Soft telepresence as an incarnation of pain.

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07/2018

Abstract

This is the abstract of the thesis.

Contents

Inroduction

The following introduction recounts the constitutive turn of events that led to the formation of this Master's Thesis. The underlying principle is, and has been for me ever since I was discharged from my military duty, the use of cutting edge technology for social well-being. Throughout my evolution as a developer, I slowly drifted away from paths of algorithmic rationality and abstract, alienated coding and into questions of meaning and existence. Following my Bachelor's degree in Philosophy of mind and Neurobiology, I have sought ways to transcend my institutionalized role of a programmer and use the knowledge I have gained to challenge pressing issues of our society, and in particular, my own society in Israel.

The final phase transition occurred in the summer of 2012, when I landed on an opportunity to join a two-week conflict resolution workshop in Germany. The initiative, as started by an Israeli and a Palestinian who formed a relationship through mutual work, grouped young adults from both sides, carrying their hopes and doubts, to sit and talk together in one shared space. The participants in fact lived no more than a hundred kilometers away from each other; and yet they were so infinitely apart in practical terms that the most reasonable place for them to meet was in a different continent, 4000 kilometers away. Ever since its formation, Israel has been divided between two nations, Jews and Palestinians. Due to the events of the 1967 "six day war", and until this very day, most of the Palestinians reside under Israeli military occupation. Access restrictions enforced by the Israeli government prohibit the crossing of populations between the nations and inhibit the Palestinians' mobility. A 700-kilometer-long concrete barrier surrounds the "Green line" that separates Israel from the West Bank – the area with the largest concentration of Palestinian population. While the crossing of Israelis to the other side is, at best, frowned upon, and at worst institutionalized and encouraged in the case of settlements; the Palestinians endure stricter restrictions, not only across the West Bank, but also within it. Multiple checkpoints divide different areas of the land and force the Palestinians to face military control on a daily basis. These restrictions compelled the Palestinians in our group to take a detour through Jordan in order to get to Germany, rather than taking the shortest path through Israel's airport.

Since the conflict between the nations is very much situated in the land of Israel/Palestine, meeting at a relatively neutral and distant location was also constructive. As noted by Nietzsche (2001, p. 134) : "Egoism is the perspectival law of feeling according to which what is closest appears large and heavy, while in the distance everything decreases in size and weight" . Albeit Germany plays a significant role in the conflict with its great effect on the historical processes that lead to the formation of Israel as the home of the Jewish people, it was, nevertheless, easier for the parties to bridge the gaps without the unnerving presence of soldiers and the affect of this blood-soaked land. Up until then, the closest encounter I had had with a Palestinian was an occasional crossing of a nearby "Israeli-Arab". This controversial term is possibly used to sequester na-

tional aspirations for Palestinians that ended up under Israeli jurisdiction during the 1948 war for its independence (Peleg and Waxman, 2011, p. 26) . To this day, the 1948 war marks both a national holiday for Israelis and a monumental catastrophe, or "al-Nakbah", for Palestinians, due to hundreds of thousands of them being driven out from their homes and becoming refugees in the neighboring countries. As for 1967 Palestinians that found themselves out of Israel's borders after its formation – they are currently living under siege in Gaza or under military occupation in the West Bank. Naturally, my encounter with them has been strictly imaginative or virtual – this was about to be my first real encounter with The Other. Growing up as part of a middle-class Israeli family, in Tel-Aviv of the 90s, I was raised upon liberal and humanistic values, all while living in the occasional war zone of missiles and suicide bombings. I was constantly immersed in media spectacles, interchanging from the hopeful discourse of peace, to the despondence and carnage of war. As a result, I developed a self-contradictory and somewhat post traumatic view of the Palestinians: They represented, on one hand, a source of danger, and on the other, a marginalized and abused population. Their behavior was both condemned and justified, they were both terrorists and freedom fighters; they were to be reconciled with, but could not be fully trusted.

