-programmed machines without their own intelligence or a sensory-motor ability to respond to human dancers. If it were possible for them to operate autonomously and enact unpredictable and hesitative behaviours in response to the dancers, they would appear more like living organisms. However, as Cleland (2011) points out, unlike the field of scientific robotics where key concerns are functional, effective, and sophisticated qualities of robots, including artificial intelligence and sensing and emotional systems, artistic practices attach importance to how an audience perceives and interprets the robot's appearance and behaviours, which hinges on robots' performing "ability to persuasively simulate or pass as human, or alive, or intelligent."[22] In *Devolution*, the robots and their zoomorphic behaviours

22) Kathy Cleland(2011), Robots as Social Actors: Audience Perception of Agency, Emotion and Intentionality in Robotic Performers, *Proceedings of the 17th International Symposium on Electronic Art, ISEA2011*, Istanbul, September 14-21, <http://isea2011.sabanciuniv.edu/paper/robots-social-actors-audience-perception-agency-emotion-and-intentionality-robotic-performers, 2014. 6. 7.>.

successfully act as living organisms that co-exist with human dancers as another species.

The robots, as one kind of organism living in the metaphorical ecosystem that the artists present, overthrow the ontological distinction between machine and organism and parallel machine with nature in the evolutionary process. In science studies, there have been philosophical and critical discourses that find machines equivalent to living organisms. As indicated earlier, the cybernetic theorist Norbert Weiner makes a comparison between the human nervous system and the computer's binary system and proposes the prospect of artificial intelligence which is placed on a par with human intelligence.[23] Science historian George Dyson claims that the digital evolution of computers is analogous to the natural evolution of life, drawing biology parallel with technology in the matter of "tendencies toward collective, hierarchical processes based on information exchange."[24] According to Dyson, information is distributed and encoded in various forms. Among them, the most meaningful representations survive. This evolutionary process is undertaken in systems of plants, animals, humans, and computers.[25] Given that natural selection in biology is akin to a principle operated in technology, particularly the computing area, machines are considered as life in the Darwinian fashion.

Rather than the mechanisation of the human and the anthropomorphization of the machine, Stewart and Demers devise the animalisation of the human and the machine by accentuating the human's animal instincts and the machine's kinship with the animal. Consequently, the relationship between the human dancers and the robots deviates from Hollywood science fiction clichés of human beings' battle against robots. In point of fact, in the work there is little obvious collision between dancers and robots. The dancers take violent movements to extremes and the robots have their overwhelming presence, but they do not attempt to attack or take control over each other. Each of them occupies a discrete space, having fraternal relationships with the other. Above the dancers are a set of huge metallic rectangular cuboids with two small spotlights that slide from the left and the right side of the stage. The cubes are slowly collapsed and expanded while swinging. Even though the machines do not approach close to the dancers below, their massive size and clunky sounds are enough to attract the dancers' attentions. Yet, the dancers do not express their impressions of the robots, whether interest or fear, and instead focus on what happens around them. A similar kind of human-machine relationships occurs with six lamppost-like machines standing rooted to the spot at the rear of the stage. A female dancer turns over her body, supported on two arms and two legs. Her back becomes strikingly curved like a bended bow and her sight is inverted. Behind her, the machines repeatedly sway back and forth and flash their glaring headlights at the dancer. Although they are unavoidably perceptible, she seems

23) Nobert Wiener(2003[1954]), Men, Machines and the World About, Noah Wardrip-Fruin and Nick Montfort (eds.), *The New Media Reader*(Cambridge: MIT Press), pp.67-72.

24) George Dyson(1997), *Darwin Among the Machine: The Evolution of Global Intelligence*(Reading: Addison-Wesley), p.7.

25) Ibid., p.8.

to be only aware of her bodily sensations and embodiment without regard for the robotic presence.

