Cyborg Movers:
Movement Politics on the
Cyborgian Ontology

A Thesis Presented to

Media Arts Cultures Consortium

In fulfillment of the requirement
for the degree Master of Arts at

Aalborg University
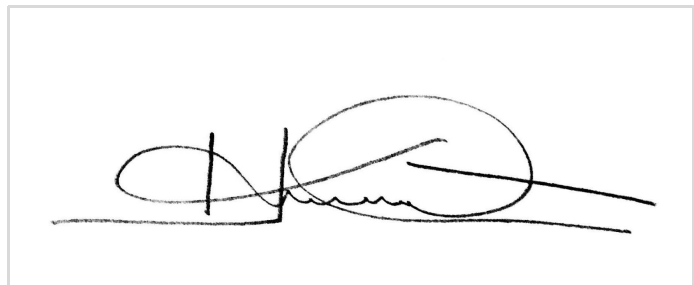
by

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August 2019

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Uğur Kaya
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Foreword

thanks - teşekkürler - köszönöm
شكرا جزيلا -شكرىه - 谢谢
hvala - cnacuбi - շնորհակալություն
obrigado - cảm ơn bạn - អរគុណ
ধন্যবাদ *- tak - danke dir*
gracias - grazie

for

people of inspirations

&

aspirers of curiosity

&

scholars, practitioners and academics
whom i have had a chance to meet during these
two years of my fruitfully transformative and
exciting time in media arts cultures.
&
sigur ros, with their divinely
magical sounds that inspired me
&
and finally those **incredible people**
whom i am grateful for their precious
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ignited the first sparkles of this passion

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Abstract

In this thesis, I aim to construct an alternative dance epistemology and capture of an image of cyborg dancing. Tracking the history of Western dance and analyzing Haraway's critique of Marxist and Radical feminist's political contstruction, I aim to explore how postmodernism as a cultural dominant could be a common ground for the analysis for the transition from uniform, organic and wholistic humans to heterogenous, autonomous and hybrid cyborg organisms. Throughout pursuing practise based research and autoethnography, I aim to speculate / fictionalize a cyborgian future of the essential elements and subjects of dance around this speculated alternative dance epistemology.

Keywords

1. Introduction and Background of the Study

Within the scope of my Erasmus Mundus Joint degree program Media Arts Cultures, I have been privileged to specialize in the field that I am most excited for, and studied in three difference universities, four different cities at four semester. Starting my academic journey in media arts fields, I have been granted a unique opportunity to meet the pioneers of the field and widened my perspective on the culture and philosophy of media arts at my first semester in Danube University. The following semester in Aalborg University, Denmark, I had the opportunity to experiment with technologies and learn how to conduct a practical based research from concept to production. There with my colleagues Alifiyah Imani and Magda Hamdy we have investigated the duality of physical and virtual in the cyborg world, and focused on the issue of borders, disruptions of representation, glitch and noise in this world using experimental language as our method. As we took the project further, experimented and finally exhibited our outcomes at Politics of Machine Conference in Copenhagen, as we intended to explore *"the inherent contradictions, harmonies and conflicts"* (Kaya, Imani, & Hamdy, 2018) that lies in this hybrid world, I have realized how all of us in fact, been aware or not, have the power of creating our own hybrid realities that would grant us a domain for exploring the uninhibited desires, motivation, capacity of our very physical being using the power of creativity, technology and collaboration with other beings.

After this intensely fruitful year of meeting with inspiring people, obtaining the comprehension of how to create an art project and base a research question on the reflection of the activities conducted, I have moved to Hong Kong as part of my ongoing studies in Media Arts Cultures. There in three months long semester, I have seen an opportunity to initiate the process of acquiring data for this research through an art experiment within the scope of an independent study as a starting base for my master's thesis. Being already intoxicated by the opportunities of the hybrid worlds, cyborgs, and alternate and disrupted realities, and already thrilled to explore it further, I have decided to intersect this comprehension that I previously acquired with my biggest passion, that is dance.

I wanted to explore the opportunities of moving and dancing in a hybrid world of virtual and physical, where I aimed to embody an alternative reality with my imagination. In accordance with these dualities of *physicality* and *virtuality*, *fictionality* and *reality* of the hybrid worlds, I have anticipated that I would not only experience being a cyborg dancer, but also anything that goes around in this world: Touching the air and touching my virtually embodied imagination... The physical surrounding space surrounding me, and the possible spaces that I am not aware of... The twisted energy, action and time… Anything that is inherent to my physical essence, yet did not fully have a chance to explore because of the same limiting inherencies of that *physical being*...

Even though I have not precisely been aware of the outcome of my practise, I have had a vivid perspective on the liberation of my body and movement from representation, expression and experience that dancing in a hybrid world would grant to me. Haraway suggests that *"the boundary between science fiction and social reality is an optical illusion"* and *"liberation rests on the construction of the consciousness, the imaginative apprehension, of oppression, and so possibility"* (Haraway, 2016, pg. 6) My motivation at the beginning was very parallel to how Haraway approaches the tight relation of imagination and social reality. I have believed that a science-fictional imagination that I embody through technologies and dancing would help me to *construct* an alternative *consciousness.*

Throughout this paper, I will clarify the role of my practice, *or construction of the consciousness through science fiction,* within this research, and how my personal motivation has first of all evolved into an artistic project. Later on reflecting on my practise, I will present the relevant inquiries arisen through these reflections, how it has evolved into a research question.

Demonstrating the link that I have aimed to build between *my science fiction* and *academic inquiries* would require me to draw briefly the context of my work. Although I will analyze this link in-depth in *Chapter 3* and *Chapter 4,* a brief introduction is necessary in order to present the motivations behind specific artistic choices that I will address in *Chapter 2.*

I will clarify in what contexts I use words *cyborgs* and *hybrid* in this paragraph. Tracking mainly the evolution of cybernetics as a distinct field in art and computer science from early 20th century until today, I will explore a general picture of how machine - human interaction and co-existence around the issues of *boundaries, ownership, control, and communication* has evolved within cybernetics. Providing a how cybernetics has evolved from a pseudoscience into a distinct scientific discipline will help me to identify and analogous process that I have experienced during my practise: An evolving understanding of myself from *a practitioner with two distinct interest, playing with technological toys,* into *a whole network of system that consists of machines and animals.*

However, this definition of cyborgs is not sufficient. How I refer *cyborgs* and *hybrids* in this work carries a further meaning than a literal and scientific definition. To be able to generate relevant queries in a humanities perspective on the aforementioned evolving perception, I will refer to works of Donna Haraway. In her article *A Cyborg Manifesto* written in 1985, Haraway provides a definition of cyborg that is physically abstracted from earthly context and urges to go beyond the definitions of traditional gender, politics and identity. (Haraway, 2016) Applying Haraway's approach on how an understanding of a cyborg could help going beyond *what it is,* and exploring *what it could be,* I will suggest *what movement experience is*, and *what it could be* in the world of a cyborg.

In order to apply Haraway's image of cyborg to reevaluate the movement experience on the search of *what it could be,* it is essential to address *what is is* first. Even though that requires an in-depth search in *the essence of movement* in a phenomenological sense, it would be highly unrealistic to assert that I will be able to capture this essence within the scope of this thesis. Therefore, I will retrospectively track the value attributed to movement throughout the dance history and aim to capture this phenomenon through historical and comparative analysis. I will track the evolution of movement from *representer of ideas* and *expressive of emotions* in Classical, Romantic and Modern ballet, to *an autonomous phenomenon of experience* in post-modern dance.

Since I am highly interested discovering further about *the inherency of my physical body* as I have mentioned above, I aim to build my inquiries through dance, since it is the *"most*

embodied" and *"dependent intimately on the state of human body"* as Marcos Novak asserts (as cited in Dixon, 2007, pg. 211). Dance in this discovery has two roles, a method and the subject of discovery. Celeste Snowber suggests a multifunctional utilization of dance in her article *Dance As a Way of Knowing,* and expresses that this method *"investigates dance as a form 'beyond the steps' yet includes steps"* (Snowber, 2012, pg. 54)*.* While applying dance as a method in the reflection of my practical work, I will highly benefit from her approach.

Throughout these reflections on my dance practise with the technology, I mainly aim to discover the *experience of a cyborg dancer.* What does this discovery further requires? Haraway carries out an in-depth analysis on the relation between *cyborg ontology* and *Western epistemology,* which radical and Marxist feminists has built their theories on. She expresses that the shift from *humans* to *cyborgs* has annihilated not only the Western epistemology, but also one's authority to interpret and construct politics on that epistemology: *"The transcendent authorization of interpretation is lost, and with it the ontology grounding 'Western" epistemology.'"* (Haraway, 2016, pg. 12)

In consideration of Haraway's argument*,* it is inevitable to do an analogous analysis on *the cyborg ontology* and *the Western dance epistemology.* Through this analysis, I will not only be able to discover *what dance is,* but also regain my *transcendent authorization of interpretation* to speculate *what dance could be* to a cyborg. Building on the historical analysis of the movement in Western dance, that I will present in *Chapter 3,* I aim to speculate an image of *cyborg movement.*

Within this work, I will highly refer *dance as my subject,* but meanwhile use *dance as my method.* Considering the progressively changing nature of movement in art of dance throughout history, and cumulatively enlarging understanding of movement phenomenon through philosophical inquiries, I will assert that how the application of media technologies into dance has provided a unique and powerful perspective that has enabled us to capture movement phenomenon within dance. Briefly presenting the early interdisciplinary initiatives of dance with science and technology, not only I will suggest that the application of media technologies has been a milestone for understanding movement as an abstracted phenomenon from human physicality, but also I will explore further possibilities that this phenomenon

could take an alternative shape and find an alternative meaning in a cyborgian context. An understanding of movement that is *abstracted from the interruption of other mediums* and *boundaries of physical body —a commodified phenomenon of Western epistemology—* will highly help me navigate and explore in *dancing cyborgs.*

In the following chapter, I will present how I applied practise as a method to generate data, and present an overview of how the chosen methodological approach has enabled me to develop a research question. To do that, I will move backward in time and reflect on the autoethnographic resources that I have created before and during my sketching activities. In parallel, I aim to depict the setting that has enabled me to pursue my practise, and to show the development of the material and technological setup of my art project which has helped me to embody these inquiries

2.1 - Brief Introduction to *Metalheart* Project and Methods

Without much preliminary research, I constructed a technological setup with the intention of further exploring the concept of dancing cyborgs. To generate the first network of the inquiries that I would address, I have decided to apply the iterative creative model suggested by Palle Dahlstedt. Dahlstedt in his paper *Between Ideas and Material: A Process-Based Spatial Model of Artistic Creativity* suggests a spatial model for creativity that requires a repetitive and iterative loop of creative activities around the domains of concepts and materials. Through this model, one not only embodies *a concept* through materials, also generate further possibilities through these embodied *material representations* that is likely to evolve into further *conceptual representations*. Embodying these newly inquiried concepts through material again within this iteration, the whole creative process turns into an opportunity of academic inquiry that could be pursued in a parallel thread. (Dahlstedt, 2012) Presenting the model of Dahlstedt briefly will highly help to clarify why I have made specific decisions regarding the sketching activities, most importantly, why I have started working with the material first.

The practical part of this research, the prototype of *Metalheart,* has been a result of repetitive experiments where I have physically performed and danced several times with the technology in order to explore a conceptual world, that I have aimed to evolve into an academic query. This conceptual world however, was initially an empty space. I have pursued numerous experiments, sketching activities, performances and dances for the sake of preluding into a bigger and coherent picture of a reality, where each tool, method of the practice and the experience overlaps with another. Indispensably, the *unique combination* of all these has operated to enlighten the a picture that I was looking for from various perspectives. Each combination, *of course metaphorically*, has served as spotlights that were illuminating a stage of *dancing concepts* from different positions, rotations and luminosity, and I was a mobile audience, or even a participant, who were able to analyze and participate in it in every aspect.

Eventually, I have found out that the domain of my exploration in the material world was severely shaped by the endless possibilities of roads that I take, since any minor variation in

the practise combined with the subjective world of me —*as a maker*— was shifting the context of the question and the possible outcomes. Dahlstedt entitles all the individual intersection of possibilities as *topologies* or *neighborhood relations*, where they collectively constitute a *network* in the creative world. He further asserts that within the types of explorations in the space of endless possibilities, the creative processes operates in two spaces back and forth*: in a material representation -"current form of the work storing temporary results in simplest possible form"*- and a *conceptual representation -"the current form of the work in terms of ideas and generative principles."* (Dahlstedt, 2012, pg. 4) Accordingly, during that repetitive process of *making* and *reflecting on* what is made, I have traversed in between the domains of *material* and *conceptual representation,* as Dahlstedt has suggested. This repetitive alteration in those two spaces has helped me —*this time as a researcher*— to spot out crucial, concrete scenarios to address within media arts cultures.

I chose to initiate my explorations by playing with the material and improvising, primarily because of two reasons. First of all, even though I was vaguely aware of my motivation as to *dance* and *hack*, I was unable to conceptualize it in any form of an *art proposal* or an *academic inquiry* before working with any material. The only assertion I was able to form initially was that *I wanted to create an intersection of technology and dance, and see what is lying further to explore within this intersection*.

To me the initial stage of my mindset has resembled a canvas, where the boundaries of paintable surface, the theme and artistic taste is clear, yet it is waiting to be filled with the first brush hit which would lead to further explorations. Dahlstedt also suggests a similar analogy of the creative process of a pianist basing on his own composition experiences. He suggests that the composition is started to be formed with the first the first touch to the piano key by either *pre-learnt ways of the hand* as Sundow suggested (as cited in Dahlstedt, 2012, pg. 8) *or unconscious ideas,* because "*the initial conceptual representation is empty before the improvisation.*" (Dahlstedt, 2012, pg. 8) Looking back at my first sketching logs that I have written right after the experiments, I clearly have believed that material itself without big assertions could provide me clues on the knowledge that I was looking for: *"... the material that I have made my hands dirty with are the materials themselves, but nothing more: not big assertions, manifestos, has to bes - just what they are."* (Kaya, 2019) At this

point, improvising and playing with the material accompanied by my artistic curiosity has played a key role for me to fill the *conceptual representation* and transform the *vague motivations* into *well-defined topologies of ideas* that would make a way to further inquiries.

Second of all, I have seen a unique opportunity at my previous knowledge and experience both at dancing and hacking. Even before this project, I have used improvisation as a tool of creativity both for dancing and hacking. However, I have not attempted to improvise parallelly with *dance* and *hacking* together in one project. The strong anticipation I had about the exciting prospective outcomes of combining the significant *know-how* in two separate fields has motivated me to improvise in such interdisciplinary manner: *dancing*, but this time *accompanied by what I have hacked*.

I was aware of that some years of hacking and dancing has created a wide *know-how* in these two fields. What I mean by *know-how* in this context is further than the theoretical or technical knowledge of the dance, or the precise knowledge of the programming language specifications. Doing these activities for long times has not only ensured the necessary skills to create something, but also it has developed some personal habits that are neither expressible in verbal language, not transferable as skill. This was my personal way of doing things in dance and hacking that I have consciously or unconsciously have developed, and the only way to embody these knowledge was to practise these knowledge. Schön in his book *The Reflective Practitioner How Professionals Think in Action* refers to this phenomenon as *knowing-in-action,* and he believes that the spontaneous behavior is the way that we could express and embody this knowledge to the outside world: With the *"spontaneous behavior of skillful practice we reveal a kind of knowing which does not stem from a prior intellectual operation"* (Schön, 1983, pg. 43). Through improvising spontaneously, I have aimed to reveal and utilize that *kind of knowing* for the inquiries that I pursue.

