



6th International Conference on Applied Human Factors and Ergonomics (AHFE 2015) and the  
Affiliated Conferences, AHFE 2015

## MiPiacce Methodology: A pragmatic method used for an analysis of pleasures provided by shoe design that developed for disabled wearers

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### Abstract

The aim of this paper is presenting *MiPiacce Methodology*, which can be applied by shoe wearers to measure the pleasures provided by shoe design for women with lower limb dysmetria. Qualitative methodology, which was descriptive and interpretative, was applied with mix techniques, such as comparative analysis of secondary sources, semi-structured interviews with five health professionals, and a phenomenological methodology with nine wearers. These analysis were based on observation and were conducted by a single researcher - an inner validation. The third technique, based on semi-structured interviews with nine wearers - configuring sampling intensity - was used to collect data from primary sources. Disabled adult females were chosen. All of them had a disorder in the musculoskeletal system which has made it difficult for them to find suitable footwear over a period of more than a decade. The analytic induction was employed as the qualitative methodology of analysis for the interviews. It can be concluded that the inconsistency in the degree of pleasures provided by the same style of shoes underlines the importance of conducting a holistic analysis to detect the strong and weak points of each shoe design for the wearer. When the types of pleasure were linked to the wearers' social background, it was clear that their experiences affected their perception of pleasures and socio-cultural inclusion. It can be concluded that the understanding of the relationships referred to above can enable the production of a pleasurable shoe design which lead to effective socio-cultural inclusion, and as a result, an improvement in quality of life in terms of both physical health and well-being of the wearers.

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Peer-review under responsibility of AHFE Conference

*Keywords:* Pleasures; Shoe design; Disabled adult females; Physical health; Well-being

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## 1. Introduction: The four pleasures in shoe design

It is observed, in this research, the relations among the functions of the design using the Theory of Four Pleasures by Jordan<sup>1</sup>. Pleasure is an abstract feeling which is found in the relation among the wearer, products and the environment. According to the author, based on the Canadian Lionel Tiger's anthropological studies, there are four kinds of pleasures: physical, social, psychological, and ideological.

The physical pleasures derive from the relation between products and sensory organs. The objectives of comfort and pleasure are correlated at physical and physiological levels. According to Roncoletta<sup>2</sup>, a shoe that is easy to wear with anti-skid outsoles and that stands firm, stimulates a pleasurable feeling that includes comfort and security. In shoe design, the material components that touch the body and even the sense of smell of a particular material, are the main elements that are responsible for offering physical pleasures. It should be stressed that other factors are also essential such as physical comfort conferred by the mold, for example a rounded toe cap, or even by modeling which can allow people to walk without pinching their feet.

According to Jordan, the psychological pleasures are associated with people's emotional and cognitive reactions towards products; it refers to the mind pleasure in accomplishing tasks related to the usage and compatibility of the products considered friendly products.

The social pleasures are the interaction among several people encouraged by products. On the basis of this theory, the question of comfort is seen as a social relationship that is made possible by artifacts. Fashionable trends and status can either include or exclude a group of individuals.

The ideological pleasures are associated with the aesthetical and ethical values of some culture, generation or individual; sustainable values as well as social, political and moral responsibility are a part of the ideological pleasures. Making use of artifacts that are ecologically correct shows a moral concern with the world and can be a cause of pleasure to the user. These values are elastic and can be influenced by fashionable trends and an industrial culture, of which the Brazilian soap operas form one part, according to Roncoletta and Loschiavo<sup>3</sup>.

From this perspective, comfort is understood as a physical and social pleasures relation between users and objects. In this context, fads can either insert or exclude a group of individuals.

Comfort depends mostly upon the perception of the person who is going through the situation. There is no definition universally accepted (Lueder<sup>4</sup>; Slater<sup>5</sup>; Zhang<sup>6</sup>). Recently, some researchers have suggested that comfort is linked to pleasure, which introduces borderlines not well defined between the use and the functionality (Slater<sup>5</sup>; Jordan<sup>1</sup>). Simultaneously, another group of researchers admits that comfort and discomfort hold two dimensions: comfort associated with feelings of relaxation and well-being, and discomfort linked to biomechanical factors and to the fatigue (Zhang<sup>6</sup>; Goonetilleke<sup>7</sup>).

