

Fashion Design for Health: a multidisciplinary approach

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Abstract. The aim of this research is presenting intersections points concerned with health, fashion and design with the propose of allowing multidisciplinary studies to enter into a dialogue by employing the same language. Qualitative methodology was applied on the bias of epistemological Constructivism. It was analysed and compared secondary sources through a biographic review. It was concluded that the examples of *The Alternative Limb Project*, a hybrid project, are intended to embody fashion as a socio-cultural phenomenon can foster social-cultural inclusion for people with disability. It is possible to discern a feasible approximation of the outlook of the designer in the area of health with the outlook of the designer in the area of fashion, so that, in partnership, they can foster effective socio-cultural inclusion and improve physical health in a way that culminates in a better quality of life and state of well-being.

Keywords: fashion design, health, people with disability

1 Introduction: Society and disabilities - new conceptual paradigms for health in the 21st Century

According to Üstün *et al.* (2001), *disability* is a widely used and ambiguous term. In classifying health categories, these authors set out by adopting another term, *disablement*, which encompasses three different notions in the medical area: *impairment*, *disability* and *handicap*. However, it has been found difficult to translate the word *disablement* into other languages and so they have resorted again to the term *disability*. According to the authors, disabilities are found in the relationships between three notions of physical functionality or usefulness and include three contextual factors.

At the beginning of the 19th Century, with the advent of pathology in medicine and the social sciences, disabilities became an area that could now be studied. The word *pathology* can be understood as an area where any anatomical or physiological variance can be studied that constitutes or characterizes a particular disease. In light of this, disabilities were initially classified by their pathological features and divided into the following categories: mental, physical and sensory perceptual (auditory and visual), all of which allowed medical diagnosis and treatment. As a result, the disabled were seen as people who had some incapacity or handicap that stemmed from their physical condition.

As well as suffering on account of the functional and structural nature of their bodies, disabled people have experienced social alienation, according to Rocha (2006). Vash (1988: 22) draws attention to three tendencies that perhaps explain why a disabled person is socially disparaged: a) human beings instinctively reject any

organisms that have been damaged; b) evident physical differences are treated with less tolerance in the psycho-social domain; c) the victim is viewed as being unproductive from an economic standpoint and harms the dynamics of the normal operations of families, the community or society. At a psycho-social level, the authors, Correr (2003) and Rocha (2006), agree that this stigma is still deeply rooted in Brazilian society. The UN *Convention on the Rights of Persons with Disabilities* (CRPD), a global arena of which Brazil forms a part, seeks to “*encourage, protect and ensure the full and equal enjoyment of all human rights and fundamental freedom of people with disabilities*” (CRPD, 2006). However, its application depends on political and economic spheres (among other factors).

In 1980, the first *International Classification of Functioning and Disability* (ICIDH), was held by the *World Health Organization* (WHO). This was an attempt to standardize a single language about disabilities, incapacities and handicaps. According to Üstün *et al.* (2001), this classification, which is only based on diseases and their sequel, has been criticized on the grounds that it was only designed to give medical guidance. Its model traces a linear sequence:

Health -> disability -> incapacity -> handicap.

In 2001, the ICIDH-2 was published; according to the WHO search portal, it is more commonly known as the *International Classification of Functioning, Disability and Health* (ICF). It should be underlined that the ICF was set up for *everybody* and not just for people with disabilities.

It can be seen that the concept of health is implicit in both the title and definition of this new classification - “*Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*” which was provided by WHO (1946: 01). A healthy human being is someone who feels well physically, mentally and socially. The concept was broadened in the definitions of health given by Stedman (2003: 569):

“Health; the state of the organism when it functions optimally without evidence of disease or abnormality.

Mental health – emotional, behavioral and social maturity or normality; the absence of a mental or behavioral disorder; a state of psychological well-being in which one has achieved a satisfactory integration of one’s instinctual drives, acceptable to both oneself and one’s social milieu.