The practise has not only helped me to reveal my motivation and turn it into an art project, but also provided a valuable source of data which has later on evolved into a research question through an iterative process of self-reflection. At this point, it is significant to embrace a method in order to formulate the outcome of my practise in an academically applicable form. I have pursued *autoethnographic methods* to achieve this. Mariza Mendez in

their work *Autoethnography as a Research Method: Advantages, Limitations and Criticisms* expresses that autoethnographic entries in academic works are significant for a number of reasons. Autoethnography provides a gateway to the private worlds of the learners. Also through the researcher's direct access to the experience, autoethnographic materials acts as reference sources where one use as a starting point to pursue other ethnographic materials. Finally it is a powerful temporal gate between past, present and future (Méndez, 2013)

Since the academic inquiries raised in this work are heavily grounded on the reflection of my practise, I have seen significant benefit on utilizing it. As a means of temporal gate between *me as a human dancer* and *me exploring the cyborg dancers* I have used the autoethnographic material of the past, as well as, the materials that I have created during the practise. Throughout my iterative reflections on the autoethnographic materials of my past and current, I have been able to capture and formalize these two distinct experiences of dancing.

Addressing two methods that I have used to capture data, I would like to clarify further how I conducted the practise part of my work. In this process, I will not only present the specifications of my technical setup, theatre field, and my project plan, but also elaborate how all these activities helped my artistic motivation to evolve into a research question.

As stated above, the practice round of this research has been conducted in City University of Hong Kong. City University has a multimedia theatre in Run Run Shaw Creative Media Centre[1] building, that enables the performer to create highly immersive performances. It is a space with flexible stage that is capable of hosting 224 people seated, and more standing or sitting on the floor, and there are professional equipment of audio, video, lighting and motion capture facilities. With the capacity of movable lights, controllable light blocking curtains surrounding the four sides of the performance space, the space is well suitable for creating performances that requires complete isolation from references of the physical world.

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[1] Further information about the venue could be found in this web archive link:
http://web.archive.org/web/20170330013451/https://www.macostar.com/showcase/educational-institutions-churches/multimedia-theatre-run-run-shaw-creative-media-centre-city-university-hong-kong/

Being already thrilled with the idea of *dancing* and *hanking*, I have started working immediately after I have been introduced to the performance space. It was a space that is cut out for creating and exploring a hybrid world through dancing. A complete darkness and emptiness that resembled an empty canvas... Ready to be filled with the power of imagination and improvisation… Isolated from the physical world, yet ready to connect to the physical world. Following the first day I have visited the stage, I have devoted myself creating the project the following three months. In order to comprehend what I would be capable of in this space, the first thing I have done is to get the most information possible about the use of equipment and space in multimedia theatre.

There are two powerful projection devices placed in the space. The first projector is placed as typically how it would be in traditional cinema settings: at the back of the seating space reserved for the audience, which illuminates the projector screen that is right in front of the audience. The other projector is attached to the center of the ceiling, and reflects the visuals onto the floor. Both of the projector surfaces and the floor is covered with special grey material which is designed not to absorb the light and to reflect the most of it.

I have designed a 15 minute long three dimensional audio-visual experience, and created a system to control various parameters of this audiovisual experience such as the positions, rotations of specific virtual objects within the experience, the amount of illumination in the multimedia theatre, or triggering specific events in the virtual world, such *as the eruption of the volcano* or *rotating the sun around the world*. The system that I created to control the audio-visual experience consists of a mobile device, a modem router and a computer.

For the mobile device, I have written a program that detects rotation and acceleration in 3 axes, *x, y, and z.* While rotation sensor has provided me the where the mobile device faces in that three dimensional physical space, the acceleration sensor has provided if there is any speed change in any of these three dimensions. I have later on stitched a mobile device case to one of my old exercise gloves, and turned this mobile device into a wearable control interface. In *Figure 1* below, I have provided a picture from the final version of the assembled tools, or *the wearable control interface*. The rotation and acceleration data captured through this interface is later on networked using Wi-Fi connection over the modem

router, which the computer running the audio-visual experience is also connected to. Finally, the raw data of rotation and acceleration that is captured through the *wearable control interface* is processed and consumed in the audio-visual experience. In *Figure 2* below I have provided a representation of the system.

For the visualisation, I have chosen to reflect the audio-visual experience only onto the floor. Even though using multiple screens might have provided further opportunities of audio-visual output, I believed that might have resulted in a distraction of the focus, instead of generating further immersion. Therefore, I have chosen to perform only on one surface. After a few experiments, I have generated the highest immersion on floor projection.

(Figure 1 - Wearable mobile device to control the audio-visual experience)
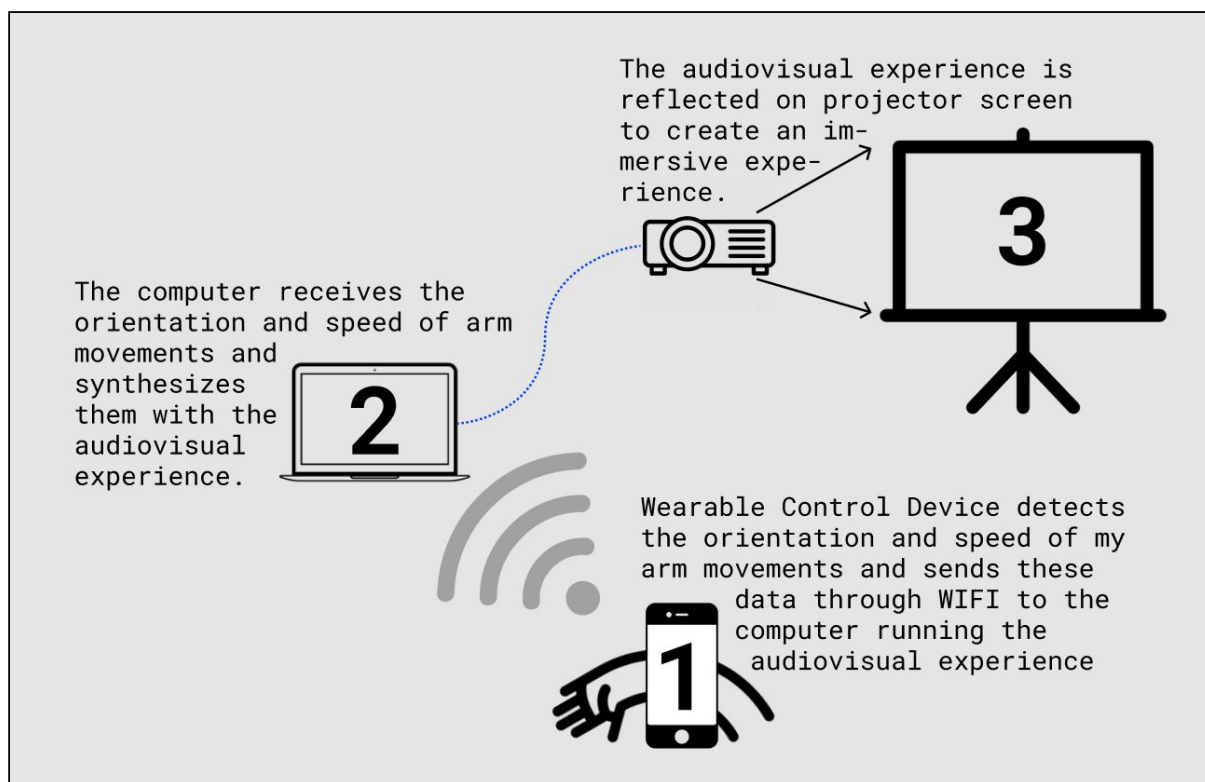
(Figure 2 - Overall sketch of the system)

In further paragraphs, I will be further presenting how my perception on the narrative of the audio-visual experience has evolved through a series of performances, and how this evolving perception of the narration has helped me to inquiry the issues of dancing in a hybrid world. However, in order to answer the question of *how* and *why* I have achieved that, I believe it is essential to show *what* I have done to interact with this audio-visual narration. Therefore, I have provided a few images below in order to show how I have consumed the raw rotation and acceleration data as a means of interaction within the audio-visual experience.

Even though how I call these objects do not necessarily define what they are in the alternative context that I have been looking for, I will call them as *heart* and *volcano* since these words are convenient to describe the virtual objects due to their physical resemblance. The first picture shows my interaction with the *heart*. For 3 minutes within the experience, the camera has followed the heart, and I have controlled the position of this heart with my arm movements. While the camera stays static in terms of its position, where it looks is locked to the position of the *heart*. When I move my arm to the ceiling, the heart also elevates in the sky. Following the position of the heart, the camera also shows the sky to the audience. In the

second picture, the amount of eruption from the *volcano* is bound into the speed of my arm. The more I perform motions with high speed, the more eruption occurs from the volcano. In the picture, the volcano seems to erupt, right after a sharp arm movement.

(Figure 3 - Interaction with the *heart*)   (Figure 4 - Interaction with the *volcano*)

In further chapter, I will make an in-depth analysis on the significance of my spontaneous decision to include and use sound. In the beginning, I haven't attentively reflected on the role of sound as regards to the experience and my movement. Since my motivation was to shape an experience around a single theme —*which I will reflect on and provide a self-critique of my motivation to pursue 'wholeness' and 'unity' in the following chapters*—, I have aimed to choose the material that would help me to shape this theme. Therefore, I have chosen music solely through aesthetical concerns, where I wanted to use metallic and raw sounds to tell a story of a *Metalheart*. I have used the songs *Brennisteinn and Untitled #2* of Icelanding minimalist experimental rock band Sigur Ros. The music within the experience is not used as part of any interaction, meaning that all the visual experience could have been experienced solely through movement interactions.

I have created the hybrid audio-visual simulation as further than an experience of movement interaction, but aimed to construct a narration around it. Even though the performer is able to interact with specific parameters of the experience as clarified above, the general flow of the experience is intended to narrate a possibility of an alternative world.

The first scene starts with a blur in effect where the visuals turns from a complete obscurity into a precise vision of the performer's avatar within this virtual world *(Figure 5)*. This effect is used as a means of performer's transition from the physical world into immersion with the virtual experience. After this long transition into virtual world that lasts around 2 minutes, the first interactivity starts with the sun. The position of the sun in the sky is bound the movement parameters of wearable control device, meaning that the performer is able to control the sun through an arm movement *(Figure 6)*.
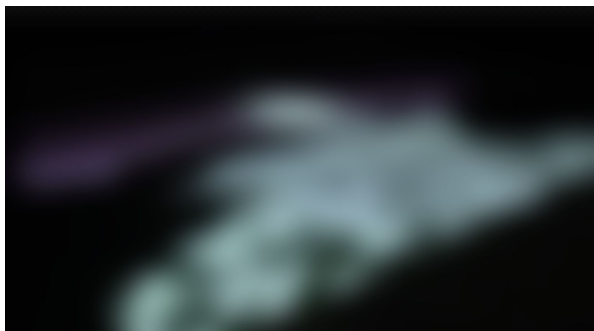
(Figure 5 - Start of the experience)   (Figure 6 - First interaction with the sun)
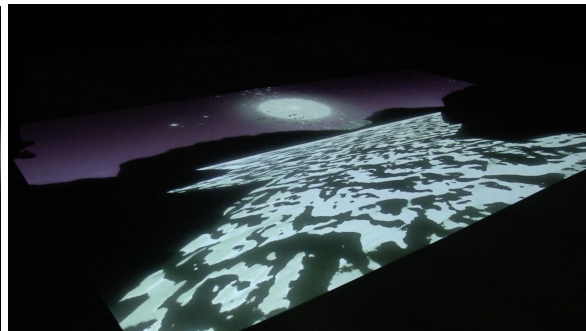
After this interaction, the virtual avatar of the performer starts a journey in this world and travels to different parts of it. Throughout this journey, a small heart shaped object accompanies the performer. Wherever this heart is located around, the vision of the performer shifts to that point. By this interaction, the performer is able to explore the virtual space from different angles. At this point the level of interaction is additionally increased. The performer is able to shift the amount of illumination in the sky through arm movement speed. The images to this interaction is previously shown in *Figure-3* and *Figure-4*.

At the end of this journey, the small heart object lands the performer to a vision of heart that is trapped within a metal cage that is also in heart shape, that is the *Metalheart (Figure 7)*. At this stage, the amount of interaction is increased by one more level. The eruption of from the metalheart, the size of the sun, the amount of illumination in the sky and camera zoom is completely controlled by the performer. Finally, the camera goes inside the *Metalheart*, the avatar of the performer unites with *Metalheart (Figure 8)*. In addition to parameters above, the camera rotation inside *Metalheart* is also bound into the arm of the performer at this point. At this stage, the all possible interactable parameters of the experience is bound to the

control of the performer. I have also documented and provided a few interactions in a web archive[2].

(Figure 7 - First encounter with Metalheart)   (Figure 8 - Unification with Metalheart)

When the technology setup and audio-visual experience is completed as a prototype, I have performed four times with audiences in Multimedia Theatre. The first performance was held without the floor projection, but instead I have used the cinema projection to reflect the audiovisual experience. Since the projection screen was physically distanced from me in the large performance space and the screen was placed 2 meters above the ground, I haven't fully been able to immerse with the audio-visual experience. There have been only two ways that I have been able to comprehend the effects of my movements. First one is when I faced the projection screen during the performance. The times when I faced myself away from the projector screen, I had to look at out of the corner of my eye from time to time in order to see my interaction. Second way I was able to see my movement output was through my computer screen. However, this screen was first of all too small, and the second has only showed my movement output in numeric representations.

In this form, there was neither a feeling of immersion, nor I was able to generate movement responses to the audiovisual outputs. Most interactions have occurred as me triggering the performance parameters, and not being able to comprehend the results of my actions. This has also felt as if there were two separate performances happening inside the space. The first one is a physical dancer performing, and the second one is a separate audio-visual accompanying in the background, as a music playing in the background. The general

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[2] https://web.archive.org/save/https://uggi-the-maker.blogspot.com/

feedback of the audience has also shown that the lack of physical proximity to the audio-visuals has highly hindered the interactive quality of the performance. In most cases, the audience has stated that they were not able to realize if an action within the audio-visual experience was caused by my movement, or solely accidental.

Being not able to see the results of my actions inside the virtual space and to isolate myself from the physicality of my body and the performance space, this performance did not serve any sensation of immersing into a virtual cyborg world, and interacting with that world through my movement. Therefore, I have decided to find a solution regarding the use of performance equipment to increase my immersion as a performer with the experience. Even though I have designed the audio-visual experience to be projected onto a vertical surface, I have decided to use the floor projection in order to achieve a higher degree of interaction and a feeling of performance immersion.

For the second and third performances, I have used the floor projection, and I have danced on top of the audio-visual experience. This choice has changed the way how the performance is perceived by the audience, and how I have felt during the performance. First of all, since I was directly on top of the visuals, I have not only seen the feedback of the system to my movements, but also felt closely connected to the virtual world. Due to this close connection with the virtual world, the actions of my movements has also developed together with the feedback of the system. I have not only danced together with the system, but also I have felt very together and unified with the system. Even though I was still aware of the physicality of my performance space and my body, I was able to detach myself from these and solely focus on how I am shaping that virtual world. Second of all, due to my proximity with the visuals and my immersed physical dance performance which has parallelly grown with the virtual the audience has stated that they have perceived the performance as a single happening. My first two experiences with the wall projection and floor projection has shown the significance of interconnectedness and fluent feedback systems for a cyborg experience, which I will further evaluate in the final chapter.

The final performance is held for documentation purposes. Through reflecting on these documentations, I have aimed to formalize my experience and the audience feedback within

an academic context and turn it into a research query. With the help of my colleague Daria Vdovina, we have video documented a series of performances. Even though the first three performances have already been videotaped throughout, we have focused on repeatedly documenting the parts of interactions that would most likely to evolve into the relevant research questions. In order to specify these parts of the experience to focus documenting on, I have relied on my performance logs and the audience feedback. We have aimed to capture specific parts of the experience from different angles and proximity, in order to provide the visuals that would help me recall my on time experience. From time to time, Daria has focused on capturing my precise body movements, facial expressions, gestures and mimics to document further than the performance and the interactions. We speculated that documenting how I bodily express myself as a performer would also give significant clues for further reflection.

