Values and Stances in Interaction Design for Children with Disabilities

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Abstract

Designing interactive technologies for and with children with disabilities is highly complex because of the multi-faceted interplay of needs, requirements, stakeholders and goals. While most research in this area has tackled the methodological challenges of designing for this group, this workshop aims to draw attention to the tacit assumptions that fundamentally shape the outcomes, which have remained largely unexplored. The complexity of the context and the vulnerability of the target group means that researchers and designers quickly assume agency for children and unavoidably impose their own values and philosophical views about disability on the design. Starting with the definition of goals, the choice of design methods and the applied epistemology and theoretical underpinnings, fundamental decisions are driven by the values of researchers and their presumed understanding of the disabled experience. These tacit drivers, however, are hardly reflected upon or consciously available for debate to inform decisions. With this workshop we aim to fill this gap and start highlighting the significance of those assumptions for the design of interactive technologies with children with disabilities.

This workshop will he held jointly with the workshop on *"Including Children with Disabilities in the Design Process"*.

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disabilities, children, design

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H.5.m [Information interfaces and presentation (e.g., HCI)]: Miscellaneous.

Introduction
When we design interactive technology for children with disabilities, many underlying assumptions shape the process and the outcomes. Designers and researchers bring their own values and philosophical views to the project, and these views impact on fundamental decisions throughout the project. In particular, designers' values and views play a key role in in defining the initial project aims and the methodological approach, but they also influence its epistemology and underpinning theory. Despite the significant impact, these values and stances, however, are rarely stated explicitly, consciously considered or available for debate. When designing interactive technologies for children we implicitly take a stance on the subject of disability: we might focus on eliminating barriers, addressing functional limitations or supporting wellbeing, self-determination and individual experiences—each reflecting a different understanding of disability in society. Those stances are implicitly engrained in the project's objectives: technology is designed to support or assist users, to make existing tasks easier to perform or allow them to perform new ones, to teach them new skills, or (more controversially) to provide a cure. Consequently, they are also engrained in the chosen approach: the design is driven by medical requirements, a user-centred methodology or conducted in a participatory spirit. And finally, the applied epistemology and theoretical underpinning reflects values and stances: knowledge and theory is constructed from controlled experiments or is of a more exploratory kind and induced from situated experiences.

Our aim in this workshop is to bring together researchers who have worked, with children with disabilities and investigate how values and stances impact on their work. We want to invite them to critically reflect on their work, unearthing the tacit and unconscious drivers that fundamentally shape their practice. In preparation we ask participants to submit an overall description of their work, a particular project or a more general line of research, including a brief reflective statements from three given perspectives which are designed to support participants in probing for the implied, underlying philosophy of disability and values embedded in their work. During the workshop we will discuss the ways in which these embedded features have impacted on the projects and will work on defining practices that will allow these implicit assumptions to be made available for consideration and for decision making, during both the initial planning stages as well as the ongoing design work. As a specific outcome of the workshop we will lay the foundations for a paper to be authored collaboratively and published in a high-profile venue such as the ACM Interactions with the aim of highlighting these salient forces as fundamental qualities of interaction design with children with disabilities.

Background, Related Work & Motivation
The field of Disability Studies concerns itself with investigating the lived experiences of people with impairments in our society and focuses on conceptualising our understanding of disability, critically reflecting on social structures and rhetoric, and informing policy making. As a result, different paradigms have emerged which describe the concepts of impairment and disability in different ways. Historically the medical model of

disability has dominated policy making and research in the field since the era of the Enlightenment. The medical model of disability focuses on the individual condition and the resulting functional limitations. Interventions are aimed at the individual to alleviate the burden of those limitations. As a reaction to this medicalisation of disability and in the light of the human-rights and emancipatory movement, the social model of disability was developed. It makes a crucial distinction between the physical or cognitive impairment and a disability [12]. In this view, being impaired is an individual condition, but disability is a social construct imposed on people with impairments which denies them full participation in society. Consequently, the social model argues, interventions should be aimed to change the environment rather than the individual. Both models, however, are being criticised for the implied goal of normalcy and for disregarding the individual experiences of people with disability [13]. Both strive to intervene in one way or another to "enable" the disabled, and both models generalise away from the lived experience of people with disabilities.

As a subsequent reaction to this criticism, a post-modern paradigm has emerged [3]. Stemming from post-structuralist and post-modern philosophical thinking, this model rejects the strive for normalcy and generalisation and focuses on the individual experiences of people with disabilities within their social and historical context. While far from a unified framework, philosophies in the post-modern tradition commonly reject, as the name suggests, the fundamental assumptions of modernism, in particular the notions of absolute truth, reality, perception and society as being comprised solely of the sum of individuals. Thus, studying disabled experiences from their historical and situated complexity

results in a concept of disability that is embodied, lived in unique ways, and defined through interaction, language and culture. Many theorists in the field have highlighted the parallels to related studies of oppression such as feminism or queer studies. While a post-modern view on disability now dominates in the field of Disability Studies, many questions remain open. For example, regarding the relationship between impairment and disability, and whether the strict divide introduced by the social model is appropriate.

