Mapping the Clothing Taskscape to Assess User's Needs
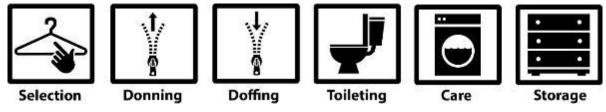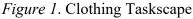
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Introduction & Aim: The assessment of user's needs within the clothing context is central to developing design criteria that acknowledges specialized needs, especially when creating functional apparel. With a growing need for specialized apparel due to aging demographics and people with disabilities or those employed in in specific work environments, as well as other niche markets, current design practice may be improved by considering the clothing taskscape as a means to examining people's clothing needs more holistically. The clothing taskscape is about determining garment attributes along with how people interact with their clothing.

Taskscape: Tim Ingold (1993) defined taskscape as: "any practical operation carried out by a skilled agent in an environment as part of his or her normal business of life" that involves "an array of inter-related activities" where "every task takes its meaning from its position within an ensemble of tasks, performed in series or in parallel" (Ingold, 1993, 64). Other researchers use the concept of taskscape, for example, to explore passenger actions required to successfully catch a ferry (Vannini, 2011), to evaluate the components that contribute toward a therapeutic camp experience for troubled youth (Dunkley, 2009) and to assess how people with low vision navigate while shopping in a mall environment (Tullio-Pow, Yu & Strickfaden, 2013).

Clothing Taskscape: The clothing taskscape was established through in-depth analysis of person-garment interfaces and our combined practice of creating functional apparel for those with diverse needs. It is comprised of six phases shown in Figure 1.

Figure 1. Clothing Taskscape

Selection involves personal choices regarding what to wear, sometimes influenced by the garment's functional, expressive, or aesthetic (FEA) features (Lamb & Kallal, 1992). Donning and doffing refer to the act of dressing and undressing. Toileting involves similar actions to donning and doffing yet is distinct as it requires partial removal of clothing, sometimes in urgency, followed by re-dressing. Clothing care includes laundering, ironing, and a consideration of soiling propensity. Storage refers to how garments are kept between wear, either folded in drawers or hung in a closet.

Defining User Needs: A review of literature compared and contrasted the range of methods applied to define user needs for a variety of functional apparel products to understand to what extent the clothing taskscape was considered. Specialized apparel for users included, for example, premature infants (Bergen et al., 1996), pilots (Tan et al., 1998), sailors (Bye & Hakala, 2005), adolescent girls with disabilities (Stokes & Black, 2012), and bicycle patrol officers

(Black & Cloud, 2008). All of these studies referenced Orlando Yep's (1979) or Orlando DeJonge's (1984) design process and its systematic method of inquiry while some categorized clothing attributes according to Lamb and Kallal's (1992) FEA model. Combined approaches to research user needs in these studies included: literature reviews, market analyses, interviews with various stakeholder groups, prototype wear tests, direct, indirect and participant observation, photography, questionnaires with open ended and/or forced response Likert scale questions, and focus group discussions. Studies that centered only on specific phases of systematic inquiry (i.e., exploring the design situation and perceiving the design problem) offered a wealth of information for designers; however, all elements in the clothing taskscape were not considered in any of the studies reviewed.

Discussion & Conclusion: The clothing taskscape offers a more holistic way to evaluate the person-garment interface within the use environment. While issues such as comfort, donning and doffing are unanimously included in apparel research studies, matters related to toileting, care and storage are not. Yet abilities related to these themes are critical to garment use and serviceability. Through consideration of the clothing taskscape detailed information about the person-clothing interface can be discovered. More critically, simply evaluating isolated phases of clothing use may not uncover important insights that become evident when all aspects are considered together (Kirsh, 1996). As such, the composition of activities that make up people's daily, weekly and yearly lives in relation to their clothing illustrates detailed and holistic information within a use scenario that varies depending on time and place.

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