In this chapter, I have presented how my initial motivation to work with dance and technology has further evolved into making and performing of project *Metalheart*. Depicting the technology setup, content of the audiovisual experience and my first interaction with the system, parallelly to the role of my two methods, *practise and autoethnography,* I have aimed to generally depict what I have done. In the following chapter, I will clarify how this practise has further evolved into significant questions.

2.2 - Reflecting on *Metalheart* Performance

After having and artistically and inspirationally fruitful semester with building and performing the *Metalheart* project in City University of Hong Kong, I have returned to Aalborg University for contextualizing the whole artistic and practical experience around an academic inquiry. In order to generate questions with significant academic value, I have aimed to determine how my personal experience and feedback of the audience might address to certain issues within the intersection of *dance, cybernetics* and *cyborg image* of Donna Haraway.

Detecting the correspondences to the academic matters requires understanding the personal experience thoroughly. Schön expresses that *"reflection on knowing-in-action goes together with reflection on the stuff at hand. There is some puzzling, or troubling, or interesting phenomenon with which the individual is trying to deal. As he tries to make sense of it, he also reflects on the understandings which have been implicit in his action, understandings which he surfaces, criticizes, restructures, and embodies in further action"* (Schön, 1983, pgç 50) As Schön suggests, I aim to make sense of *knowing* that has been implicit in my action, through pursuing a *reflection on* my *knowing-in-action.*

First of all, I have tried to understand my motivation behind pursuing an interdisciplinary work *dance* and *hacking*. Furthermore I aim to discover how this approach may lead me, *as a researcher,* to discover a relevant and novel context to build a research question on. Reflecting on the *motivations* and *possible outcomes* will help me to connect my personal experiences into a relevant discussions within the culture. Eventually, I aim to explore a common ground where anyone who hasn't either *danced* or *hacked* could also relate to.

Throughout these questioning, I have realized that it is this distinction, *or even conflict,* between *technology* and *performing humans* that produces the novelty of the output. Eric Mullis in his article *Dance, Interactive Technology, and the Device Paradigm* investigates the interactive dance performance *Glow,* made by Canadian contemporary dance group Chunky Move. He questions how the use of technology shapes the relation between performer, space

and audience around the terms immersion, interaction, and derivability, and points out to a tension, *or even radically,* a conflict in between*"two ontologically distinct creative forces"* that *"contribute to the work"*. Referring to term *Device Paradigm* of Borgmann he depicts tentious interplay of performers with *somatic identities, unique stories, various traits of personhood, gender, race, or ethnicity* as the *focal things,* and a completely *a-contextual* system of media technologies which could be replaced by any minute with another equivalent. (Mullis, 2013)

I have realized a significant motivation for me is to twist my interiorized understanding of dance through imagination and the power of *tension* caused by the interplay between the *focal* and *acontextual.* As much as I was excited to explore *what* I can build by using technology as my raw material, I was also thrilled to see *how* I could utilize that system of interconnected technologies to develop alternative ways to understand the essential elements of dance and performance. As Nam June Paik stated, *"The real issue implied by "Art and Technology" is not to make another scientific toy, but how to humanize the technology and the electronic medium which is progressing rapidly . . . too rapidly."* (As cited in Dixon, 2007, pg. 183)

Reflecting on my initial motivation has highly helped me to realize the opportunities that are likely to emerge the tension between two ontologically distinct creative forces*, human movement* and *acontextual technology*. Even though I use my dance practise as a case study in this work, I anticipate that a further discovery on *movement as a method of learning* would generate a common ground for any discovery uses movement as a method in the border of this tension. Therefore, I aim to address a few discussions on the value of movement in dance and explore how it would be possible to *learn from the way that we utilize it* as opposed to *utilizing it the ways that we have learned*.

Even though I will retrospectively present the meaning ascribed to movement in the following chapter, it is important to briefly discuss a few of them, as it is also relevant to understand the value of movement as a research method. Throughout history until postmodern dance, movement has been valued as much as it is able to *represent* an idea or *express* an emotion. Troika Ranch constructs an analogy on how the body of a dancer and

fingers of violinist is evaluated around the issue of meanings and representations. She suggests that *"when one considers that we look to the dancer's body for meaning"* we burden the performer to further clarify the meaning of their movement. This is a burden that Ranch expresses, *"we do not typically place on a violinist's fingers"* (as cited in Dixon, 2005, pg.197)

This analogy of Ranch could be applicable to other basic human act as speaking. When I speak, nobody has deeply focused on my act of speaking, and has gone through deeper queries on what it is supposed to mean. When a violinist performs their composition, it rarely opens up what they mean with that precise execution of the composition. While people rarely focuses on how my mouth is precisely shaped or how I intonate words and sound while I speak, my movement and body is radically judged by the shape that it takes, or its speed, rotation and its communication with the environment. My speech is mostly accepted as it is, a violin performance is captured thoroughly, but my movement is rarely did so. Is it because the movement is less of an incapable phenomenon than *music* or *language*? At this point I questioned why do I experience this deadlock in the first place. I have tried to understand what makes me forced to define my experience of movement through language or other mediums. Doesn't movement have a value as itself without the support of verbal, visual, ideal, logical or poetic endorsements? What could be the value of movement phenomenon that is embody solely through movement?

At this point, I want to note that I do not ask these questions with an artistic concern of a Modernist, who values the *purity* of movement. Just the opposite, I aim to discover the opportunities that arise through the heterogeneity of movement with other mediums and technology in this work. However, the modernists' contribution to dance to break the *universality* of expressions and representations in dance, and postmodernists' contribution to embrace its *particularity* and *experience* aspect of it is essential in order to explore how one could utilize it as a learning experience. Without their legacy, my work would be impossible. Having mentioned this, I want to return to the discussion on *what movement is* and *what is possible with it* in a phenomenological aspect.

As Snowber expresses, this is a kind of knowledge that can't *"just be told or read about; it must be experienced."* Focusing on the duality of *the lived body* and *the experienced body,* she further expresses that the Western cultural construct has caused humans to ignore the embodied knowledge which is originated from the lived experience, and instead to consider how the body looks like:

> *"We do not have bodies; we are bodies. However, one cannot live in Western culture and not take the impact of cultural constructs that emphasize what we look like instead of how we experience sensations through our bodies. It is clear that body knowledge has become endangered within the human species, and we are often alienated in our own bodies."* (Snowber, 2012)

Snowber's argument has been evident in my practise on a number of examples. As a significant part of my experience with the dance pedagogy has required using *metaphors* and *linguistic abstractions* for applying specific movements and feelings in my body, I have adopted these *metaphors* and *abstractions* as essential parts of the construction of movement. In the paragraphs below, I will mention a design choice that this reality is evident.

It is a user interface that I have created in order to assist the development of the wearable control device, and in *Figure-9* below, I have provided a screenshot from the mentioned interface. I haven't integrated this user interface to the final version of the system, and abandoned due to technical inconvenience and time limitations. However, I find this design process valuable as it shows how I have been dependent on *metaphors* and *abstractions* to understand and construct movement before.

As mentioned, the wearable control device is used to capture rotation and acceleration data of my arm, and used this raw data to interact with the audio-visual experience. During the sketchings and experiments with the wearable control device, I have created an interface that visualizes the captured raw data from the wearable control device. Even though I have initially developed this interface solely for debugging purposes —*to monitor all the raw data during the development phase of the project*—, the purpose of this interface has later on evolved into a canvas where I decode human movement through linguistic abstractions.
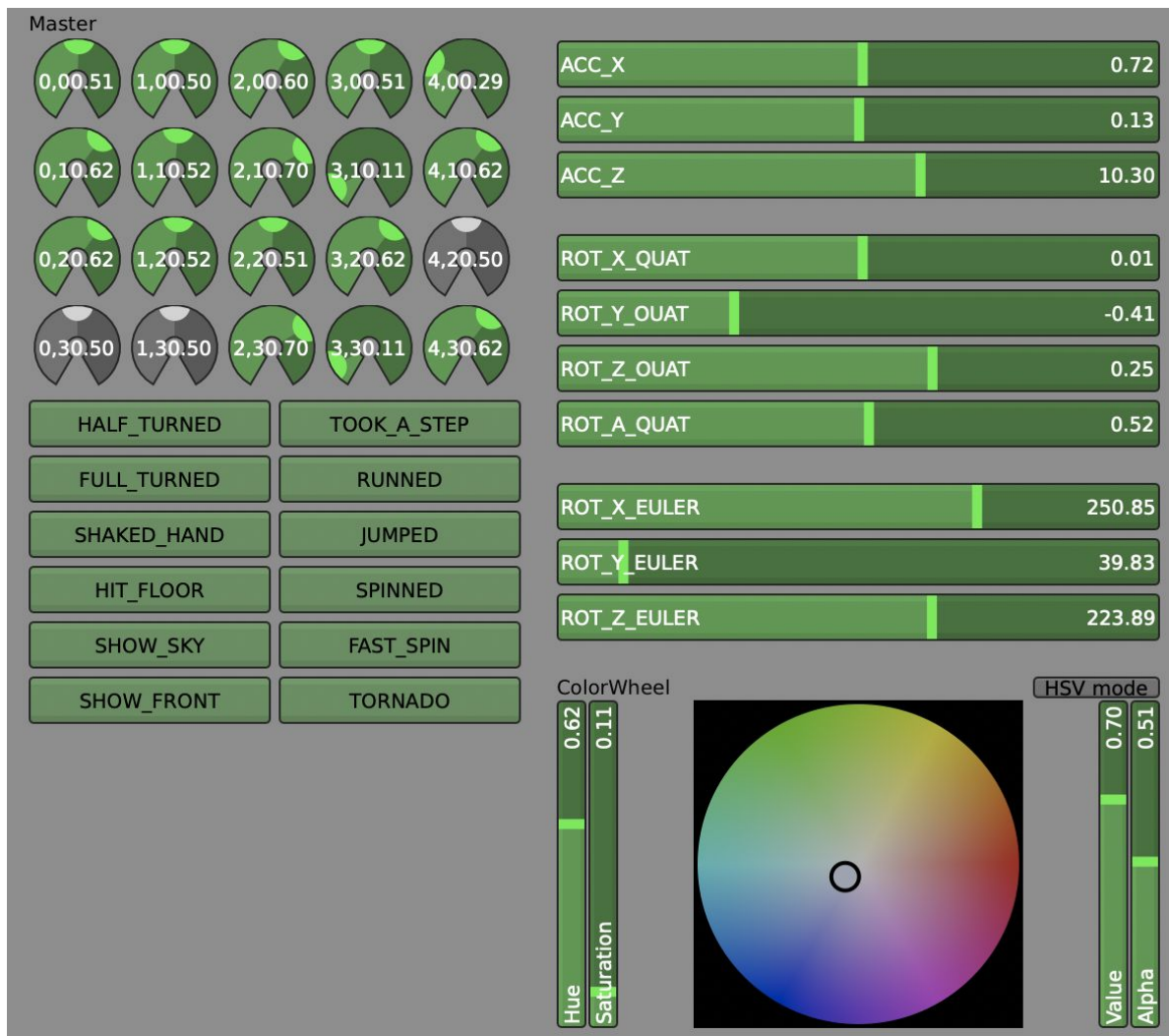
(Figure 9 - Abandoned interface that I abstracted movement through language)

On the right side of the interface, first block of three sliders represents the acceleration in three axes. The second block of four slider represents the rotation in *quaternion* format in three dimensional axes, and an additional rotation axis of the universe. The third block of three sliders represents the rotation in *euler angles* in three axes. Even though presenting the scientific base of these values stand might be helpful to clarify how the system works, it is not relevant at this point. What is significant is that these values represent the pure movement data through rotation and acceleration encoded in numerical form.

On the left side of the interface, I have used the circular blocks as channels to synthesize the raw movement data. I intended to use them as containers where I could apply a formula, synthesize with each other or simply network to another channel or software. With this I have

simply intended to play with data. However, this progressive synthesizing activity has later on turned into an effort where I have aimed to abstract movement with words.

Under the circular blocks, I have created trigger buttons that would emit events —*a computer science term referring to the occurrence of a condition that would trigger further processes.* For our case, an event is a case where specific movement combinations are performed. The language abstractions for movement combinations to emit events are written on each button. When the computer detects that a combination of movement as *shaking hands, hitting the floor, showing the sky or forward, taking a step, running or jumping* is performed, it emits the specific events that could be bound into a desired audio-visual parameter.

Even though I have initially designed the interface for debugging purposes, my motivation to capture a minimal essence of movement from the human body as a raw data has later on turned into an effort to re-embody movement through language abstractions. Trying to subtract anything that inherently is not movement as *music* and *physical space*, I have blended my movement with *language*. I have somehow *liberated* the essence of movement from the context of physical body, yet *chained* it back to the domain of language.

How does abstraction of language functions for the phenomenological discovery of movement? In addition to movement's inability to be *told or read about* as Snowber argues, there are further reasons why this abstraction should fail methodologically. John Langshaw Austin expresses that *"even the most adroit of languages may fail to work in an abnormal situation"* (Austin, 1950, pg. 12) My practise evidently epitomizes how *an adroit language use may fail to work in an abnormal situation.* During the performance, the language constructed referencing the physicality of the space and my body has completely mismatched to the virtual experience, which is built on the tense border of the conflicting ontologies *human* and *technology.*

Turn in dance refers to a full 360 degree rotation around the *Y-axis* in the concrete space. Spin and tornado, on the other hand, are achieved through continuous turns. Pirouette, a similar movement in classical ballet to spin in ballroom dancing, is defined as *"a turn or series of turns travelling 360 degrees on one leg. The non-supporting leg is usually bent with*

the foot touching the knee of the turning leg." (Craine, D., & Mackrell, 2010) By this definition, I assume that my fictional world exists in a concrete space where a full angle is 360 degrees, and a cyborgian performer that is somatically analogous to humans. Similarly by *jump,* I assume the existence of gravity. With the abstractions of *hit the floor,* and *show the sky* in formal use of language*,* I assume that the alternative world is material where there is a sky to show, and there is a solid ground to hit.

As abstracting movement through linguistic constructions has failed to work in the mentioned *abnormal situations,* I have decided to solely use the numeric representation of the movement in space through raw data. This choice has had a significant consequence. As I have not focused on defining and understanding the movement in advance, it has created a domain for *reflection in-action* as I move and *reflect-on* my *reflection-in-action* after the performance.

How would movement ever provide one to reach into a source of knowledge? Snowber states that *"kinesthetic knowing is central to being human, and the beginning of dance is found in the wide expression of gestural language. While one can lie with one's lips, it is almost impossible to lie with the body"* (Snowber, 2012)*.* Also, Martha Graham expresses that *"Movement never lies. It is a barometer telling the state of the soul's weather to all who can read it"* (as cited in Snowber, 2012) What makes movement this straightforward of a medium that it inevitably reflects one's untouched knowledge? More importantly, what source of human land that this movement is originated from, and what kind of knowledge that we are able to capture from this *barometer?*

Maxine Sheets-Johnstone in their book *The Primacy of Movement* reformulates movement as *"primal animateness"* and expresses that it *"infuses our being and defines our aliveness".* He suggests that this *primal animateness* constructs the base of our *"epistemological foundation of our learning"* and further expresses:

> *"We literally discover ourselves in movement. We grow kinetically into our bodies. In particular, we grow into those distinctive ways of moving that come with our being the bodies we are. In our spontaneity of movement, we discover arms that extend, spines that bend, knees that flex, mouths that shut, and soon. We make sense of*

ourselves in the course of moving. We discover ourselves as animate organisms."
(Sheets-Johnstone, 2004)

If movement is *a barometer* that originated in our very primal beings, and a very powerful tool that constructs the base of our *epistemological foundation,* this means that we can utilize movement in order to explore the very uninhibited territories of that very primal being.

