Designing in the Wild: Towards Specialized Clothing Designs

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Introduction & Aim: Designing clothing is often designer-centric, especially when creating fashion wear, ready-to-wear clothing and accessories. Fashion designers are expected to peruse the market, speculate on new styles and forecast trends with a vision to realizing designs that will sell. Designs for clothing often seem to come from 'within' the designer and are a reflection of what has been previously created and what might be considered desirable in the future. Alternatively, with the growing needs for more specialized designs due to aging demographics, specialized work situations and people with special needs it is almost impossible to predict the trends and market without understanding authentic human behavior. In this way, the end-users' needs, wants, desires and expectations are emphasized, incorporated and demonstrated into designs that are more functional and meaningful. To achieve this, however, a conventional design process is not effective towards gaining depth and understanding into users' real use, use-scenarios, lifestyles and accompanying behaviors. Consequently, this paper proposes a design approach to creating more specialized clothing that comes more directly from the users' perspective, i.e., where users are specifically involved in the design process, which is referred to here as 'designing in the wild'. The aim of this paper is to illustrate the concept of designing in the wild through several designs that have been completed in various 'extreme' settings (i.e., hospital operating room, oil field and refineries, outdoor winter conditions) involving different needs, wants, expectations and desires (e.g., thermal warmth, protection).

Designing in the Wild: Designing in the wild plays on *Research 'in the Wild' and the Reshaping of New Social Identities* by Callon and Rabeharisoa (2003). Like "research in the wild" designing in the wild offers various methods in order to get at and understand the complexity of human experience including the nuanced relationships among person-clothing-environment. Typically speaking, designing in the wild is used when extreme design problems exist, which are often characterized as "wicked problems" (Buchanan, 1992). Wicked problems are inherently challenging because of the slippery nature of the design problem at hand. For example, designing for ready-to-wear clothing involves fashion and trend forecasting, which is not particularly wild; yet, designing for safety these can be considered wild because the details of the design context and people are not straightforward or generalizable. To further clarify, Orlando (1979) outlines the functional apparel design process as having three contributing factors that aid in establish design criteria: constructed environment, natural environment and behavioral environment. The first two refer to the work/leisure context that includes weather conditions, temperature etc., and the behavioral environment focuses on human variables such as wear pattern, working style, and preference. This is similar to what is proposed here, however, for designing in the wild the complexities of user-scenario, user activities, and user needs, wants, desires and expectations are investigated and identified. Under many circumstances these factors are interrelated and also case-specific.

Design Examples: Three apparel design examples illustrate designing in the wild: 1) hospital operating room (OR) warm-up jackets; 2) oil field and refinery safety wear; and 3) outdoor winter wear for quadriplegic and paraplegic people. In the case of each of these three design problems, phase one included understanding the extreme natures of each environment. This was accomplished through in-depth observations, focus groups and interviews e.g., for the OR warm-up jacket several days were spent in the OR observing, interviewing and doing two focus group studies with nurses and anesthesiologists. During this phase the users, other stakeholders, use-scenario, tasks and duties, relationship between person-clothing were identified and documented. For each project phase two included doing artifact analysis (what people currently use) and precedent research. This focus on the object of study is similar to looking at trends but involves a more in-depth analysis of the minute details of designs that are near and far apparel that currently exists. Artifact analysis is done with the stakeholders e.g., for oil safety wear the workers, their safety supervisors and manufacturers of safety apparel were consulted. Phase three involved creating design specifications and in some cases an interaction matrix that again was checked with stakeholders e.g., for winter wear for people who lack mobility the users, family members and caregivers were consulted to ensure the design direction was clear. Phase four involved developing a half-scale mock-up to show to stakeholders. A half-scale representation is specifically used in order to emphasize the design as a work in progress rather than a finished product. In the case of oil safety wear, several focus groups using the mock-up were completed with industry representatives and safety apparel manufacturers. Phase five consists of producing a full-scale prototype with appropriate fabrics ideally by or with a manufacturer that can be used in wear trials with actual users. Ideally wear trials would be completed on multiple occasions such as different weather conditions with different participants before creating a final prototype.

Discussion & Conclusion: It is clear from our description that designing in the wild does not involve a straightforward design process where research is placed somewhere near the beginning of the process. On the contrary, designing in the wild assumes that the person-clothing-environment interface is highly complex, which requires extensive research (preferably from different perspectives) and subsequently user involvement at *all* phases during designing. This involves an iterative, multi-staged and multi-method approach. While this process is more time consuming than a more static and less layered design process, the rewards are significant. The rewards are more viable, innovative and sustainable clothing designs.

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