A lot of products developed for people with special needs have medical or clinical aesthetics easily recognized by their looks, which communicate the wearer's disability, leading to social exclusion and not to inclusion. A socially uncomfortable situation for a wearer, such as the weird looks of shoes for diabetics, discloses the wearer's disability which is, according to Roncoletta and Martins<sup>8</sup>, a negative emotional value.

In conclusion, usability and functionality are directly associated with the wearing of the object and its practical functions. They are also associated with its aesthetical-symbolic issues, i.e., the wearing of the object also depends on its communication, on the wearer's context and also on his/her repertoire of previous experiences, which are subjective aspects.

## 2. MiPiacce Methodology

This section outlines the encoding model for the Theory of Four Pleasures by Jordan and the main features of shoe design. First of all, semi-structured interviews with five health professionals were applied. Then, a combination of the two first techniques resulted in the ergonomics and usability analysis of the shoe design in compliance with the criteria from the *Footwear Comfort Seal* by IBTeC<sup>9</sup> recombined with *Oikos Methodology* by Martins<sup>10</sup> and *Common Methods for Testing Footwear by Hand* by Menz and Sherrington<sup>11</sup>. The criteria mentioned above were chosen because they made it possible to carry out validation through multiple triangulation and replication in future research. For this reason, a combination of the three methods mentioned was employed, as well as semi-structured interviews with health professionals to create a primary coding.

Then, semi-structured interviews with nine wearers were applied using a phenomenological methodology. The theory and methodology of Phenomenology were founded by the philosopher Edmund Husserl<sup>12</sup> that addresses the

question of the *intellectual intuition* of essences or significations, since each representation is individual and singular, although these representations may have the same essential signification. Hence, they can be regarded as the particular and singular features of each interviewee and serve to bring them together in an inductive and plausibly generalized concept, when the representation is possible within the same essence. In his work *The Phenomenology of Perception*, the French philosopher Merleau-Ponty enters into a debate with Husserl. Merleau-Ponty<sup>13</sup> gives prominence to the world of living experiences as being the first plane where human beings and knowledge acquired through perception, can be configured.

With regard to the ethical dimensions of this research, the Consent Form Term and the anonymity were used (CONEP)<sup>14</sup>. After the interviews, the key concepts are reviewed. The key concepts are the definitions of the codes which are described below and which might be used for definitions and very often measurements, on the basis of the physical dimensions of the shoe design (as calculated by the researcher). It should be stressed that the comments of the interviewees are crucial importance when analysing their perceptions with regard to very subjective criteria such as those of a socio-cultural kind which are intertwined with emotional, psychological and ideological factors. The analytical criteria have been arranged in a scoring system from 1 to 5 to measure performance, as shown in Table 1.

Table 1. Measurement of performance as employed in most of the conceptual codes discussed.

Scores	Performance
1	Very poor
2	Poor
3	Satisfactory (fair)
4	Very good
5	Excellent

The physical pleasures can be found in the sensory dimension. The main ergonomic and usability factors in shoe design can be attributed to the concepts of equilibrium, security and comfort.

Equilibrium is the feeling of stability when walking, which can be provided by shoe design. This perception can be found in the structure of the sole, in accordance with the guidelines set out in Table 2.

Table 2. Analytical criteria for equilibrium in shoe design.

Parts of the shoe	Analytical criteria
Heel	Keeps the axis of physical equilibrium
Toe cap	Keeps the elevation of the toe cap (toe spring) at a height of 1.0 cm from the ground.
Midsole	Has a slightly stiff structure to protect the spinal column Allows walking without difficulty

Security is a feeling of solidity when the shoe fits well and at the same time, one can walk without slipping. The features of the outer sole are analysed together with the inner part of the upper, as shown in Table 3.

