User-centred design for non-human animals: 
A preliminary overview of relevant themes and specific conceptual categories

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I. INTRODUCTION

Given the wide and diversified range of design interfaces encompassed by product design, visual design and service design, whose direct or indirect users are non-human animals, this paper presents some preliminary results of ongoing doctoral research which seeks to understand the state of the art of non-human animal, user-centred design, as well as to extend the current theoretical understanding of this class of users within the greater field of design.

The concept of ‘design’ [1] [2] places the user at the centre of any project. This aspect is currently being further emphasised by the more recent expression of “user-centred design” [3]. It is worth noting, however, that such traditional definitions of “design” [1] [2] and, by extension, also of “ergonomics” [4] [5] tend to restrict the notion of “user” to human animals. Considering the variety of design interfaces aimed at non-human animals, there is a need to extend this notion beyond humans. This could be achieved by investigating concrete manifestations of design for this class of users, which is seldom acknowledged in the related literature.

To this end, a broad taxonomy has been formulated, in which various examples of artifacts have been identified, organized and classified according to conceptual categories, such as their purpose, context of use, and type of users. This taxonomy provides an overview of this as yet unexplored universe of the professional practice of design. As a result of this initial analysis and categorisation process, fifteen notable topics emerged, which warrant further investigation to better understand and articulate the concept of non-human-centred design and to support the development of the field. Topics of interest include, for example, functional, ergonomic, semiotic, ethical, aesthetic, historical and methodological aspects, as well as their implications for users who are unable to express

Fig. 1. Example of design interface between a non-human animal (sloth), a human, and technology for medical examination purposes.

II. METHOD OF RESEARCH

The exploratory mapping study that has resulted in the above-mentioned taxonomy employed multiple data-collection techniques and sources, such as internet searches for examples of design interfaces geared towards non-human animals; systematic and non-systematic literature reviews; semi-structured in-depth interviews carried out with experts in animal behavior, therapy and handling; field trips to animal-related events, such as social gatherings, demos and expos; as well as direct observations of practical situations in veterinary clinics, stores, and daily life.
III. SOME PRELIMINARY RESULTS

As previously mentioned, the research highlights fifteen special topics specific to the realm of design aimed at non-human animals. These topics entailed the same number of corresponding essays. Among these are, for example: the need for developing methodological strategies tools and techniques aimed at listening to non-human users in the context of a design project; the need for addressing the ethical implications of designing for non-human animal users;

These topics will be elaborated upon in depth through a series of dedicated essays, based on the detailed analysis of the extensive data collected so far.

Fig. 2. Partial reproduction of the taxonomy (in Portuguese) in which various examples of artifacts have been identified, organized and classified according to conceptual categories, such as their purpose, context of use, and type of users.

Fig. 3. Partial reproduction of an even smaller part of the taxonomy that’s been elaborated by the researcher, exemplifying some of the identified purposes, in terms of design, and classes of users affected by these design interfaces.

IV. PRELIMINARY CONCLUSIONS

This ongoing doctoral dissertation carried out in Brazil and England, which is already in its final stages, attempts to provide a more comprehensive, sensitive and updated overview of the discipline of design.

It is also hoped that this study may offer a contribution to the well-being of this large and diverse class of users which design has yet to adequately acknowledge in the area of design education and professional practices.

In order, then, to provide such a contribution, it seems timely to establish an initial, more all-encompassing overview of the new, virtually unexplored territory of product design, visual design and service design for non-human animals. It therefore seemed advisable to initially sort and map the multiple modalities of such artifacts and services, as well as to identify some key issues, both conceptual and methodological, which are present in the new discipline of user-centred design for non-human users.

REFERENCES