Public health: the art and science of community health concerned with statistics, epidemiology, hygiene and the prevention and eradication of epidemic diseases”. [1]

After 2001, socio-cultural issues in the health area became involved in the classification of every individual. This transition can be seen as a change from a medical model to a social model, *in which* the *World Report on Disability* (2011), adds “*people are seen to be disabled by society and not by their bodies*”. According to Rocha (2006), the main purpose of this new classification was to reduce the stigma of stereotypes and prejudices that can be found in the history of the concept of disability. The ICF recognizes the importance of personal factors such as motivation and self-esteem in the awareness of people with disabilities, although these factors have not been classified or conceptualized by the ICF itself.

Moreover, the proposed axis in the conceptual health model in fig. 1, shows that the state of health can be understood both as an interaction between the functions and structures of the body (diagnosis) and as an activity that allows a kind of participation

that is contextualized by environmental and personal factors. In this way, disability refers to the difficulties experienced in the physical structures and functions and in the constraints that limit the way some activities are carried out or on restrictions that prevent participation, as for example by discrimination. These are the difficulties experienced in some or all of the three areas of operation. Thus it can be observed that society, or the milieu, can also be disabled and not just the individual.

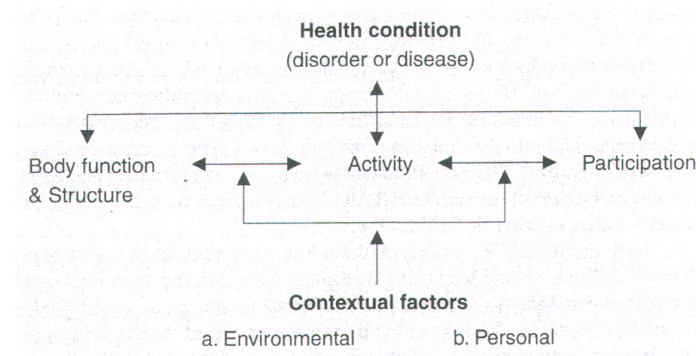


Fig. 1: Conceptual model of WHO – ICF, 2001. Source: Üstün *et al.* (2001).

This recent more complex research allows biological, psychological, social and environmental factors to be interwoven, since they all have an effect on each other, which means that the environment or other factors can lead to either a better or worse state of health. The concepts introduce a new paradigm that can be used when thinking about or working on disability and incapacity, which allows multidisciplinary studies to enter into a dialogue by employing the same language, as is pointed out by Farias and Buchalla (2005).

With regard to the quality of life in a psychological and socio-cultural context, the ICF related it to well-being, which was used as a construct for the quality of life. Seidl and Zannon (2004) make clear that the psychological dimension is the perception the individual has of his affective and cognitive condition. In other words, it is mental health – when someone has attained a state of psychological well-being and satisfactory integration both with himself and his socio-cultural milieu. For this reason, it is essential to map out his mode of being and psychological quality of life, so that the relations between self-esteem and stigma (positive and negative feelings) can be observed, together with the question of the physical image and appearance of people with disabilities.

2. Method and Methodology

Flick (2009), Richardson (2010) and Gray (2012) adopt an epistemological stance for research and the researcher that provides a philosophical background to the study. This means that when reflecting about the relations among fashion, design and health,

it must be made clear that this research is embedded in an epistemological Constructivism where “*truth and meaning are created through the interactions of people with the world*” (Gray, 2012: 21). Schwandt in Denzin and Lincoln (2000: 197) point out that epistemologies are debated by researchers in various areas and adds “*we do not construct our interpretations in isolation but against a background of shared understandings, practices, languages, and so forth.*” These authors clearly adopt a philosophic approach, as does Schwandt (2000) who distinguishes between Interpretivism and Constructivism. In this research, an epistemological stance of Constructivism is adopted to understand how three areas mention above can be important to a multidisciplinary research.

The choice of a theoretical perspective is also recommended by Denzin and Lincoln (2013) with propose of clarifying the research position as well as its methodological coherence. It should be noted that the study was undertaken from the perspective of an Interpretivist Theory.

