

The evaluation of (social-)psychological comfort in clothing, a possible approach

L L Matté¹² and A C Broega¹

¹Centre for Textile Science and Technology, Department of Textile Engineering, University of Minho, Guimarães, Portugal.

²Department of Fashion Design, Federal University of Technology - Paraná, Apucarana, Brazil.

E-mail: livialauramatte@yahoo.com.br

Abstract. This paper presents the first results of a PhD research on psychological comfort of clothing. In order to understand and conceptualize the psychological aspects of clothing comfort, a variation of the Delphi Method was used to seek opinions from experts. This method was chosen because of its consensus-building features. The results were obtained from a qualitative text analysis, conducted over the experts' responses to the first round of questions. The analytic process shed some light on the formation of the psychological comfort concept as well as the potential attributes to be evaluated when assessing this comfort dimension.

1. Introduction

In the last few decades, the concept of comfort became crucial for marketing products and services. From food to fashion advertisement, constantly, people are exposed to commercial stimuli that link products to the idea of comfort. Despite the familiarity and the frequent occurrence of words related to comfort in daily life, it is difficult to describe what exactly is the meaning of comfort. Comfort has not a consensual definition, however, great part of the researchers agree that comfort is a multidimensional and subjective experience [1–4]. Slater [3,5], was one of the first authors to acknowledge the comfort of clothing as being a complex phenomenon that comprises at least 3 dimensions: the physical, the physiological and the psychological. In the context of clothing, there has been a focus mainly from a physical-mechanical and/or physiological point of view, with little consideration for the more subjective aspects, namely, the aesthetic and emotional ones, linked to individual needs or social contexts [1]. Still, some of the most important researchers in the science of comfort, recognize that the physiological properties are 'not the whole story', asserting that, between the most basic perception of suitability and the ostentatious conspicuous consumption, there is an 'important component of self-confidence and being at ease' [6].

Because of its subjective nature, psychological comfort is affected by personal idiosyncrasies and therefore is very difficult to assess. There are many models designed to explain clothing comfort that consider the psychological dimension as being one of its components. Some of them will be mentioned in this paper. Although they do not intend to present a clear set of attributes to be measured, nor to propose a specific method of evaluation, they have contributed to the clarification of the psychological comfort concept, as well as to the elucidation of the importance of the psychological role in the overall perception of clothing comfort. The understanding of which factors contribute to the



perception of psychological comfort is fundamental for the establishment of a valid concept, as well as the definition of parameters to consider when evaluating this dimension of comfort.

The psychological comfort is a hedonic judgment process, by which the brain forms a subjective perception of sensory sensations, influenced by many factors. Liu and Little [7], indicated some factors that interfere in the perception of psychological comfort, namely “the user's state of mind, cognitive and emotional processes, the environment, the cultural and social surroundings, and also, physical stimuli”. Fan [4], advocates that the psychological comfort happens, when someone is confident about its own appearance and therefore has a sense of well-being. Among factors such as flattering the person, aesthetics, cost and performance, the author demonstrates that the social aspects related to belonging to a group and feeling adequate among its peers (“allegiance to a specific culture, cause or groups and accordance with economic, functional and social” level), have a great impact on the perception of psychological comfort.

For Kilinc-Balci [9], psychological factors are critical for the perception of comfort and are the primary determinants of consumer behaviour. Factors like price and brand, the psychological status of the wearer, beliefs, cultural and social elements, including past experiences, were signalized as components of the psychological aspect of comfort. Unlike the previous authors, Sontag [10], proposes a distinction between “psychological” and “social factors”, considering them as separate dimensions of the comfort concept. For the researcher, the psychological dimension is a “mental state of psychological well-being”, driven by a sense of dressing accordingly to one’s self-concept. The social dimension concerns the appropriateness to occasion, conformity, and satisfaction with the impression made on others. This approach understand clothing as a means of “identification and attracting oneself to others” [10].

According to Branson and Sweeney analysing the Sontag’s work [11], they defended that her identification and description of the comfort dimensions presents some discrepancies. They believe that there are no empirical data to support a clear distinction between psychological and social comfort. Thus, in Branson and Sweeney’s model, they used the term “social-psychological” to include the concepts proposed by Sontag of social and psychological comfort, as well as, cultural and historical concepts. From a vast literary reviewing, that included the works of Sontag, the authors have proposed a clothing comfort concept and a clothing comfort model [11]. For them, the clothing comfort is “a state of satisfaction indicating physiological, social-psychological and physical balance among a person, his/her clothing, and his/her environment.”. The definition presented by the authors encompasses the definitions suggested by Slater, Sontag, and the ASRAE Thermal Comfort definition, which characterize comfort as a “satisfied state of mind indicating balance, harmony or equilibrium between a person and his or her environment” [11].