Through pursuing a *reflection in-action* on my movement, I have been able to bypass all these layers of knowledge that I have inherited from the abovementioned dance pedagogy. However, an important question arises when we consider this reality with our previous inquiries on the tacit knowledge that I have presented above sections. Is our movement completely free from our tacit knowledge which is originated either from *pre-learnt ways* as Dahlstedt suggest, or *prior intellectual operation* as Schön suggested? Isn't my tacit knowledge of moving also shaped by how I have taught or experienced the movement phenomenon until now? When I move, can I make sure that this movement reflects the uninhibited domains of my being, or it is shaped around these interiorized models *how tos* and *how not tos*? I highly doubt that the answer is the former.

At this juncture, how could one go beyond the tacit movement that is either originated from *preleant ways* or *prior intellectual operation?* Snowber expresses that *"in experiencing, there is as much unlearning to do as learning"* (Snowber, 2012, pg. 55). To further reach the uninhibited domains of our being, we have to question, break apart, and unlearn these pre-learnt ways and the outcome of the prior intellectual operation. Experiencing movement for unlearning would require a parallel critical process, where one should not embrace the movement experience as is, but be open for further understandings.

Finally, I briefly want to discuss *the role of imagination* within this *unlearning* experience, as a way to construct alternative realities for destroyed through this unlearning process. In this part, I want to question how the gap caused the unlearning could be reconstructed through movement, imagination, creativity and fiction.

If we are able to capture the essence of *what it means to be human in this world,* as Snowber expresses, through bodily awareness, what would it require to take one more step, and explore *what could it mean to be cyborg in hybrid worlds* through this same bodily awareness*?* What would be the role of movement, or the *primal animateness* as Sheets-Johnstone formulated, in this *imaginative* and *fictional* cyborgian scenario?

In order to reach to these extensive inquiries, I want to return to my practise and briefly present how it has helped me reach into the queries of the role of *imagination* and *fiction* on creating the alternative realities. I will present my improvisation and sketching activities on designing the visual experience, in order to build the general context of discussions on how *fiction* and *imagination* could be means of further movement realities

I have chosen Unity for being the most documented available software free license for creating three dimensional interactions. I have chosen working with three dimensional simulations so that I could map the simulation into all three physical dimensions. In two dimensional settings, I would be able to overshadow that I can see. However in three dimensional settings, by also including *the depth* into play, I would not only see, but also physically get closer to my virtual world.

After deciding on working with a three dimensional virtual simulation, I started the first round of sketching with the Unity software first to explore what is possible to achieve with it and to master the tool. I started with building basic primitive shapes such as cubes, spheres and pyramids, where I have aimed to twist their specific parameters through movement interaction. When my mastery with the tool has further evolved, I was able to work with more complicated shapes and three dimensional models. Realizing that, I started importing free models that I have found online. I have taken a model of heart, and created two prototypes of hearts with it. I also imported a model of an animal deer and manipulated its skin, color and structure.

Below in *Figure-10, -11, -13 and -14*, I have provided the first versions of the imported models, and right next to them, how they looked after a few sketching attempts. Even though I haven't precisely used these prototypes as presented here within the experience, tracking

how they have evolved during the sketching has opened significant questions on how I have *currently* perceived them, and how I could *alternatively* perceived them. The more I have implemented my imagination on their nature, the less they have resembled their physical counterparts or how they would act in the physical world.

(Figure 10 - Original heart)   (Figure 11 - Manipulated hearts)
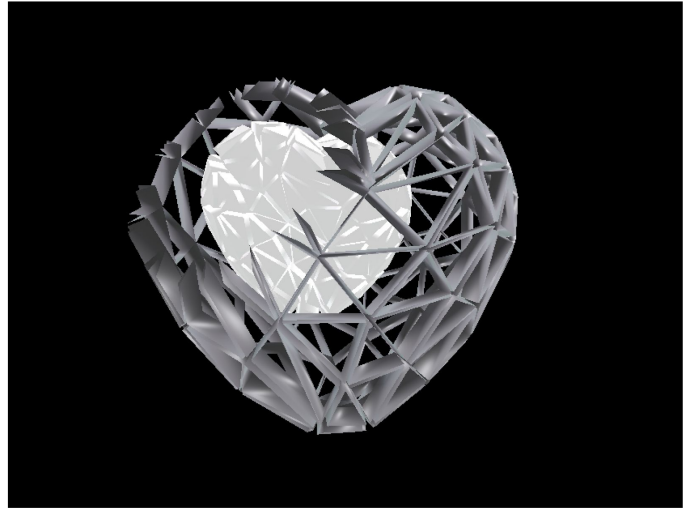
First of all, I have manipulated their meshes. Mesh in 3D computer graphics refers to a collection of vertices, *or points,* edges and faces that define the final shape of a virtual object. When vertices are combined, they constitute edges, and those combinations respectively create faces, polygons, surfaces and the final shape of the object. Below there is a representation of how these elements are hierarchically positioned relatively towards each other. I have divided the heart into two, and separated its surface from its center. Changing their scale and shivering each polygon of two, I have created two interwoven fragmented hearts prototypes of that heart.
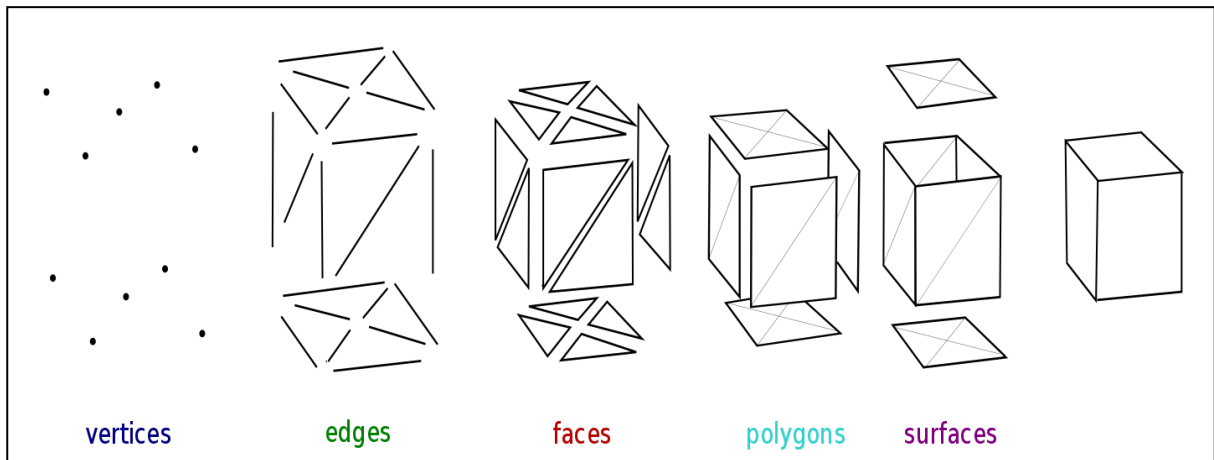
(Figure 12 - Elements of meshes *Retrieved from Wikipedia* [3])

Later on, I have experimented with their materials. Materials in 3D computer graphics are used to simulate how a particular mesh would reflect the light. While for the hearts I have preferred to use physical material simulation to create a metallic appearance, I have chosen to use dynamic and interactive material for the deer. Each polygon on the skin of deer is covered by a preset of chosen abstract images, and I have written an algorithm to pick an image for each polygon depending on the input coming from *wearable control device.* When I have moved my arm, the skin of the deer has resembled a kaleidoscopic illusion, which the control of what you see is bound to how much you move its slider.

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[3] https://web.archive.org/web/20190416141347/https://en.wikipedia.org/wiki/Polygon_mesh

(Figure 13 - Original deer)   (Figure 14 - Manipulated deer)

Getting familiar with constructing physical objects in virtual environments, I have developed an understanding of the physical objects as interconnected phenomena instead of single and uniform commodities. Through *rendering* its mesh, its mass and volume is specified. Through applying *materials*, and *normal maps* we specify how it is perceived by the eyes. Through specifying the algorithms of *physics simulation*, or object's precise interaction with that simulated physics, we simulate gravity. Through specifying their *collusion* behaviours, we construct how these objects interact with each other. The understanding of physical objects as interconnected phenomena has further developed as I have twisted or completely omitted some features of them.

Understanding the simulation layers to construct a virtual twin of a physical object has opened alternative understandings to comprehend the *physical* as more than a single, uniform and static entity. When I have twisted the apparence, physics and behaviour of these objects, and dynamically interacted with them, I have realized that their context and meaning has also significantly twisted. I have used deer as a lava erupting from a volcano. From two prototypes of the heart, I have created an entity that I call *Metalheart*, which was a red, living, beating organism that is trapped within another heart shaped cage. Ironically, these

two prefabs, *one beating and living entity,* and *the* other *deadly and dark cage,* was produced from the same model of heart.

By utilizing virtual simulation technologies, I have created my fiction through an audio-visual medium. However, this understanding of the twisted pieces of reality and the ironic contradictions has turned into a lived experience when I for the first time have performed inside. By utilizing interactive interactive technologies, I have had a chance to participate within this fiction. It was an *uncanny* feeling of *satisfaction* to experience this alternative reality through my movement. It was uncanny, because nothing has looked, behaved or meant as how I am used to perceive through my physicality. It was satisfactory, because it was a world that I have created through my imagination, and nothing has felt utterly alien. When I have immersed within this experience, I have asked myself numerous questions right after the performance:

> *Why did I create this absurd narration nothing makes sense? Why Metalheart? Why metal, why heart? Why is all that contradiction? Why am I obsessed with creating these contradictions, the absurd fictions and ironic relations? Why do these volcanoes erupt deers with rainbow skins? Why is it so colorful?*

> *Why am I flying? Am I flying? Can you fly somewhere there is no discrete gravity? Is it possible not to fly here? Would I be able to ask this question to someone in this world? Would they understand what flying is, if there is no duality of flying and landing? Why there is a sun above, and why is it not moving normal? How would a sun move normally?*

> *Why am I not feeling as I am dancing? Am I not dancing anymore? What am I doing if not dancing? Why I feel like I am dancing as the whole space? Am I the space now? Am I diffused into the space of this world? Where is the boundary separates me from the "others"? Am I the volcano, deer, the sun? What is this uncanny feeling of being complete, being one, being the space, being the time, being myself, and being the others at the same time?*

Through reflecting on these questions further, I have realized that my experience of dancing inside that twisted physicality has pushed me to inquiry for new meanings on my movement experience with that fictional world. My movement has always been contextualized and embodied within the limited physicality of my body, staticness of space and time, and purposes of representation and expression so far.

Within the fictional simulation, the capability of my movement has reached beyond the limits of the physical body as I have erupted volcanoes, located the sun in the sky or flew over the seas. I have been able to control the time, and the space that surrounds me. At some point, I haven't been able to detect what separates me from the space and from the others, since that space is completely synchronized with my movement.

Through this vague boundaries, I have experienced my movement for the first time outside of my physicality. For the first time, movement has gone further beyond being a *mediator*, and is *mediated* through the audio-visual medium, and I have experienced it to understand the nature of a hybrid world. As Sheets-Johnstone suggests that *"we make sense of ourselves in the course of moving"* and *"we discover ourselves as animate organisms"* (Sheets-Johnstone, 2004) through movement, *I have discovered and made sense of myself in the course of movement as a cyborgian organism.* I have not only experienced my movement in a mediated context through an interactive audio-visual medium, but also has learned a lot about my cyborg being through this experience.

However, it is significant to inquire the value of this fiction that is purely based on my imagination on the establishment of an alternative epistemological foundation. How can one assert to create an alternative meaning of a movement experience that is solely contextualized through a fiction, one that contains various contradictions and irony? For Haraway, that irony is a powerful *"rhetorical strategy and a political method"* that *"is about contradictions that do not resolve into larger wholes, even dialectically, about the tension of holding incompatible things together because both or all are necessary and true".* Fiction, on the other hand, is separated from social reality through a very fine line, and more radically, *"the boundary between science fiction and social reality is an optical illusion."* If we are to create fictions through *"construction of the consciousness"* and *"the imaginative apprehension",*

we turn it to a social reality through *"lived experiences"* of this fiction. (Haraway, 2016, pg. 5-6)

In the following chapters, I will present movement's journey from being a medium of expression and representation into a subject of experience, and how this experience could be a constructive tool in the alternative fictional realities that we create through the above mentioned *construction of the consciousness* and *the imaginative apprehension.*

3 - Movement: From Mediator to the Experienced

In this chapter, I will present the history of how movement has evolved from being a tool of expression that is considered inferior to language, into a subject of experience that does not necessarily depend on the existence of a meaning, representation, expression, and strict restrictions of form. During this historical journey, I aim to focus on the breakthrough movements that has highly contributed to the evolution of movement's value within the history. Meanwhile, I will present the evolution of the value of movement in my understanding during the sketching activities. Correlating these experiences and the long history of movement within dance, I aim to formalize my movement experience into a critical process, where movement as an experience could be used to break the meaning, and construct alternative ones.

As I have done in the previous chapters, I will construct the starting point of the discussion on my experiences. To do this, I will provide my reflections on my experience with movement in the past, *as a physical one that is based on the Western dance heritage,* and today, *as a hybrid one that is based on the critical reflection of not only the legacy of that heritage, but also the multimedia that my movement is contextualized around.* After that, I will depart from my experiences into an historical and phenomenological journey, where I aim to build the ground that would help me to speculate on the *future* of dancing, *as a critical activity.*

While I will the history in a chronological method in order to track the correlation between events and phenomena in history, I will present my experience with movement in the sketching activities and performance through inquiries emerged, as reaching into the historical discussions has required rounds of reflections on my experience. I want to start by presenting the role of sound and music within the experience, as my first inquiries on my movement experience has emerged through my reflection on the use of music.

Briefly, music in this setup is neither used as a mean of parameter input through synthesizing, nor a feedback mechanism of the cybernetic system. How I have decided to use music within the setup has further significance primarily in two senses. First issue is why I have included music within this experiment, even though I haven't directly integrated it into the interactive

system. The second issue is why I haven't directly utilized it as a synthesized parameter input or a cybernetic feedback. While the former issue is on the role of music within my experience, the latter is about the significance of how I have chosen to utilize it.

Since I have aimed to investigate my interaction with the hybrid space through movement only, I have tried to bind the parameters of audio-visual interactions solely on my movement. One of the software that I have used, VDMX, is an high-end tool that is primarily used to synthesize sound and visuals. Even if it was simple and convenient to synthesize the musical output and reflect the change on the visual feedback via VDMX, I chose not to blend other types of interactions than movement for the sake of experiencing the interaction free from anything, but movement.

Does the fact that it is not synthesized within the system mean that the music and movement are two independent and autonomous phenomena? If not part of the cybernetic system as a parameter input or feedback, what is the value of music within this experience? At first, I have believed that music has helped me to generate the initial material representation of my movement as a source of inspiration. However, my further reflections has shown that music for my movement has been further than an inspirational resource. I was not inspired by the music, but more radically, I was dependent on the music to move. Inheriting the legacy of classical Western dance taught, and primarily exercising this legacy as a ballroom dancer, I have almost always danced to the accompaniment of music. For me, to completely exclude music from dance was a new idea. In a way, music has been a prerequisite to operationalize my *tacit knowledge* of moving. I not only needed music to generate initial material representation of my choreographic creative process, but also to keep the creative process alive.