Table 3. Analytical criteria for security in shoe design.

Parts of the shoe	Analytical criteria	
Sole	Outsole	Has anti-skid material.
	Sole	Has longitudinal bending in a key point at the base of the Apollo triangle to allow walking with ease.
	Heel	Check the height of the heel since the ideal height is 2.0 cm and the more it goes beyond this, the worse the performance. Choose a heel model with a broad base, which, at the same time, allows freedom of movement.
Inner Upper	Heel tip	Has anti-skid material.
	Fitting	Allows space for the toes in the front part of the Upper while walking and keeps the original shape of the toe cap. A light pressure is felt in the feet in the rear and front of the Upper.
		Have adjustable straps along the whole of the upper.

Physical comfort is the feeling of physical ease that the shoe design can provide. In this area, the prerequisites of shoe design are as follows: correct weight, freedom of movement when walking, the tactile quality of the material, and even factors such as controlling the perspiration and temperature, as shown in Table 4.

Table 4. Analytical criteria of physical comfort arising from concepts of weight, freedom of movement when walking, tactile perceptions and control of perspiration from the feet.

Prerequisites	Parts of the shoe		Analytical criteria
Weight	Sole and Upper	All	Check the weight of each shoe – the standard weight is a maximum of 360g.
Freedom of movement	Inner Upper	Modeling Finishing (Seams)	Allows walking with ease. Ensure that finishing are not overlapping the joints and allow freedom of movement when walking.
Perspiration	Inner Upper	Modeling Materials	Allows venting of perspiration. Check the materials that allow venting of perspiration of the feet.
Temperature	Inner Upper	All	Impossible to determine. Check: modeling and materials.
Tactile perception	Inner Upper	Materials Insole	Check whether the inner materials are soft and not abrasive. Gives a feeling of treading on a soft surface.

Psychological pleasures are found in two areas, the first being the satisfaction derived from carrying out tasks and the second is the wearers’ emotional relationship with their shoes. In the case of shoe design, the former can be attributed to the degrees of ease and/or difficulty in handling and maintenance, as shown in Table 5.

Table 5. Analytical criteria for an analysis of the concepts of handling and maintenance that belong to psychological pleasure.

Tasks	Parts of the shoe		Analytical criteria
Handling	Upper (inner and outer parts)	All	Check if it is easy to put on. Check if it is easy to take off.
Maintenance	Upper (inner and outer parts)	All	Check if it is easy to clean.

In the case of the second, an emotional dimension, it should be determined how and to what extent shoe design can allow a recognition of the value of self-esteem and well-being. With regard to shoes, the degree of convenience can be quantified (Table 6), or in other words, it entails whether and how far the adaptation of the shoe is acceptable to the individual herself and if and to what extent this adaptation helps the person concerned overcome any feeling of restriction. It was found that most of the interviewees did not want to experience awkwardness and preferred to disguise their restrictions. Hence, the more skilful the adaptation, the greater the chance of increasing self-esteem and well-being and, as a result, allowing shoes to improve the quality of life and ensure socio-cultural inclusion more effectively. It should be remembered that socio-cultural inclusion depends on a person’s background, social circumstances and environment.

Table 6. Analytical criteria for convenience provided by the shoe design and related to psychological and social pleasure.

Parts of the shoe		Analytical criteria
Outer Upper	Front and rear	Check if the adaptation overcomes the wearer’s restrictions.
	Front and rear	Determine how far the adaptation overcomes the wearer’s restrictions.
Inner Upper	Insole	Check if the use of the insole is acceptable to the wearer.
		Determine how far the use of the insole is acceptable to the wearer.
Outer sole	Sole	Check if the adaptation overcomes the wearer’s restrictions.
		Determine how far the adaptation overcomes the wearer’s restrictions.
	Heel	Check if the adaptation overcomes the wearer’s restrictions.
		Determine how far the adaptation overcomes the wearer’s restrictions.
Heel tip	Check if the adaptation overcomes the wearer’s restrictions.	
	Determine how far the adaptation overcomes the wearer’s restrictions.	