According to Crotty (1998), Interpretivism seeks interpretations that are culturally derived and traditionally based in the world of social living. Schwandt in Denzin and Lincoln (2000) state that, from this standpoint, individual constructions of the social world are personal and can be legitimized and shared as a result of an interaction between the researcher and the field researched. For this reason, it is agreed that the *reflectiveness* that can be found in this research when viewed as a relationship, is not neutral and occurs between the researcher and the object of the research. (Gibbs, 2009).

Marconi and Lakatos (2010) draw a distinction between method and methods. The former is viewed as a broad approach at a level of heightened abstraction which discriminates between inductive, deductive, hypothetical-deductive and dialectical methods. The latter involve procedural methods: “*more concrete stages of investigation*” adds Marconi and Lakatos (2010: 88), which can be understood as being analytical techniques and procedures. As a result, this research employs the inductive method and a qualitative methodology.

With regard to the rigor of the methodology of data collection and analysis, this can be attributed both to the internal validity of the comparative technique itself and the reliability that results from employing specialist publications in different periods; however, it should be underlined that there are divergences of opinion.

3. Discussion: Intersections among fashion, design and health

There is no consensus among the authors about definitions of design (Cardoso, 2004 and 2012; Bürdek, 2006; Schneider, 2010; among others). The review of the bibliography, in this research, is something that makes the designer shoulder a range of social and cultural responsibilities which might have a direct bearing on the health and quality of life of the people involved.

The *International Council of Societies of Industrial Design* (ICSID) recommends that its design activities should take account of its production system and life-cycle, as well as the interaction between cultural, social and economic factors. Krippendorff (1969) adds that “*design is making sense of things*”, “a conveniently ambiguous phrase”, the author comments, and he then goes on to broaden his own interpretation

by stating that “*the products of design are to be understandable to their users*” (Krippendorff, 2006). In other words, the design products must include meaningful semantics that can be understood by the users. For example, the old-fashioned children’s orthopedic boots, that depend on pathology, are replaced by gym shoes (sneakers), which through the design of this product convey the idea of ordinary sneakers for ordinary children and do not impose any restrictions. According to Roncoletta and Preciosa (2009), orthopedic problems are camouflaged by the communicative aspects of ordinary sneakers for children.

Thus it can be argued that artifacts convey concepts by means of aesthetic and symbolic features, and these are often preplanned by the designers. Krippendorff (2006) argues that design products should be understandable for the users, not only in terms of aesthetic quality but also cultural quality. The author provides evidence that communication is a quality that is understandable for users and has close ties with emotions and culture.

Flüsser (2007) states that culture can be regarded as embracing the entire range of objects in use, or to put it in another way, the artifacts that surround us serve as materials for a diagnosis that can lead to an understanding of the world. Since designers are responsible for a wide range of products that are used in different areas (cars, domestic appliances, computers, clothing and so on), it must be admitted that everyday objects are, at least in part, responsible for the cultural composition of the world.

Fashion is a social-cultural phenomenon that allows understanding society. Etymologically, the Portuguese word for fashion “*moda*” derives from the Latin *modus*, which has several meanings including measurement, rhythm and also manner or knack. It can be understood as having a broad range of meanings which cover periodical changes in several social sectors, to such an extent that it is possible to speak about political, religious, scientific and aesthetic fashions and so on. It is as a result of this broad meaning that fashion is an intrinsic part of non-traditional societies and viewed as being a social phenomenon. (Souza, 1987; Laver, 1989; Lipovetsky, 1989; Baldini, 2005; Seeling, 2000 and 2011; Baudot, 2000; Crane, 2006, Boucher, 2010; among others).