In the middle of the work, the dancers and the robots start to encounter each other: sometimes a dancer scans a robot with curiosity and wariness and vice versa; other times they have intense and dangerously close contacts. For instance, a mob of screeching and splashing metallic spiders approach a naked man standing in the centre of the stage. The dancer twists his body and limbs and strikes grotesque poses. He is not horrified by the spiders, but rather tries to get near to one of the spiders although he soon stops peeping at them. The moment to bring the tension to the surface is when a male dancer's body is lifted up and tugged by a gigantic metallic monster. The monster with six movable legs emerges from one side of the stage and moves towards a male-female couple whose limbs have become entangled. The machine gets closer to the couple and lowers its headlight, flashing at the dancers lying on the ground. It appears like a dinosaur staring at the tiny living beings out of curiosity. Underneath the bright eyes of the machine, the male takes his female partner by the throat and she eventually fails in her attempt to escape from him. Afterwards, the man's target moves into the machine and then attempts to grab the head of the machine. His body is then flatly pulled, dragged across the floor, and thrown down. The gigantic machine soon becomes disinterested in him and put him down. The unforeseen situation of these encounters between the human dancers and the robots does not signify a riotous fight between the human and the machine, but instead it is construed as attractions between separate species that coexist within the animal kingdom.

VI. Therianthropic Cyborgs

Toward the end of the work *Devolution*, robots go beyond having a discrete relationship with dancers and become integrated into dancers whose bodies are attached with metallic appendages, which is presumed as Stewart's choreographic embodiment of the confluence of human and machine. The dancers are primarily animalised not only through their zoomorphic representations but also their cyberization through metallic prostheses. In the work, two female dancers appear with a prosthesis worn on chest or back respectively. Their prosthesis resembles a long insect antenna which wiggles wildly thanks to its flexibility. A man whose legs are extended by elongated poles crawls onto the stage and turns upside down. The upstretched poles slowly whirl. Two male dancers wearing an additional metallic arm strapped to their chests walk across the stage and control the wiggling arm as though it is part of their bodies. Three men lean on the floor and wriggle their way out from the left side of the stage. As a short metallic rod on their arm jerks, the dancers have to squeeze their arm with the other hand. Later on, a man appears with the rods on both of his arms while struggling to clutch the rods that jolt violently. All of the prosthetic appendages are connected to electrical cables. The

dancers' movements have to be arranged due to the machines' impulsive movements so as to avoid crashing into each other. Because of the parasitic robots fastened to the dancers' bodies, the dancers can hardly move in an erect and bipedal manner, thus recalling the bizarre image of a therianthrope or an imaginative creature.

In *Devolution*, Demers's prostheses are incapable of translating the dancers' behaviours into their own behaviours. The peculiar behaviours of the robotic appendages are prescribed by Demers and electronically activated by a robotic operator during performance. Instead of controlling the appendages' behaviours on their own during the performance, the dancers learn how they move through their prosthesis during rehearsals by combining their corporeal movement and the prosthesis's peculiar movement so as to make the metallic appendages part of their bodies.

To explicate the dancers' experience of their prosthesis which becomes part of themselves, I reflect upon the American philosopher Don Ihde's concept of the human-technology "embodiment relation."[26] Ihde explores the role of technology in shaping human experiences and interpretations of reality. From a phenomenological perspective, reality is only understood through relations between humans and the world, and in the technological era, many of the relations humans make with the world are mediated by technological artefacts. Ihde discerns several relationships that humans make with technological artefacts to experience the world. As one category of human-technology relations, the "embodiment relation" occurs when technologies become part of the human embodiment. In an embodiment relation, human beings perceive the world through technological artefacts, which are not objects of the perception but semi-transparent mediums positioned in between the human beings and the world. Embodied technologies transform our perceptual and bodily sense in a reflexive way.[27] Eye glasses, telescopes, and dentist's probes are the prototypes of technologies making embodiment relations with humans. Subsequently, he claims that human relations with cyborg technologies, in particular, prosthetic devices, come within his concept of embodied relations.[28] When prosthetic devices — one of the oldest forms of cyberization — replace one's lost arms or legs in order to restore their sensory-motor capacities, they become part of one's embodiment after some period of time to adjust to the prostheses.