The emotional dimension of psychological pleasure is closely bound up with social pleasure and the stigma attached to the wearer’s environment. Owing to the blurring of the boundary-lines between social and psychological pleasures, it was decided to show the concept of convenience together with the emotional dimension of psychological and social pleasures.

Social pleasures can be found in an area where it can be assumed there is an interaction of more than one person with the artifacts. With regard to shoes, kind of wearable accessories, that are usually only worn by an individual, social pleasure can be attributed to personal desire, and sociability.

In accordance with Table 7, sociability involves an analysis of the imposition of set standards which can be a source of social discomfort through fashion trends, fads or style impositions, whether on ceremonial occasions, at work or in leisure activities. It should be borne in mind that the kind of discomfort caused by social pressure in the use of a high heel for a particular occasion, can be related to the concept of securing physical pleasure.

Table 7. Criteria of sociability associated with the social pleasure provided by shoe design.

Parts of the shoe		Analytical criteria
Outer sole	Heel	Observe if there is any pressure from the social milieu with regard to the model of the heel.
Inner sole	Heel	Observe if there is any pressure from the social milieu with regard to the height of the heel.
Inner Upper	Insole	Determine whether the adaptation overcomes the restrictions. Determine how far the adaptation overcomes the restrictions.
Outer Upper	Toe cap	Observe if there is any pressure from the social milieu with regard to the shape of the toe cap.
	Materials and finishing	Observe if there is any pressure from the social milieu with regard to the materials and finishing.

Ideological pleasures are found in the dimension related to the ethical, moral and political values of society and/or the individual. An attempt is made to establish if the person concerned complies with the selection criteria of a conscious consumer, as shown in Table 8.

Table 8. Analytical criteria with regard to ideological pleasure.

Concepts	Parts of the shoe		Analytical criteria
Social responsibility	Upper and sole	All	Determine whether or not the wearer is concerned about the exploitation of the workforce.
Sustainable development	Upper and sole	Materials	Determine if there are any eco-sustainable criteria for the choice of materials.
Life-cycle	Upper and sole	All	Determine if the wearer is concerned about the disposal of the shoes.

According to Roncoletta<sup>2</sup>, it is evident that unfortunately there are very few shoe designs for disabled people with motor impairment, that incorporate the dimensions and concepts that have been investigated here from the perspective of the Theory of Four Pleasures by Jordan.

### 3. Application of the MiPiacce methodology

The MiPiacce methodology has been validated internally (Gray<sup>15</sup>); that is, the results of the study have originated from the reflections of a single researcher, supported in the research process itself by a set of theories based on an encoding system – in this case the Theory of Four Pleasures by Jordan. A methodology was employed in the analysis of 36 pairs of shoes. In this paper, eight were presented. Two pairs of shoes were chosen from shoes with similar styles to ensure the methodology had a greater degree of reliability, as was suggested (either directly or indirectly) by the shoe-wearers who were interviewed. In this way, it was possible to determine the degree of consistency (or inconsistency) of the results in the different spheres of pleasure.



Fig. 1. Sneakers (1.1) and (1.2). Source: Roncoletta (2014).

In first picture (fig. 1.1), sneaker 1.1 had an excellent performance. Excellent *physical pleasure* due to the feeling of security, equilibrium and physical comfort. Very good *psychological pleasure* due to a very good performance in carrying out tasks and an excellent performance in emotional dimension of psychological pleasures. Excellent *social pleasure*. It was not possible to analyse the *ideological pleasure*.

In second picture (fig. 1.2), sneaker 1.2 had a satisfactory performance. Poor *physical pleasure* resulting from a combination of very bad longitudinal bending point and weight in the adapted shoe, but a satisfactory sensation of security, fitting and use of anti-skid material in the outsole. Very good *psychological pleasure* due to a very good performance in carrying out the tasks and an excellent performance in emotional dimension of psychological pleasures. Excellent *social pleasure*. It was not possible to analyse the *ideological pleasure*.



