

## **Abstract:**

Modern prosthetic legs are reaching a new stage, where their capabilities seem to be approaching their goal of replacing the functions of a lost limb. The term “bionics” is often used to describe the interplay between engineering, biology, and design, while also being progressively associated as a label towards the emerging technology of prosthetic legs. These bionic legs have made a significant jump in their development in recent decades, where prior to this stage, the prosthetic leg has not undergone significant changes since its early stages. With greater capabilities to restore functions of a lost leg, as well as attempts such as to give its users a sense of feeling back through their artificial limbs, bionics are having a considerable impact on the lives of many people. This emerging technology is also gaining an influence on how prosthetics, its users, the human body and disabilities are being perceived in society through its representations. The aim of this study is to analyze how bionic legs are being presented and which expectations could emerge from futuristic visions.

For the largest part of the prosthetic history, prosthetics were mostly attempted to be hidden from the public eye and were regarded rather negatively. This perception was in part due to prosthetics being a reminder of war times, the labels which often came along with having an amputation, as well as the struggles to engage in a society which was not arranged for people without limbs. This perception prevailed for a long period, despite attempts to reform its public image. However, with the rise of futuristic science fiction, new technological developments, as well as the internet, the perception of prosthetics is undergoing a dramatic change. The necessity for prosthetics has not changed, yet with increasingly sophisticated capabilities, the bionics are being portrayed as part of a better future. New ideas are emerging through e.g. videos and movies. Where prosthetic users used to be portrayed in a negative way, they are now starting to become heroes of stories. Protagonists who through cybernetic enhancement gain more sophisticated abilities than they possessed prior to their amputation. This is a noticeable shift in the societal perception of this technology. Bionics have ceased to be mere peg legs and are not seen as are simple health or aiding tools anymore. Today, bionic prosthetics are devices said to become part of their user’s body. With newly developed operations and technological advancements people “are getting their legs back.” This is an ideology which needs to be treated carefully and critically. The future of this technology is still not clear, but it is making major developments in the medical as well as in the technological field which need to be considered. Additionally, prosthetics have entered multiple fields in our society. From fictional movies to literature, to video games, to news coverages, even to sports and fashion. The societal interest in the bionic technology is an important factor to be aware of. As the societal interest heavily influences science as well as related investments, it is important to observe, how such technologies which entail a “promising future” are being portrayed.

Will the presented future visions of the bionic legs invoke a “hype” and advance their development, or will they retrogress their expansion? In order to attain the aim of this study, videos about bionic legs from the media platform TED were selected as research materials to conduct a qualitative video analysis. TED was selected due to its established popularity and its wide range influence towards the general public. Additionally, the topic of disabilities cannot be separated from this study. It is a very sensitive and complicated issue in our society and with the presentation of the bionic legs, a subject that is unavoidable to be discussed. Some groups embrace technologies such as the bionics to “regain” a normal life, while others feel that their cultural identity should be respected. The definitions of the human body, identity, and disability are opened up for discussions which confirm that these social definitions are not so self-evident as they might seem. Ergo, the influence of such presentations could have a significant influence on future scientific investment, as well as on the potential to bring forth perceptual changes in society.

To narrow down the available materials, a person of interest was chosen, who, in this study, is regarded as a socio-technical vanguard. Namely Hugh Herr, who embodies an unconventional narrator of the bionic technology. Due to his background, Herr, a developer, user, and icon figure in this field, represents a unique personality for spreading futuristic ideas of the bionic technology. Herr’s narratives are linked to his visions of a bionic age, where he presents a desirable future by using old wishes and emotions to gain support and credibility. This research investigates three TED videos where Herr is the sole presenter and where he is framing, as well as interacting with the bionic technology in online videos. With the sensitizing concepts of socio-technical vanguards, socio-technical imaginaries as well as the sociology of expectations, Herr’s presentations and his interaction with the bionic technology will be analyzed. The selected materials of Herr presenting the bionics will be approached with a multimodal discourse analysis, to analyze Herr’s dialogue as well as the used modalities. Through the qualitative video analysis with the selected method, this study attempts to answer the main research question: “How does Hugh Herr embody a vanguard vision of bionic legs in online TED videos of himself from 2010 to 2018?” By answering this research question, the emergence and influence of futuristic visions, as well as imaginaries of a technology, that have the potential to significantly influence the societal perception will become clearer.