The second meaning, according to Souza (1987), which is more restricted and widely known, describes fashion in terms of its periodical changes in styles of clothing and in other aspects of personal adornment. The author refers to the creation and production of goods. Castilho and Martins (2005) pursue this idea further by stating that fashion is a system of language, a kind of discourse where ideas are turned into products and that these, in turn, reflect the values and socio-cultural concerns that are involved in the subjective interpretation of their creator - the designer. This concept is underlined by Preciosa (2004: 30), who states that:

“[fashion] as a unique blend of ideas and sensations, and is modeling the contemporary world by embodying them. In this sense, it can, to a certain extent, carry out a diagnosis of the world in which we live. In its various manifestations, it provides us with subjective modes that will be worn by us.”[2]

Both in a broad and in a more restricted sense, it can be noted that fashion is not an isolated phenomenon in the world but forms a part of it and brings together the most wide-ranging and varied subjects that can be appropriated by material culture. Fashion can thus be viewed as a domain of dreams and fantasies which is playful,

paradoxical, ephemeral, individualized and widely diversified. It is a socio-cultural phenomenon that is a mirror-image of society.

Fashion system has its origins in Western Europe in the 14th Century where it began to follow prescribed social rules concerning manners, which were characterized by their brief duration and entailed periodic changes of habits and styles, initially among the Western aristocracy. Researcher bellows attribute this rise to complex causes of which the following can be highlighted:

a) The movement from a closed society to an open society that values the present. Open societies that value novelty and the present moment are one of the pillars of the *ephemerality* of the fashion system. The word *ephemeral*, in the sense of something transitory, is one of the concepts discussed. How ephemeral can a fashion or product be in contemporary society? Currently, there are two opposing views both of which are discussed in the sphere of production: *Fast-fashion* (Joy *et. al.*, 2002) and *Slow-fashion* (Clark, 2008).

b) Great technological advances in the textile industry. According to Lipovetsky (1989), Mesquita (2004) and Boucher (2010), when France and England recovered from the Hundred Years War (1337-1453), there was a demand for greater trade, both in the sense of an exchange of goods and also in *technological innovation*. It is in this sense that the authors link fashion with trade and technology. How technological innovation can be associated in contemporary society?

c) Economic expansion strengthened by trade. Boucher (2010) argues that the textile industry (in terms of volume and range of products) became more important in the 16th Century in response to the widespread opening up of trade in the previous century. As a result, fashion was and is linked to *consumption, trade and business*.

d) Class competition. The middle classes imitated the habits and customs of the aristocracy in a search for social recognition. The mimicry that is found in clothes and accessories allow psychological and social fantasies to be staged. According to Mesquita (2004), socio-economic distinctions based on appearance are no longer possible in societies that are fragmented like those of the contemporary world.

e) The emergence and strengthening of anthropocentrism. The recognition of the value of the individual, or rather *individuality* is a pillar of fashion but one that leads to a paradoxical situation. At the same time that the individual is distinguished in aesthetic terms for example, he/she is also subjected to collective rules and standardization, whether in types of clothing or behavioral patterns. Mesquita (2004) states that since the 1990s, the pillars of fashion – ephemerality, aestheticism, individuality and the paradox of standardization/differentiation, form a non-linear pattern that is more complex than the old framework.

This paradox is important to understand user's experiences. Coleman (1999) in his chapter *Inclusive Design – Design for All* argues that design for everybody must include socio-cultural factors, or in other words, the experiences of the customers/users should be taken into account when making products and those these, in turn, can provide users with pleasures. With regard to the socio-cultural context, there is a dilemma which is outlined by Üstün *et al.* (2001):

“The experience of disability is unique to each individual, not only because the precise manifestation of a disease, disorder or injury, but also because the consequences of these health conditions will be influenced by a complex combination of factors, from personal differences in experience, background and basic emotional,

psychological and intellectual make-up to differences in the physical, social and cultural context in which a person lives.” Üstün et al. (2001: 09). [3]

In providing a flexible classification model for health which embodies the perceptions of each individual in the physical, psychological and socio-cultural context in which someone lives, the definition, or rather the experience of disability when only characterized in physical terms, is clearly influenced by different experiences. This perception is unique and individual, and depends on the socio-cultural context since it is bound up with socio-cultural and historical interpretations.