Fig. 2: Flip-flops (2.1) and (2.2). Source: Roncoletta (2014).

In third picture (fig. 2.1), flip-flop 2.1 had a very good performance. Very poor *physical pleasure*. Only a minimal feeling of security, since the shoe does not allow the instep to fit well under the shoe upper – there are only two straps at the front. With regard to walking, the height of the adaptation might make the wearer twist her ankle and the stiffness of the sole and lack of longitudinal bending point hampers the movements of the body, which can cause physical dissatisfaction. Excellent *psychological pleasure*. As regards carrying out tasks, the ease in cleaning and handling is excellent; there is an excellent emotional perception of the wearer with this shoe and its context of life, as shown in the following comment: “*I love flip-flops, I go out in them feeling happy, really happy...*” Excellent *social pleasure* derived from excellent sociability, since there is no social pressure to wear this style of shoe. It was not possible to analyse the *ideological pleasure*.

In fourth picture (fig. 2.2), flip-flop 2.2 had a very poor performance. Very poor *physical pleasure*. Minimal feeling of security, since the shoe does not allow the instep to fit well under the upper – there are only two straps in the front. With regard to walking there is a risk that the height of the adaptation can twist the wearer’s ankle; the stiffness of the sole and lack of longitudinal bending point can hamper the natural movement of the body. The accumulation of EVA layers made the shoe feel heavy and this can cause tiredness and physical dissatisfaction. These features result in the shoe having a very poor performance of physical pleasure. Very poor *social pleasure*. It should be realized that this adaptation may cause the wearer a feeling of shame because it shows very poor sociability and social dissatisfaction, since the wearer states that she only wears it at home. Poor *psychological pleasure* resulting from the excellent performance in the dimension of psychological pleasure and carrying out tasks; there is also an extremely ease of cleaning and handling – but a very poor performance attributed to the fact that the aesthetic features overcome the physical restrictions. This is a factor that can weaken the wearer’s self-esteem. It was not possible to analyse the *ideological pleasure*.



Fig. 3: Wedges (3.1) and (3.2). Source: Roncoletta (2014).

In fifth picture (fig. 3.1), wedge had a very good performance. Satisfactory *physical pleasure*. The combination of the items that provide the sensation of equilibrium, physical comfort and security is acceptable. It should be noted that the model of heel, with a very poor longitudinal bending point, may cause a sensation of insecurity. All these features bring about an acceptable physical pleasure. Excellent *psychological pleasure* resulting from a combination of handling and maintenance, convenience and sociability. Very good *social pleasure*. There is an excellent acceptance of the adaptation which can lead to the recognition of the value of self-esteem and improve well-being. With regard to sociability, the performance of the shoe is satisfactory, since it provides good interaction which does

not hamper the restriction of the wearer; from the standpoint of the wearer, the wedge is a style of shoe to wear casually with jeans. It is apparent that the choice is that of the wearer and is not a social imposition. It was not possible to analyse the *ideological pleasure*.

In sixth picture (fig. 3.2), wedge 3.2 had a satisfactory performance. Satisfactory *physical pleasure*. The combination of items which make up the feeling of equilibrium, physical comfort and security is acceptable. It should be noted that the model of heel with a very poor longitudinal bending point, may cause a feeling of insecurity. All these features lead to an acceptable physical pleasure. Satisfactory *psychological pleasure*. The handling is satisfactory but ease of maintenance is poor. Satisfactory *social pleasure*, since it leads to good interaction and does not cause restrictions to the wearer. There is a reasonable appreciation of the adaptation which can encourage a recognition of the value of self-esteem and improve well-being. However, a negative factor is the aesthetics of the shoe related to social and psychological pleasure. A sign of this is found in the wearer comment when she says: “The wedge platform is not very beautiful aesthetically”. It was not possible to analyse the *ideological pleasure*.



Fig. 4: Sandals (4.1) and (4.2). Source: Roncoletta (2014).