The model proposed by Branson and Sweeney [11], contains a list of the attributes associated with the social-psychological dimension, that is divided according to the clothing comfort triad (person, clothing, environment): *Person Attributes* such as: “state of being”; “self-concept”; “personality”; “cathexis/body image”; “values”; “attitudes”; “interests”; “awareness”; “religious beliefs”; “political beliefs”. *Clothing Attributes* as: “fabric and clothing system”; “aesthetics”; “style”; “fashionability”; “appropriateness”; “design”; “colour”; “texture”; “body emphasis/de-emphasis”. *Environment Attributes* exemplified as: “occasion/situation of wear”; “significant other”; “reference group”; “social norms”; “cultural patterns”; “historical precedence”; “geographic locale”. Despite believing that all three components of the triad have a social-psychological dimension, Branson and Sweeney clarify that all of these attributes, are not well agreed upon by researchers nor well-elucidated in the literature. The authors stated that these lists of attributes are to be discussed and refined over time. According to that discussion, this work intends to generate a discussion about the concept of psychological comfort by a group of experts composed by psychologists, sociologists, designers, semiologists, marketers, engineers, by thinkers or researchers of this areas of specialty. By people who somehow have their work associated with the textile, clothing and fashion areas.

2. Methods

This paper presents the first results of a PhD research on psychological comfort of clothing, guided by the Sensory Analysis methodologies [12], supported by the Science of Comfort. It develops from three

steps: a) characterization of concepts and definition of the attributes (From a group of experts oriented by the Delphi Method), b) the creation of attributes scales and accomplishment of subjective assessments by sensory analysis techniques in “daily life conditions”. Finally in step c) it is contemplated the development of a tool that will guide designers, engineers and usability professionals to assess the comfort of garments.

For the first phase (step (a)), to be presented in this paper, the Delphi Method was used to reach the concept of psychological comfort of clothing, and to specify the possible attributes to a posterior subjective assessment of psychological comfort. Originated at The Rand Corporation, the Delphi survey is a widely accepted and validated research method. Its objective is to obtain the most reliable consensus of opinion from a panel of experts [13–15]. This particular study was carried out using a variant of the Delphi method, commonly, the technique is normally applied presentially, however, to facilitate contact with specialists, many geographically distant (Portugal-Brazil), the questionnaires were sent by e-mail. Despite the limitations of performing the Delphi survey according to the original model, it is believed that even in an adapted version, this method was the most suitable to seek different opinions, that could potentially, contribute to the development of a concept that is still in evolution.

The panel of experts was selected according to the following criteria: Portuguese-speaking researchers whose works are related to textile engineering, fashion design, comfort, ergonomics, psychology, sociology, etc. Initially, 57 potential experts were invited to take part in the study. A formal invitation was sent by email to the candidates, along with the questionnaire. Overall, 30 experts agreed to participate; with the remaining experts being non-respondents. At the end of the deadline, 26 specialists responded, representing a response rate of 86,67%. The anonymity of all members of the group was maintained during the research process. The first questionnaire submitted to the group of experts, consisted of four questions related to the psychological comfort of clothing, although the questions served as a script, the experts were encouraged to respond as freely as possible.

The answers to the first round were submitted to a qualitative text analysis, with the support of the QDA software, MAXQDA [16]. The aim was to identify, among the content of the answers, the notions regarding the psychological comfort of clothing that were more recurrent and that could potentially generate consensus. The analytic process took the following steps [16]:

- a. organization and coding of the documents containing the experts answers to make them anonymous (for each expert a code was assigned).
- b. importing the documents to MAXQDA.
- c. systematic reading of the answers.
- d. first word frequency count and outlining the first categories
- e. selecting segments of the text and assignment of codes.
- f. grouping similar codes (semantic proximity) into thematic categories.
- g. analysis and reviewing of the thematic categories in comparison to the integral text.
- h. building the final categories.
- i. counting the frequency of occurrence of the categories among the experts.

At the beginning, the volume of text to be analysed consisted in 2565 words. A list of word frequency was generated after applying an exclusion list, which eliminates insignificant words as grammatical construction elements, and numbers; the words with the highest occurrence (like well-being) served as the guiding thread for the creation of the first thematic categories. The next step was to reduce the large amount of data to a minimum, trying to grasp the most important and recurrent ideas, but without losing information. Firstly, transforming sentences into codes, and then grouping this codes into categories, by similarity of meaning. Then, the categories were revised in light of the reviewed literature and the nomenclature of some of the categories was altered to better suit the comfort theories. The final list of categories that summarize the experts’ responses is presented in Table 1 in the ‘Results and Discussion’ topic.