Much of the work in the realm of technology and disability has been conducted within the mindset of the medical model of disability. As Mankoff et al state in their critical inquiry into Assistive Technology through a Disability Studies lens, the medical model is "pragmatically useful" for designers of assistive technologies as it provides clear and concise requirements for technology to address functional limitations [11]. "Assistive Technology" itself as the umbrella term for the related scientific field is testimony to this dominance. However, outside a disability context the field of Human-Computer Interaction has started to take inspiration from post-modern thinking. In response to the increasing difficulty to describe or explain the diverse uses of technology in today's society through ergonomics or cognitive modelling, a third paradigm has emerged that focuses on situated knowledge, embodied experiences and values [8]. This paradigm shift in HCI builds on very similar philosophies as the post-modern model of disability. Phenomenology, feminism, constructivism, pragmatism and other lines of thought have significantly changed how we think about and create interactive technology today (e.g., [4, 7]). With this paradigm shift also comes a recognition of the importance of values in interaction design [5, 14]. This not only includes designing for user values, but specifically calls

attention to the fact that designers themselves bring values to the process that might significantly alter the outcomes [15]. It is widely accepted that giving people a greater role in the creation process of the technology they live with is a logical consequence of this paradigm shift. Such participation comes with new risks and challenges and the field of Participatory Design continues to evolve to span across ever increasing application areas.

Against this background, it becomes apparent why there is an urgent need to critically reflect on the prepositions and assumptions we base our work with children with disabilities on. As a typically marginalised group, researchers and designers of interactive technologies all too easily assume agency for them and consequently the tacit philosophical stances and values of researchers and designers have profound, sometimes unintended impacts on the outcomes. While involving children with disabilities in design processes is widely seen as the only possible solution, designing such participation is challenging and poses further risks to impose ones own understandings of their disabled experiences. The situation is complicated further by the fact that children with disabilities cannot be seen as independent actors, requiring the involvement of their immediate environment such as parents, teachers or care-givers. In such collaborations, tacit aspects such as power-relationships, values and stances play a key role in decision making (see [2, 10]). In the context of children with disabilities, most attention has been directed towards addressing the methodological challenges (e.g., [6, 1, 9]), however, the impact of tacit assumptions, which are a direct consequence of our philosophical stances and values, remain largely unexplored. With this workshop we would like to begin to bridge this gap by systematically investigating how and where these assumptions shape processes, and how they can be made more salient during active decision making.

Workshop activities

We will invite researchers who work with children with disabilities to create interactive technologies to submit papers (2 to 4 pages). <u>Note:</u> since this workshop is held jointly with the workshop on *"Including Children with Disabilities in the Design Process"*, only **one** submission is required for both workshops. Each submission should include the following:

- A description of the context of their work, including overall goals, target groups etc.

- A description of one or more design techniques that they have used or plan to use.

- Brief reflective statements on their work from the following three perspectives:

  Goals & Objectives What has determined the definition of outcomes? Who was making those decisions and what were the main drivers? Have those goals changed over the course of the work and why?

  Methods & Participation Which methodology was applied, and on what grounds? At what level were children with disabilities or other stakeholders involved, and what was the quality of this involvement? What or who determined the relationship between researchers, designers, children and stakeholders?

  Evaluation & Knowledge How were outcomes evaluated and analysed? How were contributions to knowledge identified and constructed?

- Participants expectations of the workshop and the specific topics they would like to discuss.

On the basis of these submissions, the organising committee will select up to 10 to be invited to the workshop. We strive to have a balanced selection in terms of contexts, approaches and research cultures in order to cover a wide spectrum of the work available in this area.

During the workshop we will analyse the collective work from the three perspectives stated above. For each perspective, we will first be collecting **what** has impacted on decisions in the different works and **how**. We will identify **when** in the design process these influences were most critical, and to **what degree** they have been consciously available to inform decisions at the time. We expect that throughout this exercise participants will be able to find parallels between their work and that of others, and discover additional aspects that they were not consciously aware of. As a final step, we aim to link the major themes that emerged form this exercise to their underlying drivers in terms of values and philosophical standpoints.

In the last session of the day we will summarise our findings, distilling key themes and insights from the reflective exercises. We will also reflect on the workshop itself, discussing the extent to which the activities were effective in unearthing the underlying assumptions in design practices and their impact. We will discuss how similar reflective practices can be incorporated into design processes in order to make tacit assumptions available for debate. And we will lay the foundations for a collaboratively authored position paper and discuss what every participant has gained personally from the workshop.

Outcomes & Beneficiaries

We believe that this workshop can make a significant contribution in advancing the theory and practice of designing interactive technologies for children with disabilities. By drawing attention to what subconsciously shapes our processes, methods and theories in this field, we open up overdue discussions about research agendas and start to underpin advances in methodology, which have been the focus of most attention to date, with new foundations.

Consequently, we think it is important to have a broad discussion about these mechanisms and thus aim to publish a paper in a high profile venue such as the ACM Interactions as a result of this workshop. Not least, however, we anticipate that the participants of this workshop will benefit directly—views and values operate, in the first instance, on an individual level: each person who is part of a project team will have their own unique set of perspectives and the sum total of these perspectives often creates tensions and pulls the project in different directions. Becoming aware of these may support researchers in resolving those tensions in more transparent ways and thus enabling them to plan and manage their projects more effectively.

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