Reflecting on the role of music in this experience has been a significant twist regarding my perception of movement, its origin and essence. It has felt contradictory that I have aimed to base every interaction in the experience on my movement, yet I was dependent on music to be able to generate movement. Exploring *my dependence on music* as to move in addition to *my motive to abstract movement linguistically* as I have presented in the previous section, I have decided to pursue a historical analysis on the value and form of *movement* in order to

spot the certain paradigms in the Western dance that I have inherited. Understanding this legacy will provide the context that I will pursue a reflection and self critique of my movement activity within this research.

In the rest of this chapter, I will track the evolving value of movement within history, from ideal representations of Classical Dance and poetic expressions of Romantic Dance into a subject of experience in Modern and Post-modern Dance. Parallelly, I will present the developments in dance that has aimed to break the formal constraints of music, theatre space and costumes. Contextualizing movement within cyborgian realities as an *unlearning,* and as a *constructive learning* experience requires distancing from the ideas that subordinate movement solely to representation, expression and formal constraints.

Body in Socio-Cultural Context Throughout the History

"Dance is the art that is most embodied, dependent intimately on the state of human body" expresses Marcos Novak (as cited in Dixon, 2007, pg. 211) If dance is intimately dependent on the state of the human body, understanding the value of movement requires a deeper inquiry at this source, human body. Therefore, in search of the essence of movement and how it is embraced as an independent method of bodily expression today, one has to understand the history of socio-cultural value of body and embodied experiences.

Turner in his book *The Body and Society* shed light upon the value of body in today's Western society discussing the contradicting dualities of *"body and soul, the body and mind, matter and spirit, desire and reason"* throughout history. For Turner, these dualistic values are the legacy of Christianity and industrialization, and they are valid not only in society, but also in the very essence of basic Western culture and philosophy. (Turner, 2008, pg. 24)

The value of body in western civilization is highly influenced by the dualistic approach of Hellenistic Christianity. Turner suggests that the flesh is *"the seat of unreason, passion and desire"* in Hellenistic Christianity and it is a thread to the world since it represents the moral corruption. The only way to avoid this is to discipline the body by means of diet and abstinence. (Turner, 2008, pg. 38) Turner further suggests that the opposition in between

flesh and spirit in Christianity is similar to the opposition in between *body and mind* in philosophy. (Turner, 2008, pg. 38) The body and mind duality of the modern times originates from the thoughts of 17th-century philosopher and mathematician Descartes, where body is not only separated from the mind, but also subordinated to it: *"Cogito ergo sum." (I think, therefore, I am).* Turner expresses that the intellectual legacy of the Cartesian revolution has given *"a privileged status to mind as the definition of the person ... and an underprivileged status to the body which was simply a machine."* (Turner, 2008, pg. 48)

The opposition in between body and mind, and minds privileged status as we know today might have been addressed by the Cartesien rationalists, however the premises of this duality could be traced back to Ancient Greek philosophy. Burt comments that poem *as the art of mind and language* is superior than dance *as the art of flesh* for Aristotle, and further expresses that in Ancient Greek, poetry was the highest form of art. (Burt, 2006, pg. 18) Also for Ancient Greeks the body has thought to be struggled between *form* and *desire*, between *Apollo* and *Dionysus.* (Turner, 2008, pg. 38) This struggle in between *form* and *desire*, *how it is* and *how it is supposed to be*, is embodied in moral inquiries at Ancient Greek. Aristotle in Poetics, defines poetry as an art of imitation, and suggests that the purpose of this imitation is to depict *"men either as better than in real life, or worse, or as they are."* (Aristotle, 1920)

From Ancient Greek to Hellenistic Christianity, and from Cartesian rationalists of Renaissance until the post-industrial societies, the dualistic contradictions of *body and mind, flesh and spirit,* and *desire and reason* has shaped the culture and sphere of the Western world significantly. Being the most embodied art discipline which is intimately dependent on the human body as Novak expresses, the value of dance and movement has been shaped in a very parallel context.

Embracing movement as a medium to express an emotion, character, action and idea or a tool of representation is a rooted approach throughout history. For Burt, it is the dualistic contradiction in between the tangibility of *body, flesh, desire* and intangibility *mind, spirit, logic* that *"underpins the idea that the dancer has a feeling which the dancing body then expresses".* (Burt, 2006, pg. 15) Indeed for Hellenistic Christianity, what good would human flesh as *the seat of unreason, passion and desire* could express without the help of spirit?

Indeed for Ancient Greeks, why dance, sing or tell a poem, if in the end I will not become better by virtue of the represented morals? Indeed for Cartesian Rationalists, how could human body, *simply as a machine,* could produce anything meaningful without the help of logic?

Aristotle has expressed that *"dancing imitates character, emotion, and action by rhythmical movement"* (Aristotle, 1920) and argued that body imitates, represents or express what is deep down inside. Marianne Goldberg, on the other hand, has decisively took her stand against this duality two millennia later: *"My inside is not a little bird fluttering in my chest – it is chockfull up and down the length of me. My inside comes all the way to the edge of my body, through the columns of my limbs, my neck, my torso, and the bulb of my head."* (as cited in Burt, 2006, pg. 15)

In the following chapter, I will track the history of how the *"Cartesian notion of the mind as the ghost in the body's machine"* (Burt, 2006, pg. 15) is rejected in favor of the autonomy of body and movement from *mind, spirit, morality, representation and expression*. In order to do this, it is essential to track the history of how the value of movement has evolved throughout the centuries from simply being a tool of representation into a medium of expression, and finally how movement and body has gained an autonomous value in itself as a way of experience.

Movement in Classical and Romantic Dance: A Tool of Representation and Expression

The roots of today's Western dance is to be found in the Renaissance courts of Italy, where ballet as a formalized dance discipline was originated and spread around Europe to France, Russia and England. Throughout the centuries until today it has evolved in different schools with its precise vocabulary of movement, timing and action around a highly technical form. Since its formation in the 16th century until today, movement in classical ballet has been used both as a medium to reinforce the social, cultural and political values of day. Therefore, the movement has found its value in the power of representation, which has been significantly shaped by zeitgeist.

In order to understand the values that movement has represented throughout the centuries, it is essential to look at the social, economical and political circumstances of each time. A transformation has started at 14th century, by which art has broken away from *"the barbaric ... or uncivilized"* Gothic medieval art into a secular *"rebirth of classical GrekoRomen art and life."* during the early Renaissance. By virtue of the nostalgia for the ancient classical times, *imitation* and *invention* have played a significant role in the revitalization attempts of the classical values, such that, *"invention is in part defined by a fidelity to classical ideas, and imitation is in part defined as an ability to act as classical artists did, not necessarily to copy them per se."* (Jackson & Hogg, 2010) The significance attributed to *imitation* in the early-Renaissance has inherently attributed the value of movement through *gaze* instead of *experience.*

A significant result of this transformation has shown itself in the theme of art, as art of the time *"must serve an ideal, either religion or some consciously held esthetic idea"*, and thanks to secularization brought by Renaissance, the art has been liberated of *"allegiance from the principles of religion"*. (Horst, 2004, pg. 1) It was by virtue of the secularization that art was no longer controlled by the Catholic Church and been freely shaped by the ideas of where it has been transferred to. Mentioning that ballet as a *full and formalized form of art* has appeared in France for the first time, Horst also touches briefly how dance has reflected the ideas and themes of the lands that it had arrived:

> *"It was the union of the lighter, though patrician art of the south with the more vigorous, though sometimes plebeian art of the north, that brought forth this new social rite, known as the court dance. It was a blend of the rich brilliance of Italian life, the sombre, religious emotion of Spanish life, the rude intellectual vitality of the Netherlands, and the pastoral serenity of English ideals. To this must be added the influence of the popular art of the Troubadours and their Courts of Love in France, and the dance-tune hymns of Martin Luther's Reformation in Germany."*

(Horst, 2004, pg. 4)

From its birth in Renaissance court rooms as *dances with general classifications* to its fully formalization of *"proper steps for each dance, and the proper strict form for the music"* in France (Horst, 2004, pg. 5) and finally through its spread over the world in the following centuries, movement in classical ballet carried a significant value of representation. In the following paragraphs, I will analyze the form of movement performed in Classical French, and Romantic Danish ballet schools, and unfold how *form of movement* is significantly shaped by the socio-political ideas and trends of the time, and how it is used as a tool of *representation and expression*.

17th Century: France & Sun King The Louis XIV

The foundations of the formalization of ballet as an art form has started for the first time in *Académie Royale de Danse* which was established by Louis XIV who became absolute monarch of France in 1661. (Needham, 1997) When Louis XIV came to power, he has intended to politicize any kind of religious, social and cultural events for the sake of his *"personal prestige"* and therefore, bringing *"glory to France"*. Meredith Ellis Little mentions that *"when he came to power in 1661 he vowed to make France the most magnificent and powerful country in the world"* (Little, 1975, pg. 331)

Even though he has exercised his absolute authority on shaping the sphere of almost all fields of arts, Louis XIV has acknowledged dance as the most effective way of displaying his personal power and prestige. In his letter to the parliament on the establishment of *Académie Royale de Danse,* he expresses: *"'it is (dance) … the most advantageous and useful for our Nobility"* (as cited in Needham, 1997, pg. 180) Louis XIV, known as an *"excellent dancer"* at his time, has *"frequently presented allegorically as a noble and valiant leader, powerful in battle and righteous in peace."* (Little, 1975, pg. 332) Despereaux depicts King Louis XIV's presentation of the dance *Passacaglia,* which is known as a *"dance of imposing majesty often executed by a gentleman alone",* as following: *"In the costume of a God, dancing solo at Versailles, With grave, majestic steps, the solemn Passacaille."* (Horst, 2004, pg. 108)

Right after gaining his reign, Louis XIV has signed the document that established the academy and appointed academic *"experts … met regularly to deliberate on ways to improve*

artistic standards, which they then set for others emulate", and strictly supervised the education and technical qualities of the dancer, in so much that, he signed multiple declarations to the academy mentioning his concerns on some dancers' *"gross errors in form".* Furthermore, he required that any new choreography had to have passed an aesthetical and technical judgement before it is performed or taught. Needham expresses that this strict regulation of the formation was a measurement of censorship, *"not necessarily of content, but of form alone."* (Needham, 1997) The fact that the censorship implemented was mainly on the form of the dance, instead of the content of it, reveals that movement in 17th classical dance has found its value in the power of flawless representation of noble, majestic and glorious body forms. Little, further asserts the form of representing body as following:

> *"The underlying attitude of the dancer was nobility of spirit, which meant devotion to the King and to France, coupled with a sense of pride in one's own being. In standing, this nobility is expressed in an erect posture which is neither stiff nor slack, with the head set squarely on the shoulders, not tilted upward in disdain nor downward in humility. The body is in a state of balance, with the weight directly over both feet and the arms held down at the sides, approximately equidistant from the body. All extremes are avoided, so that the hands are half open, the feet and hips are rotated slightly outward (but not as far as in modern ballet technique). The effect is pleasant and strong, and the dancer is in control of his body. All of these qualities-nobility of spirit, discipline without disdain, balance between opposing forces, avoidance of extremes-denote classicism, and state eloquently that dance was at one with other arts of the realm such as literature, poetry, drama, painting and architecture."* (Little, 1975, pg. 333)

19th Century: Danish Romantic Ballet as an Expressive and Poetic Art Form

Even though records of court ballet performed in Denmark dates back to the beginning of the 16th century, and classical ballet is performed by Italian and French ballet masters in various companies and theatres from 16th until the 18th century, it was the beginning of 19th Century when the Danish ballet has formed its own *artistic idioms* and *technical virtuosity.* (Craine & Mackrell) When Antoine Bournonville, a Danish ballet and choreographer, has brought ballet

to Denmark in the first half of the 19th century and caused the development of the term *"the Danish way of dancing"* (Guerreiro, 2016), European art and culture was significantly shaped by the Romantic ideas and movements. Bournonville's *"exceptionally long and productive"* years in theatre under the influence of Romantic ideas, with more than 50 pieces, has created the *Danish Golden Age* that has even survived the radical rise of realism in the second half of the 19th century. (Tobias, 1997)

The *'ethereal', 'supernatural', or 'otherworldly' aspect of the Romantic aesthetic"* (Lee, 2016) has highly influenced the movements and narrations of the Danish school of Bournonville. In the dance La Sylphide -*the story of a Scottish farm man falling in love with a magical spirit*-, the lightness as a theme has been engraved into the execution of the movement. Dancers in La Sylphide dance with continuous movements and execute syncop jumping steps smoothly in order to create a floating feeling. The representation of lightness is so apparent in Bournonville's dances, insomuch that Erik Bruhn, a dancer and a writer, expresses that: *"In dancing Bournonville, the dancers often feel they spend more time in the air than on the floor."* (as cited in Guerreiro, 2016)

Representation in the movement of Romantic ballet of 19th century has gone hand in hand with the expression and narration. Amanda Lee, in her article *The Romantic Ballet and the Nineteenth-Century Poetic Imagination* clarifies how two French poets Theophile Gautier and Charles Baudelaire aimed to develop a point of view on dance as a *"poetic language and attempted to translate danced movement into written poetry"* (Lee, 2016) Calling Marie Taglioni -*the dancer impersonating la Sylphide*- as *"one of the greatest poets of our age"*, Gautier implies that movement has a similar communicative power with the poetry conceiving of *"dance as a poetic language charged with expressing 'the ineffable' in verbal language, poetry, and more recently, critical theory."* (Lee, 2016) Gautier and Baudelaire's approach on dance as an *embodied poetry* highly resembles Aristotle take on movement in Poetics, which suggests that dance is an art that imitates emotion through movement.

It is crucial to understand the way that movement is used to embody the imaginative world of poetry. Amanda Lee suggests that the term *"movement markers"* which is developed by the dance historian Lisa Arkin could help further clarifying the poetic use of movement in dance.

Movement markers in dance are those which are used *"to designate stylized gestures, attitudes, and steps that nineteenth-century choreographers used to signal specific national dances ... to their audiences"*. For Lee, movement markers in Romantic ballet frequently used to create the above mentioned themes of the Romantic ballet which are identified as *poetic* by Romantic poet. (Lee, 2016) For the Marie Taglioni, with the role of la Sylphide, appears and escalates over the stage in an *arabesque* pose by the help of a lifting machine, Alfred de Musset observes:

> *"She is a soul that floats. She is a flame that flickers. She doesn't traverse the air at the end of a wire, like her companions, and yet, while barely leaving the ground, she flies much higher than they are in the sky"* (as cited in Lee, 2016)

Even though expression has got ahead of representation in the Romantic dance, the body of a dancer has still been burdened with a transmission of a universal phenomenon. Movement has been a portrait of flawless representation in Classical dance , and a carrier of a captivating poem in Romantic dance. Only with the Modern and Postmodern movements, dance has been brought into the domain of performer as a phenomenon of experience. In the following section, I will present this transition.

Mediator Becomes the Experienced: Movement in Postmodernism

In 2012, the audiences in a public park called High Line in New York has witnessed a performance, where a small group of ad hoc dancers form a structure of human pile that resembles a rugby scrum by clinging their arms and legs tightly to one another. While one performer slowly tries to climb to the top of the pile, the others firmly try to balance their coordination in order to support one another. In the dance *The Huddle* of Simone Forti, performers freely move in a virtuosity-free manner, and perform in a casual practise outfit. There is no music, and there is no stage. The performers are surrounded by the audience who are people walking by. The *huddle* of people collectively moves around the park, as the dancers improvise their movements.[4]

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[4] https://web.archive.org/web/20190427093414/https://www.thehighline.org/art/projects/simoneforti/

Steve Paxton, American dancer and choreographer, who participated twice in the performance *The Huddle* expresses that the experience made himself feel like *"belonging to a swarm of bees"*, however, he further adds that Forti has never associated *The Huddle* with a metaphor:

> *"We were performing in a metaphor-free zone. This attitude was new… It seems more intriguing, more pleasurable, to me to encounter work whose source I don't recognize, of which I therefore have no memory. When such works are encountered, the mind has no tools to assess the experience. It feels naked"* (as cited in Wagley, 2018)

Since Aristotle's approach on movement in the Poetics, until the Classical and Romantic schools' definition, *expression* or *representation* has always been criteria to value the movement in dance. However, Simone Forti, as a representative of Postmodern dance, renounces any valuation of movement by the criteria of *representation* or *expression*, and emphasizes the *experience* aspect with her dance *The Huddle*.