I remember the anticipation as we arrived in the pouring rain to our host institution Jugendakademie Walberberg, a youth center and hostel in a remote village close to Cologne. The Palestinians were already waiting for us at the rendezvous point, waving flags and demonstrating unity. Upon meeting the embodied strangers face to face, I experienced what could be described as an emotional turmoil, but to some extent a spiritual event - it was a moment of transcendence. A vertical motion in which infinite and chaotic forces sedimented within a body, only so that they can once more transcend through their historical contingency and emerge a true found logos – the actual voice and thought of the corporeal subject. The Other was no longer a fetishized stranger, but a verified existence. Simone Weil enunciates in her collection of aphorisms - Gravity and Grace: "Man has to perform an act of incarnation, for he is dis-embodied (désincarné) by his imagination. What comes to us from Satan is our imagination" (2002, p. 54). I can reify Weil's intuition: After this act of incarnation, I felt more capable of practicing conflict resolution. I felt grounded, open to difficult discussions and was able to obtain a sense of release from the pain that I was enduring. It is as if the corporeal presence of the Palestinian in front of me had untangled and mended short-circuits that existed in my mind, and from then on, everything felt more natural. At the end of the workshop in Germany, we were asked to think on how we can utilize what we had gained toward the upcoming future. At that moment, I felt a great sense of duty – I was to use my software engineering skills to bring about this event that I experienced to a massive scale, to enable conflict resolution for the masses until a critical point of the nonlinear system that is society is reached, and the democratic process is shifted toward peace-making. I did not consider at first that corporeality as such, is a crucial ingredient for this process. I simply aimed toward a free and expressive virtual encounter between conflicted strangers; whether through games,

music, chatting or other forms of online communication. Now, however, I would like to contend that the virtual reality is insufficient for a true determination of history. Through the writings of phenomenologists such as Merleau-Ponty and post-colonial and gender theorists such as Sarah Ahmed, I would argue that an embodiment is necessary for inter-subjective dialectics of the deepest notions – the conditions of our existence. It servers not only as the flesh of our subjectivity, but also as the contour of pain and pleasure – bodily sensations allow us to not only demarcate our being from that of the other and to form an identity, but also to formulate our social relations. This realization led me to pursue the technological solution for an efficient, mobile and expressive embodiment that I will outline in this thesis; one that can cross borders, separation barriers and facilitate such events of incarnation when a physical encounter is not possible. I found the answer in the form of Soft Robotic Telepresence, a modern-day incarnation, an Avatar for pain relief. I began my journey for constructing a telepresence robot that can serve as a mediator between subjects in conflict, knowing that I will first and foremost test it in the land of Israel and Palestine; but hoping that it can be applicable to any situation of conflict. Half-way through the journey, I have come to realize that when considering the design of a so called incarnate robot, both materiality and form play a decisive role. The field of robotics has moved far beyond the realm of metals gears, clamping arms, roombas and staggering humanoids. We are frequently seeing new materials for robots: from origami folded polyester sheets (Li, Vogt, Rus, & Wood, 2017) to edible gelatin (Shintake, Sonar, Piskarev, Paik, & Floreano, 2017), and also new forms such as abstractly shaped personal robots (MJI, 2015). In this thesis work, I will outline the theoretical and conceptual framework, as well as the technological design and implementation of a Soft Robotic Telepresence – that is, a pneumatically actuated, silicone based soft robot, whose form is inspired by both cultural tropes and natural elements and whose aim is to facilitate the incarnation of pain. The implementation is put to action in the field and the results are collected and analyzed. I invite the reader to join me on this journey of transcendent hope and corporeal suffering.

Unsorted

References

Nietzsche, F. W., Williams, B. A. O., Nauckhoff, J., & Del Caro, A. (2001). *The gay science : With a prelude in German rhymes and an appendix of songs.* New York: Vintage.