3.1 Design for health that embodies fashion

Health design has close ties with inclusive design which, in turn, follows the principles of responsible design. Cooper (2005) argues that health design can be understood as a kind of design that seeks improvements in the provision of services and better experiences for the patients, and hence should be regarded as a design that allows an improvement in the quality of life, by concentrating on the perceptions of patients. The definition is open-ended and sets out a range of intermingled categories: a) service, b) architecture, c) products and communications, this research focus in the last one.

Cardoso (2012) explains that they are immobile artifacts in the physical sense – that is, products built by man which *cannot be moved*, such as architectural projects. It should be pointed out that usually the artifact in itself cannot be altered structurally but its semantic meanings can, since these are related to changes undergone in space and time.

Hence, it can be understood that the design of products for health consists of mobile artifacts which can improve the quality of life of patients. It is necessary to separate product designs for health into two basic categories that take account of the world of the patients:

a) *Products designed FOR the use of the patient*: artifacts required by various users such as surgical instruments, thermometers, and hospital stretcher beds. This category concerns products that affect a wide range of users such as doctors, nurses and patients. When the product is designed, account should be taken of the architectural environment as well as the way it will be handled by the patients themselves, and other users too, such a health personnel and cleaners.

The health products used by patients are very often included in the hospital surroundings. It is worth pointing out that there is a wide range of health products that can be transferred to the home (such as the stretcher beds themselves) or which can be designed for the socio-cultural world of the users.

b) *Products designed for use BY the patient*: artifacts required by a single user such as prosthetics and clothing.

Design products for health are understood here as being *wearable*, whether removable or not, and worn on the body of the wearer-patients with a view to improving their quality of life.

The English language draws a clear distinction between a *user* and a *wearer*, the former being applied to *non-wearable* products such as chairs and stretcher beds for example and the latter for garments/articles that can be worn such as clothing and

shoes. This semantic distinction is an aid to the development of hybrid products which can usually be employed in different environments and socio-cultural milieus. This means that designing a stretcher bed is very different from designing a *wearable* product. The bed is likely to form a part of the socio-cultural milieu of the user, either in his house or in hospital surroundings. Designing a *wearable* product means that the *wearer* will have it on his person at different times in his life and thus the designer must take into account other socio-cultural milieus of the individual and his surroundings.

Wearable items for health can be divided into two large subcategories – clothing and accessories. Garments are the main artifacts that drape the body while accessories are adornments or additional features of the body and/or clothing such as glasses, handbags, walking-sticks and footwear including upper limb prostheses. According to Vainshtein (2012: 140), “*in Western cultures accessories not only decorate, but also, magically protect the vulnerable body against evil forces and close imaginary gaps.*” Moreover, in carrying out research in the area of fashion, the author has found evidence of the symbolic function of accessories.

Bonsiepe (1982: 19) was one of the first researchers of health design in Brazil. In his view, design products for health can be regarded as prosthetics or orthotics. The former are responsible for replacing the function of an organ or limb and the latter “*have the capacity to correct deformities and/or prevent them from deteriorating.*” In this way, when considering clothing design for health, the design products are essential for ensuring that the pathological conditions of the wearers are prevented from getting worse.

Research into the question of clothing for the disabled in general, is centered on the basic requirements of comfort, usability, usefulness and durability. The study of human anatomy and pathology are drawn on for the development of products with ergonomic principles.

Many items produced for people with special needs – disabled people, the elderly and even children, still have a medical or clinical aesthetic condition that is easily recognized through their appearance, which conveys an idea of the restrictions imposed on those who use them and which leads to social exclusion rather than inclusion. Roncoletta and Martins (2011) point out that this can cause a social situation of dissatisfaction and discomfort for the wearer, if for example, the appearance of shoes worn by diabetes patients testify to the restrictions imposed on the wearers and confer a negative value on their *emotional benefit*. These kinds of products do not fashion products, just clothes. Why? Because they are just functional – the paradox of standardization/differentiation, ephemerality, aestheticism and specially individuality is too weak.

Roncoletta and Loschiavo (2012) also state that usability and usefulness are not only combined as practical design functions but are also aesthetic-symbolic features. By the former is understood the use of the object and by the latter, the relationship between an object of use and its communicative power, the context in which it is employed and the previous experiences of the wearer; these are often emotional subjective elements that are of crucial importance for personal symbology.