However, he points out that even cutting-edge technologies of prosthetics are not able to get to "*total transparency*, total embodiment, for the technology to truly 'become me'…my body and sense."[29] Even for highly skilled amputee sprinters with hi-tech prostheses, like Jami Goldman, who

26) Don Ihde(1990), *Technology and the Lifeworld: From Garden to Earth*(Bloomington: Indiana University Press).
27) Ibid., p.27.
28) Don Ihde(2008), Aging: I Don't Want To Be a Cyborg!, *Phenomenology and the Cognitive Sciences* 7(3), p.398.
29) Ihde(1990), p.75.

has lived with prostheses after undergoing an amputation at age one, the prostheses are not entirely transparent in their experience of the world. They still remain quasi-transparent at the minimal degree.[30] Ihde quotes American film and media theorist Vivian Sobchack's description of her experience of living with a high-tech prosthetic limb, which helps to explain ADT dancers' experiences of moving with prosthetics.

> I want to embody [my prosthetic leg] subjectively. I do not want to regard it as and object to think about it as I use it to walk. Indeed, in learning to use the prosthesis, I found that *looking objectively* at my leg in the mirror as an exteriorized thing — a piece of technology — to be thought about and manipulated did not help me to improve my balance and gait so much as did *subjectively feeling* through all of my body the weight and rhythm of the leg in a gestalt of intentional motor activity··· So, of course, I want the leg to become totally transparent. However the desired transparency here involves my incorporation of the prosthetic — and not the prosthetic's incorporation of me.[31]

Sobchack's statement explicitly shows that although she wants to experience the world without awareness of her prosthetic leg, her prosthetic leg remains quasi-transparent. That is, the prosthesis still does not become part of her body due to the impossibility of her knowing how the prosthesis perceives the world. The same situation occurs in ADT dancers' experiences. The dancers struggle with a prosthesis in the process of rehearsals in order to get accustomed to the weight of their prosthetics and its movement range and patterns. The prosthetic's own idiosyncratic behaviour, its awkward locations within the dancers' bodies and its cumbersome electronic cable make it difficult for the dancers to embody the prosthetic's behaviour, as described in a comment from one of the ADT dancers: "It's hard··· It's just more movement. I forget the chore[ography]··· Ah, those fucking cables!"[32]

As a result of learning how to adjust their bodily perceptual-motor system to the prosthetic's movement, it is unlikely that during performances the dancers perceive their prosthetics as an exteriorised thing out of their bodies. For example, a female dancer with a metallic antenna which is longer than her height is not seen as a biped any more since she has to lower the centre of gravity so as to balance her body with the unwieldy prosthesis. Her four limbs mostly remain planted on the ground and control the upper body's movement in accord with the shape, weight, and movement of the antenna. She does not directly gaze at her antenna as she moves, as she feels what happens with the

30) Ihde(2008), p.399.
31) Vivian Sobchack(2004), *Carnal Thoughts: Embodiment and Moving Image Culture*(Berkeley: University of California Press, p.172.
32) Jonathan Bollen(2009), Maybe We're Not Human: Translating Actions and Affects Between Humans and Machines in Australian Dance Theatre's Devolution, *Brolga, An Australian Journal About Dance* 31, p.14.