A significant question at this stage to ask is how the value of movement has transformed less than a century? While still at the end of the 19th century, the virtuosity in the technical precision was still a significant criteria for the assessment of movement and dance was still acknowledged as an art form of theatre stage, how come it has come to a stage that a pile of performers improvising movement without any technical consideration in an open space could be considered valuable as dance? How have the dancers of the 20th century rejected the longstanding duality of *body and mind* or *flesh and spirit* in favor of a non-dualistic experience of body and mind?

In order to understand the mentioned transformation of the role of movement in dance, it is crucial to mention two significant art movements, *modernism and postmodernism*, which has radically shaped the dance. Haraway expresses that postmodernist theories have played a significant role on the erosion of *"phallogocentrism of the West, with its worship of the monotheistic, phallic, authoritative, and singular work, the unique and perfect name."* How does this art movement shaped the Western legacy in dance?

Sally Banes in book *Terpsichore in Sneaker* signifies the importance of postmodernist movement in terms of its contribution to dance through conversation with other art disciplines. She expresses that *"repetition; alogical structures; simultaneous events; the primacy of the visual in theater, noise in music; real objects surfacing in painting; and the detritus of the quotidian world that provided material for Happenings could all be translated by the young choreographers into dance terms"* (Banes, 1980, pg.9)

In accordance with Banes's argument, it is clearly not that dance has evolved into an alternative path out of nothing. Zeitgeist brought by the postmodern movement has brought a prevalent change in all art disciplines. Fredric Jameson in his article *Postmodernism or the Cultural Logic of Late Capitalism* expresses that postmodernism is further than a movement in art, but rather *" a cultural dominant: a conception which allows for the presence and coexistence of a range of very different, yet subordinate. features."* (Jameson, 1984, pg.3)

If postmodernism is a cultural dominant, rather than only an art style, our analysis of the postmodern dance should provide two parallel ground of for further inquiries. Exploring the image of dance in postmodern time should not only present how it has evolved as an art discipline, but also give significant clues about this dominant culture. In the following section, I will not present the postmodern dance in-depth, but rather analyze the effect of postmodernism as the dominant culture through the dances of Merce Cunningham.

Postmodern Dance in the 20th Century & Merce Cunningham

Postmodernism of 20th century has been highly influential in dance regarding the issues of performer's presence and role on stage, the method of creative process, improvisation, the relation between public and private space and the universality or particularity of the themes. To understanding the discussions that have arisen around these issues, I will first of all address the significance of modernist movement in terms of its contribution to twist the very fundamental paradigms Western dance. Later on I will briefly present the influence of postmodernism as a *dominant culture, as Jameson's point of view,* to reexamine the discourse that these issues are embodied within.

Introduction of postmodern ideas in dance has not always occurred through sheerly *anti-modernist* initiatives. Even though choreographers as Pina Bausch and Trisha Brown has frankly *"set up as paradigmatic opposites where innovative dance practice is concerned"* (Burt, 2006, pg.1), there has been choreographers as Merce Cunningham who has partly embraced the practises of modernism, yet still has been highly influencial on the introduction of postmodern ideas into dance. A significant creative method of postmodern dance, *improvisation,* has not been valued in Cunningham's creative process (Burt, 2006, pg. 14) Furthermore, Cunningham's partial commitment to the formalism and aesthetics of Modernism were still recognizable on his dance syntax of composed of mostly balletic figures. (Banes & Carroll, 2006, pg. 56)

Banes and Carroll argue that Cunningham belongs to category of postmodern dance in spite of his recognizable practices that he inherited from modernist ideas. They express *" if one thinks of postmodern choreography as an experimental reflection upon the nature and limits of dance, then why should Cunningham's work have any less claim to the title than that of Yvonne Rainer, Steve Paxton, or David Gordon?"* (Banes & Carroll, 2006, pg. 50) Indeed, his keen interest in experimental *reflection upon the nature and limits of dance* is apparent on the contrast of his work to Martha Graham. Even though Cunningham has danced in the company of Martha Graham, who has been accepted as a pioneer in modern dance, Copeland suggests that *"the most revealing contrast"* that one can observe in Cunningham's dance *"was, once again, with the work of Martha Graham"*:

> *While Graham and so much of the modern dance world exuded a sentimental primitivism, a longing for lost Edens (or at least a yearning for a long-lost sense of "the organic" the natural), Cunningham seemed fully reconciled to the city. What might have struck Graham as urban blight became for Cunningham a potential delight, a source of complexity. There were no rhapsodies to the world of lost unity or wholeness; but rather a celebration of fragmentation and simultaneity—an acceptance, in other words, of the world we actually inhabit.* (Copeland, 2004, pg. 35)

Cunningham himself has planted the seeds of the ideas of postmodern dance not only formally sponsoring the classes, but also providing artistic strategies that has that has cultivated the postmodern ideas in movement, which have finally and solidly been embraced in postmodern schools as Judson Dance Theatre. (Banes & Carroll, 2006)

What is the significance of categorizing Cunningham's artistic practise as *modernist* or *postmodernist?* Further than the categorical classification, understanding the relationship between postmodernism *as the dominant culture of the time* and Cunningham's work will be key to apply Haraway's image of cyborgs into dance domain. Therefore, I want to illustrate significant characteristics of Cunningham's dance which I assert that substantially embodies a number of significant cyborgian notions of Haraway.

Excessive isolation of human body parts in Cunningham's choreographies have been considered *revolutionary* against the organic, divine and holistic understanding of the human body. Copeland observes that in Cunningham's dance *Untitled Solo,* the dancer's *"head, arms, and legs appeared so oblivious to one another that they could have been grafted together from three different bodies, moving at three different speeds".* He expresses that the different parts of the body in Cunningham's dances have almost looked assembled by a cubist practitioner. (Copeland, 2004, pg. 26)

Unlike *"the body, especially the naked body, functioned (...) as the very symbol of 'naturalness'"* in the art of the late 1960s, *"Cunningham never embarked on a quest for the most "natural" way of moving".* Copeland expresses that the body and movement in Cunningham's dance *"rarely seemed guided by a 'natural' sense of flow",* and *"often seemed willfully inorganic".* Accordingly with this notion of *unnatural* and *inorganic* appreciation of human body, *"the most fundamental differences between human beings and inanimate objects were virtually ignored"* in Cunningham's dances (Copeland, 2004, pg.35).

Copeland expresses that a key characteristics of Cunningham's choreographies is the incompetency of perceiving various elements in a coherence due to the necessitation of *"the competing and often irreconcilable claims being made".* The existence of *competing and irreconcilable* elements in his choreographies was apparent not only the generation and

sequencing of movements, but also how he has integrated other mediums and supporting elements to his dance. Graham's dances, the sculptural settings and decor often seemed to be *alive, organic* and *as an extension of the human body*, as part of this organic holism. In Cunningham's dances on the other hand, these elements were not embraced as parts of an organic totality, yet *"possess an inner dynamism",* and dancers have seemed to *"aspire to the quiet, inanimate elegance of objects."* Similarly on the value of sound and music, Cunningham does not embraces music as an essential part of the performance of movement, on the contrary, he asks his dancers to focus on performing without the accompaniment of *"seemingly random, easily distracting eruptions of sound"* (Copeland, 2004, pg. 36) Schiphorst similarly expresses that Cunningham's dances *"could relate to existing music, co-exist with unrelated music, or could have music composed especially for the piece."* (Schiphorst, 1986, pg. 21) Even though Cunnigham values sound as *random, distracting and eruptive,* he uses music in most of his choreographies, as though manifesting his commitment to *competence* and *irreconcilability.*

Copeland argues that Cunningham's an inorganic and multi-focused organization of performance space has significant impact on the audience's attention and role as regards to the performance. Focusing on the distinction between *looking* as an activity *"connoted an active, agile, and voluntary use of one's eyes"* and *gaping* as *"implied stupefaction, passivity, perhaps even hypnosis",* Copeland argues that Cunningham's dances forces audiences to *look* instead of *gape:*

> *"Cunningham's organization of stage space promotes looking rather than gaping. By rejecting Renaissance models of perspectival space, he avoids creating what Giorgio Vasari called 'magnets to the eye,' the sort of vanishing point that lures visual attention involuntarily upstage. While watching a Cunningham piece, one tends to scan left and right rather than zooming in on a single point set in deep space."* (Copeland, 2004, pg. 37)

What is the value of audience's participation through *looking* instead of *gaping?* Copeland suggests that the communication that Cunningham has built with his audience is an embodiment of the theories of Bertolt Brecht, who rejected *theatrical synthesis*, yet favored

autonomy of elements and *emotional detachment.* Through *looking* instead of *gaping,* audience in Cunningham's dances are not subjected to the performance through *emotional attachment,* just the opposite that are forced to actively participate, and spend individual effort on the interpretation of the performance.

Cunningham has had a keen interest in working with media technologies. Thecla Schiphorst on his work that addresses the use of computer technologies within dance, where he analyzes *LifeForms* project initiated by Cunningham, expresses that Cunningham's interest on computer dates back even 20 years before initiating the project (Schiphorst, 1986, pg. 25) Cunningham's vision on the fusion of technology and dance has generated a twisted understanding of the physicality of the human body as a privileged commodity. Copeland suggests that *"Cunningham seemed to acknowledge that the privileged place of physical presence in our lives had been challenged—perhaps irreversibly—by electronics."* (Copeland, 2004, pg. 35)

When Cunningham's approach on the various elements of dance and their relationship with other mediums and art fields are analyzed comprehensively, I agree with the scholars who assert that Cunningham's artistic vision shows more parallelity with the *cultural dominant of* postmodernism. Accordingly, evaluating Cunningham's dances in modernist context fails to notice significant issues that Cunningham approaches through his work. Copeland argues that the reviewers who assume the role of *sound* and *decor* in Cunningham's dances exist *"to support and better illuminate the movement"* misses out the fact that his work is mostly about *"the nature of interference, static, signal-to-noise ratios, audio/visual discontinuity—and about the habits of attention one needs to cultivate in an urban environment of unceasing sensory overload"* (Copeland, 2004. pg. 42)

As I have mentioned above, embracing Cunningham's works within a postmodern context contains further significance than constituting a taxonomic classification. In this thesis, I aim to construct an image of cyborg dancing in a hybrid world. As much as Haraway's image of cyborg constitutes the methodological base of this work, Cunningham's artistic vision helps me to illuminate the path to this construction within the field of dance. Postmodernism, on

the other hand, provides the link in between an artist and a political writer as constituting the *cultural dominant* that I also intend to adopt in my construction of cyborg dancing.

Having presented the significance of Cunningham's dances around postmodern ideas, in the following chapter I aim to analyze Donna Haraway's political construction of *cyborgs* and study her methodology of this construction. Further than providing the methodological base, this analysis will be significant in terms of presenting Haraway's critique of Marxist and radical feminism in a postmodern worldview. Furthermore, I will briefly enter the domain of cybernetics, as I believe studying of *cybernetics as a scientific and practical field* and *cyborgs as a fictional, ideological and political construction* comprehensively will highly be beneficial to link the outcomes of my reflection in the final imagination of my *cyborg dancing*.

4 - Haraway and Cyborg Movement : Application of Haraway's Cyborg Image for a Political Movement Construction

Donna Haraway in her article *A Cyborg Manifesto: Science, Technology, And Socialist-feminism In The Late Twentieth Century* depicts the future of cyborgs mainly within the scope of gender issues, challenging the precedent movement of thoughts, that centralizes the purpose of generating an organic and holistic unity among women through rejecting the industrial and technological advancements. Favoring the heterogeneity, she argues that an image of a cybernetic woman, *"a hybrid of machine and organism",* could be a powerful means to transgress the polarizing dichotomies of gender and boundaries. (Haraway, 2016)

How could Haraway's notion of cyborg that she imagines as an effective mechanism of liberation be applicable to transgress the physical boundaries of a dancer? Even though the article is mainly focused on challenging Marxist and radical feminist notions of the resistance, she argues that her depicted myth of cyborg could be further applicable: *"My cyborg myth is about transgressed boundaries, potent fusions, and dangerous possibilities, which progressive people might explore as one part of needed political work".* (Haraway, 2016) Indeed, if *"the cyborg is not subject to Foucault's biopolitics; the cyborg simulates politics"* as Haraway argues, embracing cyborgs as the base of our ontology should inherently comprise relevant political inquiries.

Furthermore, Haraway's critique of the previous political models and the way she constructs her cyborg politics is tightly relevant to the inquiry of the body. As I have presented the historical bound of body and dance in the previous chapter, I will not further focus on that issue. However, one question that Haraway asks significantly proves how her image of cyborg could illuminate the way we understand dance: *"Why should our bodies end at the skin, or include at best other beings encapsulated by skin?"* Along this line, I want to ask this question: *Why should our movement be encapsulated within the boundaries of our skin?*

Haraway expresses that *"social reality is lived social relations, our most important political construction, a world-changing fiction".* Through my lived experience of being a cyborg performer, a *"matter of fiction and lived experience",* I have aimed to challenge the social

realities of a dancer that has been deeply rooted in the dichotomies of body and soul, the body and mind, matter and spirit, desire and reason, and issues of identity and representation through the history. If the *"social reality is our most important political construction" (Haraway, 2016)* as Haraway argues, challenging this social reality should bring along relevant political inquiries as well. That inquiries, constitute the center of politics of a *cyborg movers*.

In this chapter, I aim to explore how my experience with the technologies and performance could be further reflected on to construct this cyborg ontology. To do that, I will address *cyborgs* within the scope of cybernetics. Later on, I will further reflect on the questions suggested in the sections above to explore how my lived experience as a *cybernetic entity* could be used to generate the *politics of cyborg dancer* in Haraway's notion.

First of all, I want to express the significance of this brief introduction to the field of cybernetics, as I feel highly incapable to define define *what* I am doing, in other words, to build the mentioned cyborgian ontology, solely though neither by *dance* or *information technologies*. Even though I have conducted my activity parallely within fields of dance and information technologies, cybernetics has given the most inclusive ground to contain those parallel inquiries within one framework.

The roots of cybernetics as a field of science is built by the pioneers of the field as *Norbert Wiener, Ross Ashby and Stafford Beer*. Each scholar has contributed to the field of cybernetics under a broad umbrella of its intersection with engineering, psychology and management. Seeing not high relevance in introducing to the field in a technical sense, I will avoid profound definitions of what a cyborg is within those fields. Instead, I will address Gordon Pask's notion of cybernetics*,* as he mentions most of pioneers definitions and approaches to the field, and provide a broader definition to understand what cybernetics is, and what the area of interest of a cybernetician.