3. Results and Discussion

Table 1 shows the 13 categories originated by the analytic process. The first column represents the frequency of citations of every category. The second column, “referred by experts”, presents the

percentage of experts that referred to each one of the categories. The third column shows the list of categories, ordered by frequency of citation. The fourth column presents the codes that were grouped to form the main categories. This list of categories presents a series of concepts that closely resemble the intervening factors of psychological comfort that were already proposed by the literature [7–10]. Analysing the results, we can verify that the first four categories are the most representative in terms of psychological comfort because they represent more than half of 50% of the cumulative frequency of citation (50,25%), those are: psychological state, aesthetics, social aspects and self-image/self-confidence. In fact, more than 80% of the experts agree with this importance because they have mentioned it (at least 80,77%), in their contributions. The material properties, garment construction and fit, body (de)emphasis, environment, personality, culture, lifestyle, values/beliefs and past experiences, although they do not represent the majority, cannot be neglected in the analysis, and among these aspects, the most representativeness is closely related to the clothing and materials characteristics (19,46%).

Table 1. List of categories generated from the experts' responses

Frequency of citation	Referred by experts	Categories	Codes
14,05%	100%	psychological state	emotion affectivity state of mind anxiety pleasure tranquillity stress liveliness feelings mind cognition harmony balance well-being
12,97%	92,31%	aesthetics	beauty aesthetics fashion trends taste style design colour creativity senses
11,89%	84,62%	social aspects	social norms belonging appropriateness symbolic expressive language communication create-territory image appearance status appropriateness respect admiration power success achievement
11,35%	80,77%	self-image / self-confidence	self-esteem self-assurance being-at-ease safety confidence protection garment condition garment type boldness image appearance appropriateness elegance age
11,35%	80,77%	material properties	material fabric composition quality lightness fluidity reliability security protection know the origin (sustainable issues) performance functional psychophysiological practical physical physiological touch texture softness cosiness sensory stimulus
8,11%	57,69%	garment construction and	fit size construction ergonomics movement freedom garment-as-a-body-extension

		fit	
7,57%	53,85%	body (de) emphasis	tight loose length sensuality flattering cleavage transparency conceal-reveal
5,95%	42,31%	environment	environment space occasion situation context
5,59%	42,31%	personality	sincerity dress-for-yourself identity individual individuality personality irreverence stand out differentiation genuineness
3,78%	26,92%	culture	culture education
3,24%	23,08%	lifestyle	lifestyle consumer-profile activities price social-economics brands
2,16%	15,38%	values / beliefs	values principles beliefs religion consciousness
1,62%	11,54%	past experiences	experience memory

4. Conclusion

The model proposed by Branson and Sweeney is crucial to understanding the importance of the psychological aspect of comfort, however, because the authors came to this result by the literary revision they intended that those attributes must be discussed and refined. Therefore, the present work aims to be a step in the search for the debate and the development of the concepts and attributes of the psychological dimension of comfort. Although we recognize the contributions of the work of Branson and Sweeney, and we agree with the use of the term “social-psychological” dimension, in the meantime, we will maintain the term “psychological” dimension, as it is the most used in the literature. As the next step of this work is the validation of the attributes by the panel of experts, we will attempt to define the best terminology, since there is also the possibility to include the aesthetic aspects in the nomenclature.

After the analytic process, it was observed that the categories outlined from the opinions of the group of experts, had a great correspondence with what is presented in the literature. The next step is to send the list of categories, that is the result of this paper, to the experts for further examination, discussion and improvements. We believe that the higher the level of consensus about the concept and the assessment parameters, the closer we will be to appropriately assess this dimension of comfort. The need for a deeper understanding of psychological comfort presents itself as a still vast field of research.

Although there are theories that point to the importance of a theoretical deepening of this component of comfort, there are gaps to be filled, especially regarding methods of subjective evaluation of this dimension of comfort of clothing. The high frequency of specialists mentioning complex aspects that are very difficult to evaluate like: psychological state, social aspects and self-image/self-confidence, signalize that is imperative to seek “creative” ways of assessing this aspect of comfort. A possible approach is to combine methods already in use, like the sensory analysis techniques, with the methods utilized by psychology, design and emotion, or user-experience, especially the ones that follow “real-life” protocols, and consider the many different responses that the user receives from the environment, mainly from the social standpoint.

Acknowledgments

This work is supported by FEDER funds through the Competitiveness Operational Programme - COMPETE and by national funds through FCT – Foundation for Science and Technology within the scope of the project POCI-01-0145-FEDER-007136.

The first author would also like to gratefully acknowledge the support from the Araucaria Foundation of Paraná State and the Federal University of Technology, specially, the Fashion Design Department and the Office of Research and Graduate Studies.



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