antenna, without having to see it. Nevertheless, it is presumable that she would not feel the metallic antenna as her body part because the antenna is not fully transparent in her embodied experience, which is almost impossible as even hi-tech prostheses of highly skilled amputee sprinters do not remain absolutely transparent. The dancer embodies her prosthesis subjectively and the machine functions as her extended body. She neither feels the antenna as her own body nor an external object. As her extended body, the prosthetic and its quasi-transparency in use reveal that the dancers' relations with the embodied prosthetics cannot be accounted for as the subject/object dichotomy since the parasite-prosthetics plays a role in mediating the dancers' perceptions of the environment and themselves in it. The prostheses allow the dancers not to enhance but rather to transform human capacities. Subsequently, they become therianthropes, rather than transhuman, new creatures that have an antenna, an additional arm or elongated limbs. The dancers' metamorphoses into therianthropic beings entail not only the change in the dancers' appearances but also the rearrangement of the dancers' bodily senses and motility. ADT dancers as therianthropic cyborgs are located beyond the borders of human, animal, and technology.

VII. Conclusion

The work *Devolution* reveals that humans have inextricable relations with nature and machines, challenging ontological boundaries between human beings, nature, machines. It rejects the dramatization of human beings versus machines and instead manifests human dancers and metallic robots as equal living beings co-existing within an ecosystem. The zoomorphic behaviours of the industrial robots transform the robots into creatures while the human dancers evoke animalistic images through their primitive appearances and instinctive and brutal movements. The human dancers' animalistic characteristics and the robots' organic potentials defy an anthropocentric bias toward the human's superior status to the nonhuman (animal and machine).

In spite of the artists' effort to bridge a gap between the human beings and the robots through the zoomorphic manifestations, it is no wonder that the relationship between the dancers and the robots can be easily deemed as corporeal/organic beings versus metallic/artificial beings. This is because throughout Western history, nonhuman or technological beings ranging from automata and robots to cyborgs have been pictured as Other, monsters, or something to control. Technology, whether as the dystopian or utopian potential, has been considered to be outside the realm of humanity. However, radical developments of technologies and their encroachments on the human life give rise to new perspectives on technologies which primarily explore technological impacts on shaping the human subject and morality. The cyborg is then suggested as a symbol of contesting ontological dichotomies

of the human and the animal, the biological and the mechanical, the natural and the artificial, by reason of its metaphorical implication of resisting social and political hierarchical systems, as well as its literal meaning of technologically intervening in the human body. The relationship between the human dancers and the robots in *Devolution* moves beyond the two separate entities. The dancers with prosthetic robots show the literal sense of the cyborg, given that in the dancers' embodiments, the metallic prosthetics becomes the extension of their bodies, thereby blurring the distinction between the human as a subject and the prosthetics as an object.

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Abstract

호주 댄스 씨어터의 「데볼루션(Devolution)」에서 나타난 인간, 동물, 로봇의 교차

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이 논문은 인간 무용수, 로봇 기계, 사이보그가 등장하는 호주 댄스 씨어터의 「데볼루션 (Devolution)」 (2006)을 탐구함으로써 작품이 인간, 동물, 기계간의 관계를 어떻게 설정하는지에 대해서 논의하고자 한다. 작품에서 은유적으로 표현한 인간 무용수의 동물적 특징과 로봇의 유기체적 잠재성은 비인간에 대한 인간의 우위성을 주장하는 인간중심적 관념에 저항하고 있다. 더불어 무용수들은 보철물을 그들의 신체의 연장으로 체화시킴으로써 실질적 사이보그로서 존재하게 된다. 분석결과, 작품 「데볼루션」은 인간과 자연, 기계가 서구 근대적 이원론적 사고에 따라 구분 짓기 어려운 불가분한 관계임을 보여주면서 인간, 자연, 기계간의 존재론적 경계에 도전하고 있었다. 또한 인류와 기계간의 대결을 극화하는 방식에서 벗어나 인간 무용수와 금속 로봇이 생태계 속에서 공존하는 동등한 생명체로 그려내고 있었다.

Keywords: 디지털 퍼포먼스(Digital performance), 포스트휴머니즘(Posthumanism), 로봇(Robot), 사이보그(Cyborg), 동물성(Animality)