Pask in his article *An Approach to Cybernetics* expresses the subject of this field as any system that is *"either constructed, or so abstracted from a physical assembly, that it exhibits interaction between the parts, whereby one controls another, unclouded by the physical*

character of the pans themselves." (Pask, 1961, pg.15) The scope of *parts* in this definition is more clearly expressed in Norbert Wiener's *Cybernetics: or Control and Communication in the Animal and the Machine.*

To clarify the necessity of a field that would provide a ground to work within the intersection of various fields, Pask generates a hypothetical narration in between two personas, *X and Y,* where two discusses on *" building a cybernetic model of some region of the brain".* In this narration, Y insists that X should be either an electrical engineer, or a psychologist, therefore the system should be able to defined through the terminology of psychology or electrical engineering. While X argues that the system is *"not readily describable in terms of psychology or electronics",* Y believes that *"X is bad at psychology and bad at electronics and a little demented".* (Pask, 1961, pg. 16)

From the creation of the system, until performing my artwork, I have had a very similar struggle of definition and identification regarding what I was doing and who I was. These struggles of definition has emerged during both my own reflection process and exchange of ideas with the practitioners and theorists in the dance field. Even before creating the work and performing it, I have had multiple conversations with these people which has been the indicators of the mentioned confusion that I was going to experience during the creation and performances. When I have introduced my work in a conceptual way to the dance professionals, I have received essential critiques regarding my activity in the context of dance: *How could I transmit emotions through machines? How could I focus on bodily experience of dancing while being attached to devices, and being surrounded by giant machines? Why was dancing not enough by itself, and why I needed the support of technology?*

These inquiries have been later on concretely embodied during the performance. Most things were happening simultaneously, and I was unable to make sense of what I was doing. I previously anticipated to be dancing, no feeling of the experience has exactly matched to how I have perceived the experience of dancing in physical space. No rule of what I have known as dance were valid here. My spatial awareness was completely lost. My focus on the body were diffused in a larger domain.

Haraway argues that epistemologies are significant indicator for showing the limitations of identification while constructing revolutionary standpoints. Her critique on Marxist and radical feminist movements is centered on the invalidity of the *search of an innocence* and *a wholity,* which she argues that *"has done enough damage".* While Marxist feminists epistemology has based on an ontological structure of *labor,* the radical feminism has built this ontology on *sex.* (Haraway, 2016)

For Haraway, building an epistemology on ideas as Marxian humanism, which is *"pre-eminently Western self"* has failed in two ways. First of all, they have only succeeded to serve a partial explanation. Second of all, eventually all these movements could not avoid constituting totalities. (Haraway, 2016) Haraway expresses why it is not anymore possible to base her politics on a solid ground through following Marxist and radical feminist views as following:

> *"With the loss of innocence in our origin, there is no expulsion from the Garden either. Our politics lose the indulgence of guilt with the naïveté of innocence. (...) What kind of politics could embrace partial, contradictory, permanently unclosed constructions of personal and collective selves and still be faithful, effective—and, ironically, socialist- feminist?*

> *I do not know of any other time in history when there was greater need for political unity to confront effectively the dominations of 'race,' 'gender,' 'sexuality,' and 'class'. I also do not know of any other time when the kind of unity we might help build could have been possible. None of 'us' has any longer the symbolic or material capability of dictating the shape of reality to any of 'them.' Or at least 'we' cannot claim innocence from practicing such dominations. White women, including socialist-feminists, discovered (that is, were forced kicking and screaming to notice) the noninnocence of the category 'woman.'"* (Haraway, 2016)

What happens when *"the geography of all previous categories"* has been completely denatured, as *"heat denatures a fragile protein"?* Through this inquiry, Haraway expresses

that revolutionary politicians should resist against the organic and holistic standpoints in order to construct alternative epistemologies. For cyborg feminists, they have to *"to argue that "we" do not want any more natural matrix of unity and that no construction is whole."* (Haraway, 2016)

When interpreted together, Pask's approach to cybernetics as a new scientific field and Haraway's approach to cyborgian women as a constructive political tool, the same fact lies at the core of the formulation of their theories. Pask resists the holistic explanation to a scientific phenomenon solely through terminology of one science, and Haraway rejects basing her political theory on the legacy of Western epistemologies. Both scholars express that inability of previous categorizations to ground new formulations, and express the need for a new ground. While Pask focuses on the need of a brand new scientific methodology, Haraway expresses this need within the scope of politics.

But why previous categorizations are not able sufficiently meet the demands of new inquiries? What makes a scientist unable to build their theory on the enormous legacy of previous scientific methodologies, and a political activist/writer to look for further epistemologies. At the center of changes, there lies the same ontological breakthrough: *cyborgization*. While the former transition is scientific, and the latter is political. However, both of these revolts were inevitable. Both scholars needed to base their epistemology on an alternative ontology, which does not lie on the categorizations based on the dichotomy of an organic percept of human, and mechanical and acontextual percept of machines.

At this point, I want to return to my experience and its reflection. I believe, my aforementioned confusion regarding *my role within the system* and the *essence of my activity* in this performance was caused by the same phenomenon: *a lack of a cyborgian movement epistemology to understand myself and my activity.*

Western dance epistemology is constructed on an ontology of organic humans. While the value attributed to this organic entity is changed throughout history, it has significantly affected the epistemology that framed the aesthetics of dance and philosophy. Sun King The Louis XIV has seen the body of a dancer as a signature of his majesty and power, which has

caused dance to be valued through perfect representation of form. The romantic dancers have seen body as a treasure of feelings and emotions, which have caused dance to be valued around its capacity to express those emotions. Postmodernist dancers have seen body as a powerful tool of experience, which has shaped value of dance accordingly around this experience.

Meaning of body has significantly shaped the value of dance throughout history. However, at a time where the boundaries of this physical and organic human body is questionable, it is also unavoidable to reconsider any phenomena that is contextualized around that ontological base. Haraway argues that *"in a fiction where no character is "simply" human, human status is highly problematic"* (Haraway, 2016). What is the role of the human body in a cyborgian / hybrid world? Is constructing the meaning of a cyborg dancer solely on the base of an organic human body possible? I highly suspect that.

Cybernetics as a scientific field has emerged, as methodologies of engineering and biology alone has failed to cover the inquiries of hybrid entities. Similarly, Haraway has constructed her politics on a brand new epistemology, as *"pre-eminently Western"* organic and holistic salvation epistemologies has failed to meet the realities of cyborg women. In a world where *"our time, a mythic time, we are all chimeras, theorized and fabricated hybrids of machine and organism—in short, cyborgs"* and where there is *"no origin story in the Western sense"*, I assert that construction of an alternative epistemology of movement is inevitable (Haraway, 2016).

In the following section, I aim to analyze Haraway's perspective on cyborgs, and her application of this fictional-political image in constructing alternative ontologies to base the politics of cyborg dancer: *"the cyborg is our ontology; it gives us our politics."* (Haraway, 2016) Within this cyborg, *"the relation between organism and machine has been a border war. (...) The stakes in the border war have been the territories of production, reproduction, and imagination"* Around the confusions arisen through this *border war* between me as the animal entity of the cybernetic system, and the machine, I aim to question and construct the *politics of movers*.

Pleasure, Responsibility, Language and Movement

Before envisioning the epistemology of cyborg movement, I want to return to previous discussions on the role of movement as a method of learning and unlearning in dance, and how it correlates to the image of Haraway's cyborg as a political constructive tool. Understanding this correlation will provide a model / method to operationalize movement for building the cyborgian movement epistemology.

Haraway expresses that her construction of a cyborg as a political tool is based on the *"pleasure in the confusion of boundaries and for responsibility in their construction."* While the *"subtle understanding of emerging pleasures, experiences, and powers"* is an effective way to create the *"ambivalence toward the disrupted unities mediated by high-tech culture"*, taking responsibility means *"embracing the skilful task of reconstructing the boundaries of daily life, in partial connection with others, in communication with all of our parts".* (Haraway, 2016) In Haraway's model, one should take the responsibility of construction and connection of their *self* within itself and with others, while continuously enlarging the ambivalence towards the dominations of existing social realities, through pleasure of experience.

How can one apply this multiple process of *creating ambivalence toward the existing* and *reconstructing through responsibility* to generate inquiries regarding the evolving nature of their movement through movement itself? At this point, I find it beneficial to return to the reflection of my practise, as I have similarly experienced these parallel processes within my activity.

Before revisiting my practise around this model, I would like to clarify a crucial point regarding my stance towards the applicability of my experience to others' experiences. Even though my experience and the reflection on this experience have been key to comprehend the value of my movement as a cyborg, I do not aim to formulate a universal model of cyborgian movement that is based solely on my own interpretation. Haraway expresses that *"none of 'us' has any longer the symbolic or material capability of dictating the shape of reality to any of 'them'"*. In a world where we are strongly in need of a political unity to *"confront*

effectively the dominations of" identification, *"the production of universal, totalizing theory is a major mistake that misses most of reality, probably always".* (Haraway, 2016)

What would be the value of my interpretation, if not suggest an applicable model for others? For Haraway, the significance of the politics of cyborg does not lie on the outcomes of it, but on this *subversive and constructive model of thinking* of the political model that one should embrace. Haraway does not dream of a story*, where *salvation* is achieved through the unification of women around *cyborgian identity*, but through a unity consisting of heterogeneity and coexistence of contradictory dominations:

> *"This is a dream not of a common language, but of a powerful infidel heteroglossia. It is an imagination of a feminist speaking in tongues to strike fear into the circuits of the supersavers of the new right. (...) It means both building and destroying machines, identities, categories, relationships, space stories. Though both are bound in the spiral dance, I would rather be a cyborg than a goddess".* (Haraway, 2016)

But how to construct a political image that does not based on the identification and dichotomies of *us* and *them*? How could one formulate a political model that does not end up asserting to be universal and end up being totalizing? For Haraway, the image of cyborg itself as the base of ontology is inherently capable of constituting the epistemology to frame politics. She expresses that *"with no available original dream of a common language or original symbiosis promising protection from hostile 'masculine' separation, but written into the play of a text that has no finally privileged reading or salvation history, to recognize 'oneself' as fully implicated in the world, frees us of the need to root politics in identification, vanguard parties, purity, and mothering."* (Haraway, 2016)

In this conjecture, my approach to how I interpret cyborg movement is very parallel to Haraway's imagination. My application of Haraway's model of *generating ambivalence* and *constructing through responsibility* is not a universal and totalizing model, but a single form that this model could take shape within the embodiment of inquiries on one's cyborgian body and movement.

Having clarified my stance towards my experience, there is a final point that I want to express before going into the politics of cyborg movement. I would like to present how Haraway's general methodology of *subversion through pleasure and experience* and *construction through responsibility* relates to the method of my thesis. I will mainly analyze how she utilized *language* as her method to tackle the aforementioned issues. Doing that, I intend to finally formalize my method of politics of cyborg movement.

Method of Cyborg Movement

Haraway's critique of Marxist and radical feminism as the taxonomies brought by these movements are highly correlated with the perception of women's experience. Haraway suggests that *"taxonomies of feminism produce epistemologies to police deviation from official women's experience."* In the center of these taxonomies, there lies the identification of women on various ontologies. While Marxist feminists specifically embraced labor as the ontological base to identify women and designate their experience, radical feminists have constructed their politics on an ontology of non-being: *"the self knowledge of a self-who-is-not"*. In both cases, *"category 'woman' and consciousness of the social lives of 'women'"* is *"simultaneously naturalized and denatured"* (Haraway, 2016)

For Haraway, the use of language a highly correlated to how we understand and embody this experience. She expresses that the imagery of body is highly fundamental in the evolution of our world-view and political language: *"Writing has been crucial to the Western myth of the distinction between oral and written cultures, primitive and civilized mentalities."* (Haraway, 2016)

Even though she expresses that the language is historically shaped by mentioned Western dichotomies, she also acknowledges that the relationship between culture and language could be bilateral. Having expressed the relation between the body and women's experience in the paragraph above, it is clear that language and experience are highly relevant phenomena in Haraway's political method. Arguing that *"releasing the power of writing is deadly serious," she* implies that language is a method in politics of cyborgs to reevaluate and twist the meaning of experience within the context of existing culture. (Haraway, 2016)

Haraway suggests that it is not the content of a story that subverts the meaning of it, but how it is told through alternative use of language. Even though *"we have all been colonized by those origin myths, with their longing for fulfill- ment in apocalypse",* she suggests that *"cyborg authors subvert the central myths of origin of Western culture"* by retelling the same stories through their language (Haraway, 2016)

How is this language used and how is it different from fundamentals of language as we know in the dominant culture? Haraway's language as a method advocates noise and pollution. It does not seek an organic union, and therefore heterogeneous in a way that *"all resistance to instrumental control disappears and all heterogeneity can be submitted to disassembly, reassembly, investment, and exchange."* It rejects the advocacy of *"perfectly true language"* and characterizes such language as a *"totalizing and imperialist one".* It does not seek for perfect communication, and therefore liberates one from the *"need to root politics in identification, vanguard parties, purity, and mothering."* Therefore, language in Haraway's politics is not a language as we understood, but a *"powerful infidel heteroglossia".* (Haraway, 2016)

What can one take from Haraway's use of language and apply its method to movement to contest the analogous dichotomies in Western dance? As Haraway suggests, postmodernist theories in the 20th century has been influential in the *erosion of the phallogocentrism of the West* that worships the *"the monotheistic, phallic, authoritative, and singular work, the unique and perfect name."* The equivalent of this erosion in dance is clarified above as its shift from a perfect and uniform tool of representation and expression to a method of experience to learn. In this context, how postmodern dancers embraced movement could significantly lead the construction of movement as the method of cyborg movement. At this point, embracing an imperfect and heterogeneous movement as an experience of learning is highly analogous to how Haraway sees language in her political method of cyborg image.

However, this is not an end. Haraway's image of cyborg is about *regeneration* than the *reproductive matrix.* She suggests that *"feminists (and others) need continuous cultural reinvention",* where she believes *"only a cyborg would have a chance"* (Haraway, 2016)

Therefore, using movement as a critical tool of learning experience requires a deeper understanding in the image of cyborg. She expresses that *"bodies are maps of power and identity"*, and *"cyborgs are no exception"* in this assertion. At the center of the inquiries of the politics of cyborg movement, understanding this image of cyborg is an essential for the regeneration of theories in *politics of movers*.

In the final chapter of my paper, I will briefly return to the reflection of my practise and present my process of using movement in the mentioned way to explore the emergence of this image in movement.

Image of Cyborg Movement in Metalheart Art Project

In the previous chapter, I have presented the analogy between the needs of an alternative epistemological ground caused by the ontological shift from *humans* to *cyborgs* both in Haraway's politics of cyberfeminism and the politics of movers that I have aimed to suggest in this paper. Furthermore, I have analyzed the applicability of language as Haraway's method on movement, through examining the contributions of postmodernist thinkers who have grounded language both as Haraway's method and movement as my method. As expressed above, the aim of the last section of the main section is to present an example of how one would apply the epistemology constructed in Haraway's *Cyborg Manifesto* in exploring cyborg movement. In other words, I aim *"to sketch a picture of possible unity"* as Haraway expressed.

First of all, I will briefly present the epistemology that Haraway has created on the ontology of cyborgs, and clarify two terms that she bases her political construction on: *organics of domination* and *information of organics*. Later on, I will briefly outline an analysis of the application of constructed epistemology on her politics. Finally, I will return to my practise and attempt to sketch the picture of that possible unity on Haraway's epistemological grounds.

While the necessity of an alternative epistemology construction is caused by the twisting ontology from humans to cyborgs, or as Haraway expressed by a *"movement from an*

organic, industrial society to a polymorphous, information system—from all work to all play, a deadly game" (Haraway, 2016), it is significant to further elaborate and understand this shift within the context that the new epistemology is built. Haraway constructs this epistemology around the evolving phenomena of the subjects of feminist studies. Similarly, I aim to construct this epistemology around the evolving phenomena of subjects and elements of dance. Therefore, I will first of all briefly unwrap her construction of the alternative epistemology, will later on help me to follow as a method.

Clarifying the aforementioned transition within social and somatic context, Haraway designate two significant checkpoints in time for her analysis. Her analysis of the transition of dichotomies are based on the comparison of the *"comfortable old hierarchical dominations "*, or *the organics of domination,* and the *"the scary new networks"* that she calls *informatics of domination.* Throughout this comparison, she depicts the definitional and contextual shift that specific phenomena undergo due to ontological collapse of *humans* in favor of *cyborgs.* (Haraway, 2016) In the table below, I have provided a number of these comparison between phenomena that Haraway addresses, which I believe will be relevant for our analysis too.