Vainshtein (2012: 143) states that prosthetics was usually designed to replace a limb and could also act as a “*fashionable [accessory], the distinctive additions to a person’s identity and looks*”.

*The Alternative Limb Project*¹ is an example of the development of prosthetics that can reflect the “*imagination, interests and personalities of the wearers*”. In other words, the paradox of standardization/differentiation and individuality are preset in a deep level. This is carried out in a number of accompanying stages, the first of which involves finding something that is fitting between the organic body or artifacts and the discussion of ideas and concepts.

The criterion of fittingness is regarded by the person concerned as satisfactory when he/she feels physically comfortable. The appearance of the prosthetics is the outcome of discussions of ideas and concepts between planners and wearers. In this stage, the socio-cultural dimension of the wearer is investigated so that the aesthetic-symbolic features of the prosthetics can (according to the *website* of the project) reflect “*the imagination, interests and personality of the wearers*”. As a result, the project expects the prosthetics to lead to the socio-cultural inclusion of a disabled person since its appearance is designed to reflect some of their socio-cultural dimensions.

The *website* provides information about two basic categories: realistic limbs (fig. 2) – which imitate the human body –, and alternative limbs (fig. 3) – where the aesthetic appeal is created in accordance with the wishes of the wearer. In both categories, the project encourages socio-cultural inclusion because the wearer can choose the prosthetic replacement.



Fig. 2: Realist limbs. Undertaken by: The Alternative Limb Project. Available at: <http://www.thealternativelimbproject.com/>. Accessed in January 2013.

¹*The Alternative Limb Project* by Shopie de Oliveira Barata, London, UK. According to *website* profile “Sophie comes from an art background at London Arts University where she studied *Special Effects* prosthetics for film and T.V. She then went on to work for 8 years, as a sculptor making realistic looking, bespoke prosthetics for amputees at one of the leading prosthetic providers”. Available: <http://www.thealternativelimbproject.com/>. Accessed in January 2013.

The first, realist project, is a copy of human body, however is good emphasize the singularity of human body.



Fig. 3: Prosthetic that recognizes the value of the aesthetic-symbolic features of the artifact and lead to socio-cultural inclusion. Undertaken by: The Alternative Limb Project. Available at: <http://www.thealternativelimbproject.com/>. Accessed in January 2013.

The second category which involves exploring the life-style of the wearers, can be related to fashion individuality. Fig. 3 shows the singer Viktoria Modesta. In website *Alternative Limb Project*, she adds “...it’s important to take control of your own body and most importantly improve it or reflect your personality through altered body image”.

Can be observed the power of image communication through the hybrid wearable artifacts that could be at the same time a fashion accessory, a design project and a health prosthetic.

Conclusions and Future Work

The process of changing the paradigm was begun by adopting the social model in ICF of the WHO when it incorporated socio-cultural factors. Thus it was possible to understand why most schemes for disabled people in the 20th Century were carried out without taking account of the socio-cultural dimensions of the wearer.

The examples of *The Alternative Limb Project* are intended to embody fashion as a socio-cultural phenomenon. It is possible to discern a feasible approximation of the

outlook of the designer in the area of health with the outlook of the designer in the area of fashion, so that, in partnership, they can foster effective socio-cultural inclusion and improve physical health in a way that culminates in a better quality of life and state of well-being.

When fashion is viewed as a socio-cultural phenomenon, it is clear that from the moment when society first began including disabled people into society, some designers of orthoses and prostheses adapted to this new climate, albeit somewhat timidly, and developed designs that recognized the value of the socio-cultural dimension of the individual, or rather, a combination of their personal styles and practical purposes (or “functionality”), as for example, *The Alternative Limb Project*.

Thus, the two categories – realist and alternative limb - are hybrid wearable artifacts which pose a challenge to crossing the border among the organic/material body, fashion design (clothing or accessories) and health products.

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