In seventh picture (fig. 4.1), sandals 4.1 had an excellent performance. Excellent *physical pleasure*. The feeling of equilibrium, physical comfort and security are excellent; in the last, what stands out is the excellent fastening to the ankles. The height of the adaptation allows the body to move in a natural way and the location of the longitudinal bending point is excellent. Despite the increase of the sole, the shoe remains light. Excellent *social pleasure*. Causes an excellent interaction and does not hamper the wearer's restriction. Excellent *psychological pleasure*. In the emotional dimension, there is an excellent appreciation of the adaptation which can help recognize the value of self-esteem and improve well-being. There is also excellent handling and maintenance. Very good *ideological pleasure*. Although it is difficult to determine this pleasure because of the extremely small number of shoes that take account of this dimension, it was apparent that the wearer is looking for products of a better quality and which last longer and, as a result, reduce the need for early disposal.

In eighth picture (fig. 4.2), sandals 4.2 had a very good performance. Very good *physical pleasure*. The combination of the feeling of physical comfort and security are very good and a cause of physical pleasure. Satisfactory *psychological pleasure* and excellent *social pleasure*. With regard to carrying out tasks, the combination of very good ease of handling and very poor maintenance - the material is difficult to clean - results in a reasonable performance. The emotional dimension of psychological pleasures and social pleasures are excellent, owing to the fact that the sandals do not cause restrictions to the wearer and there is no social pressure on people to wear them; it is a question of personal choice and taste. It was not possible to analyse the *ideological pleasure*.

#### 4. Conclusion

The methods and analytical criteria for examining pleasures from shoe design were employed with the aim of broadening the knowledge of every feature of design linked to pleasure. This was a methodological challenge that was raised by Jordan in his work *Designing Pleasure Products*.

In conducting the analysis of the pleasures from adapted shoe designs, close links were observed between pleasures and other factors such as the height or instability of a very high heel. This is certainly a cause of physical discomfort but at the same time it can induce social comfort, depending on the social circumstances of its use and

even the experience of the shoe wearer herself.

These conceptual correlations clearly confirm the importance of analysing shoe design holistically by dissecting each of its features and relating it to a particular type of pleasure.

It can be concluded that, depending on the kind of adaptation carried out, the design can have either a very poor or excellent performance, in the different spheres of pleasure. When the two styles of sneakers (gym shoes) were compared by employing the *MiPiacce* methodology, it was found that the one in first picture (1.1) had an excellent performance, whereas, although that in second picture (1.2) had a satisfactory performance in the four pleasures, its physical pleasure was poor. According to one of the interviewees, Me. Diniz to Roncoletta and Loschiavo, this is a sphere that is not usually noted by the wearers of this style of shoe.

When the two adaptations of the flip flops (sandal slippers) were compared, different levels of performance were also detected. That in third picture (2.1) had a very good performance, while that in fourth picture (2.2) had a very poor performance. In these cases, both can provide physical pleasure.

The differences in pleasure between the two wedge shoes is also worth mentioning, since that in fifth picture (3.1) had a very good performance while that in sixth picture (3.2) only had a satisfactory performance. It should be noted that both had acceptable physical pleasures. Respectively, excellent for the first sandal and satisfactory psychological pleasure for the second one - the materials used for the latter are difficult to clean and hence its performance was inferior to the former. Finally, the comparison between the strappy sandals showed an excellent performance in seventh picture (4.1) and very good performance in eighth picture (4.2).

The inconsistency in the degree of pleasure provided by the same style of shoes underlines the importance of conducting a holistic analysis to detect the strong and weak points of each design and/or adaptation of the shoes. When the types of pleasure were linked to the social background of the wearers, it was clear that their experiences affected their perception of pleasures and socio-cultural inclusion. It can be concluded that an understanding of the relationships referred to above, can enable a pleasurable shoe design to be produced that can lead to effective socio-cultural inclusion and as a result, an improvement in quality of life in terms of the physical health and well-being of the shoe-wearers.

## Acknowledgments

CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, Brasil).

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