Organics of Domination	Informatics of Domination
representation	*simulation*
bourgeois novel / realism	*science fiction / postmodernism*
organism	*biotic component*
depth / integrity	*surface / boundary*
small group	*subsystem*
functional specialization	*modular construction*
public / private	*cyborg citizenship*
mind	*artificial intelligence*

Table 1 - Haraway's analysis of phenomena on the grounds of cyborg ontology

What is the significance of understanding this transition from the organic and hierarchical dichotomies into the new networks? Haraway asserts that the primary reason for the failiure

of Marxist and radical feminist analysis is the fact that they have built the feminist politics on a discourse as if *"the Aristotle still ruled"*. As *"dichotomies between mind and body, animal and human, organism and machine, (...) primitive and civilized are all in question ideologically"* (Haraway, 2016)*,* any political construction that is based on these dualities inherently lacks sufficient grounds. Similarly, any political construction on movement is likely to fail if it is based dichotomous legacy of Aristotle's approach on dance.

Haraway, expresses that the analysis of the *"impact of the social relations mediated and enforced by the new technologies"* is necessary in order to *" formulate needed analysis and practical work.* (Haraway, 2016) Similarly, understanding this transition from *organics of domination* into *informatics of domination* will not only help us to understand the twisting nature of relations between various elements and subjects in dance, but also provide the valid grounds for the possible practical work.

Haraway's analysis of tracking the place of *women* is grounded on *"a few idealized social locations seen primarily from the point of view of advanced capitalist societies"*. (Haraway, 2016) As movement phenomenon our subject of study, I will do my analysis touching not only locations, but also various elements that is asserted to be essential, or in Haraway's words, *idealized,* to value movement. The image of various elements of dance and dance's relation with other art fields in postmodern approach has been presented through the analysis of Cunningham's choreographies. What I aim to do in the final section of this paper is to reimagine, fictionalize and speculate an alternative image of dance in a hybrid environments which derives of Haraway's imagination of cyborgs. If in the cultural reinvention *"only a cyborg would have a chance"* (Haraway, 2016, pg. 69) as Haraway argues, I believe my imagination of cyborg dancer should constitute at least a significant attempt in this reinvention.

In this final section of the paper, I will first briefly summarize the image of each phenomena retrospectively: from classical times to post modern times. Later on synthesizing them with Haraway's image of cyborgs and reflection of my practise, I will speculate an image of cyborg dancing that could be relevant for *reinvented culture*:

1.1 - Performer & Body

A commodified subject of representation of the *ideal, majestic and flawless* in classical dance. A *captivating* expressor of the universal feelings in romantic dance. In any case an *organic* and an *idealized* figure that is utterly integrated to its surrounding, music and the audience.

A *decomposed* entity of autonomized body pieces that is completely abstracted from the dominance of the *ideas, emotions, music and the surrounding,* whose physical existence is distressed in postmodern dance.

1.2 - Cyborgian Image of Performer and Body

A dynamic cybernetic entity composed of a complex network of living and lon-living modules, and their physical extensions and virtual simulations. Significance of the physical presence is diminished as a cyborg performer may dynamically appear and disappear in various physical and virtual forms and simulations. Not only the machine parts, but also the human parts in the cybernetic system is completely interchangeable. A human as a *module* may leave the system, and could be replaced by another human to complete the cyborg.

Interconnected modules of machine that communicates through continuous encoding and decoding processes that occurs in the interfaces of *human senses* and *machine sensors*. In terms of boundaries, the functional and compositional scopes of modules in *cyborg performers* are analogous to skin in *human performers*. Body is dynamic, may be assembled and disassembled, activated and deactivated, and engineered.

2.1 - Action

Streams that are originated from the physical body of the performer as *motions*, *gestures*, *mimics*. The flow of action from performers to audience is one way, and the focus of audience is aimed to be concentrated around a number of highlighted actions *representing an idea* in Classical dance, or *expressing an emotion* in Romantic dance. For both Classical and Romantic dances, the action is framed by a coherent theme, and *consumed* by the audience.

An autonomous phenomenon that is not framed around *universal ideas and themes*, but instead focused on *particularity of an individual experience* in postmodern dance. Stream of actions exists in raw form to be *networked* by the audience.

2.2 - Cyborgian Image of Action

Action: As opposed to one-way transmission of *representation* or *expression* of ideas and emotions from *performer to audience* or *performer to performer*, action in cyborg movement is the subject of communication and simulation, or *data*, that control various modules in the system and triggers feedback in the cybernetic network. The form of action is dynamically encoded and decoded between *conceptual* as emotion, expression and experience, *analog* as light, sound and vibration and *digital* as binary representation. The source of action might be the human or machine component of the cybernetic system.

3.1 - Technique

Set of rules that are developed around specific *styles* or *art movements* in dance, concerning the use of body through *" through an abstract, codified, impersonal vocabulary"* (Banes, 1980, pg. 5) As mentioned above, *erect posture, head that is set squarely on the shoulders, approximately equidistant arms and legs, avoiding all extremes, slightly outward hips* are used to achieve the *nobility of spirit* in classical dance. On the other hand, *lightness, rounded movements and excessive use fully extended feet* are used to embody the *ethereal, supernatural, or otherworldly* and *poetic* themes in Romantic dance. Technique in Classical and Romantic dance *"alters gradually during the complex historical process of transmission, in minor ways: refinements, development of strength and skill, shifts of style occur"* (Banes, 1980, pg. 5)

As postmodern dance has mainly focused on *experiencing* and *exploring the particular* and diffused into the public sphere, the classical and romantic techniques have been significantly eroded in favor of everyday use of the human body. Inexperienced and untrained performers have taken part in dances.

3.2 Movement Protocols:

A network of rules and conventions which designate protocols for the proper execution of movement within various combinations of technologies. As opposed to a single accepted or conventionalized *techniques* of movement execution that regards only *the human body*, each cybernetic network of performer requires a combination of relevant interconnected rules, *protocols,* which mainly regards the communication between *the human body* and *the machine*. Instead of *gradually altering and developing technique,* cyborg movement protocols may *go obsolete* as cyborgs are inherently subject to a continuous transformation.

4.1 - Dance Education:

Dance education in Classical and Romantic ballet is *a conservative academic tradition* which has *"evolved over the past four hundred years (...) and resilient enough to absorb innovation"*. The tradition is maintained by *direct transmission of information from teacher to pupil.* (Banes, 1980, pg. 5)

Due to the prominent perspective of *personal* in modern dance, and *experience, particularity* and *daily* in post-modern dance, dance education has gone through significant innovations, revolution and constructions in modern and postmodern dance. As Banes suggests, *"the history of modern dance is rapidly cyclical: revolution and institution; revolution and institution"* (Banes, 1980, pg. 5)

4.2 - Cyborg Dance Education:

In academic level, organized as interdisciplinary curricula by departments dance, information technologies, cybernetics and media arts. In practical level, dispersed into online open source communities, hacker & mover spaces. As a result of postmodern motivations, *regeneration of particular inquiries* are valued more than the *transmission of knowledge.*

5.1 - Stage and Space:

Dance in Classical, Romantic and Modern period has been limited to mainstream physical theatre houses which has been built and decorated around the themes that dances represent.

Postmodern dancers, on the other hand, have *"found themselves on the same side of a new divide between 'uptown' and 'downtown', between the mainstream theatres and the fringe venues of the underground"* (Burt, 1980, pg. 189) by the 1960s in New York. Furthermore a number pioneers have used media technologies for the display of the dance performance, which has significantly blurred the line between physical and virtual performance places.

5.2 - Hybrid Movement Places:

Expansion of the stage from traditional theatre houses and churches into public places in postmodern movement is taken a step further to virtual and hybrid environments. As day to day life is highly propagated by the interconnected networks by internet, cloud technologies and blockchain, the consolidation of long distance physical places through non-spatial virtual place grows further inquiries on telepresent theatre places. As the distinction between public and private is highly permeable due to interconnected networks and mobile technologies, the static location of the performers and audiences is dispersed into dynamic and hybrid places. Anyone could be a performer / audience in any location.

Three dimensional and static presumption of the space, *as an element of dance,* is highly questionable in favor of dynamic and interactive hybrid spaces. Dancer's use of performance space is not evaluated around their physical presence in precise locations, but how this hybrid spaces are evolved and twisted around the action of the cyborg performer.

6.1 - Audience:

The audience in Classical and Romantic and Modern dance *gapes*, while the audience in Postmodern dance *looks*.

6.2 - Liquid Performer:

As the term *audience* has transformed into the *participant* as art has moved out from theatre spaces into public spaces in postmodern art movement, this transformation further evolves into a fluid situation of role changes. When the accurate *protocols* are followed, the distinction in between the *performer* and the *spectator* completely blurs out. As anyone can be, *or more accurately,* is a cyborg, the communication in between the *performer* and the *spectator* might instantly turn into a collaboration of multiple performers when any *spectator* interconnects into, or any *performer* disconnects from the cybernetic performance system. A liquid performer has the complete freedom to leave, and the spectator has the complete freedom to take part as a performer in the artwork.

6 - Conclusion

In this thesis, I have aimed to explore the alternative dance and movement epistemologies that are likely to be built due to the significant ontological change from humans to cyborgs. Pursuing a practise based research method and autoethnography, I have pursued a number of technology sketches in an interdisciplinary approach, and I have performed using the prototypes build in order to generate relevant data for developing an academic inquiry.

Reflecting on the experience of dancing for the first time in a technology setup, I have been able to traverse between two ontologies, *human* and *cyborg,* and spot out the possibilities of developing an alternative dance epistemology reflecting on my transition, and struggles in the border of them. Later on, I have tracked the history of Western dance and pursued a parallel analysis of the value of body in Western culture in order to capture a broad image of dancing on *human* ontology.

Centering the postmodern movement *as the dominant culture*, I have aimed to illuminate an alternative dance epistemology applying Donna Haraway's image of cyborgs. Finally, I have depicted a picture concerning a few essential elements of dance, or idealized *subjects / places* of dance that is likely to happen through cyborgization. In this depiction, I have speculated*,* or even fictionalized, *as it is a powerful political tool in Haraway's method,* the transitions that these idealized subjects and elements of dance are likely to undergo.

Bibliography

Aristotle, ., Jowett, B., & Davis, H. W. C. (1920). *Aristotle's Politics.* Oxford: At the Clarendon Press.

Austin, J. L. (1950). *Truth*. In Philosophical papers (1961)*, 126 y ss. Oxford: Oxford University Press.

Banes, S. (1980). *Terpsichore in sneakers: Post-modern Dance.* Boston: Houghton Mifflin

Banes S. & Carroll N. (2006). *Cunningham, Balanchine, and Postmodern Dance*. Dance Chronicle, 29:1, 49-68, DOI: 10.1080/01472520500538057

Burt, R. (2006). *Judson Dance Theater: Performative Traces*. London: Routledge.

Cancienne, M. B., & Snowber, C. N. (2003). *Writing Rhythm: Movement as Method.* Qualitative Inquiry, 9(2), 237–253. https://doi.org/10.1177/1077800402250956

Craine, D., & Mackrell, J. (2010). *Royal Danish Ballet*. In The Oxford Dictionary of Dance. : Oxford University Press.

Copeland R. (2004) *Merce Cunningham: the Modernizing of Modern Dance.* New York and London: Routledge

Dahlstedt, Palle. (2012). *Between Material and Ideas: A Process-Based Spatial Model of Artistic Creativity.* 10.1007/978-3-642-31727-9_8.

Dixon, S. (2007). *Digital Performance: A History of New Media in Theater, Dance, Performance Art, and Installation*. Cambridge, Massachusetts: MIT Press.

Guerreiro T. (2016, June 17th) *Bournonville: The Danish Way of Dancing* [Blog post]
Retrieved from:
https://web.archive.org/web/20170409122211/http://www.balletposition.com/blog/the-danish
-way-of-dancing-it-all-started-with-bournonville

Haraway, D. J. (2016), *A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century.* University of Minnesota Press,
warwick.ac.uk/fac/arts/english/currentstudents/undergraduate/modules/fictionnownarrativem
ediaandtheoryinthe21stcentury/manifestly_haraway_----_a_cyborg_manifesto_science_techn
ology_and_socialist-feminism_in_the_....pdf

Horst, L. (2004). *Pre-Classic Dance Forms: The Pavan, Minuet, Galliard, Allemand and 10 Other Early Dance Forms*. Chicago: Princeton Book Co.

Jameson, F. (1984). *Postmodernism or the Cultural Logic of Late Capitalism*. New Left Review, 146, 53-92.

Kaya U. (2019, Feb 9). *Metalheart - Space, Movement and Tech Sketches*. [Blog post]
https://web.archive.org/web/20190226135320/https://uggi-the-maker.blogspot.com/2019/02/i
-am-dancer-and-technology-enthusiast.html

Kaya U., Imani A., Hamdy M. (2018) *When Worlds Collide - Machine Dialects*, Retrieved from:
http://web.archive.org/web/20190606111202/http://machine-dialects.possiblefuturelab.dk/20
18/05/05/when-worlds-collide/

Lee A. (2016) *The Romantic Ballet and the Nineteenth-Century Poetic Imagination.* Dance Chronicle, 39:1, 32-55, DOI: 10.1080/01472526.2016.1134980

Little, M. (1975). *Dance under Louis XIV and XV: Some Implications for the Musician.* Early Music, 3(4), 331-340. Retrieved from http://www.jstor.org.zorac.aub.aau.dk/stable/3125400

Méndez, M. (2013). *Autoethnography as a research method: Advantages, limitations and criticisms.* Colombian Applied Linguistics Journal, 15(2), 279-287. Retrieved July 24, 2019, from
http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0123-46412013000200010&lng=en&tlng=en.

Mullis, E. (2013). *Dance, Interactive Technology, and the Device Paradigm.* Dance Research Journal, 45(3), 111-123. doi:10.1017/S0149767712000290

Needham, M. (1997). *Louis XIV and the Académie Royale de Danse, 1661: A Commentary and Translation*. Dance Chronicle, 20(2), 173-190. Retrieved from
http://www.jstor.org/stable/1568065

Pask, G. (1961). *An Approach to Cybernetics*, London, Hutchinson

Schiphorst, T. (2019). *A case study of Merce Cunningham's use of the lifeforms computer choreographic system in the making of Trackers* (Master's dissertation). Retrieved from:
https://www.sfu.ca/~tschipho/publications/Schiphorst_M.A.Thesis.pdf

Sheets-Johnstone, M. (2004). *The Primacy of Movement*. Springer.

Snowber, C. (2012). *Dance As a Way of Knowing. New Directions for Adult and Continuing Education*. 2012. 10.1002/ace.20017.

Tobias T. (1997): *'I Dream A World: The Ballets of August Bournonville'*. Meddelelser fra Thorvaldsens Museum', p. 143-153.

Jackson, R. L. & Hogg, M. A. (2010). *Renaissance Art*. In Encyclopedia of identity (pp. 637-641). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781412979306.n203

Schon, D. (1983). *The Reflective Practitioner How Professionals Think in Action*. Aldershot: Ashgate Publishing.

Turner, B. S. (2008). *The Body & Society: Explorations in Social Theory.* London: SAGE Publications Ltd doi: 10.4135/9781446214329

Wagley C. (2018, 19 September) *How MoMA Rewrote the Rules to Collect Choreographer Simone Forti's Convention-Defying 'Dance Constructions'* [Review of the artwork The Huddle by Simone Forti] Retrieved From: http://web.archive.org/web/20190602191911/https://news.artnet.com/exhibitions/moma-rewrote-rules-collect-choreographer-simone-fortis-convention-defying-dance-constructions-1350626