

An Activist Lens for Sustainability: From Changing Individuals to Changing the Environment

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Abstract. Design for sustainability is of much interest in Persuasive Technology (PT) and interventions are often targeted to change individual's behaviour. These interventions aim to change lifestyles to be more ecologically sustainable, however the social and economic circumstances individuals live in often counteract these intentions. Activism has been proposed as a way to address such social circumstances. The contribution of this paper is to further develop an activist lens to present strategies for interventions that address policy makers as well as provide insight into how individuals can engage in activism supported by technology to advance change. Our activist lens points to active data generation and perceived agency by individuals and hybrid forms of interventions. We also address the limitations of technology in such approaches. An activist lens on sustainability and PT might provide a useful new entry point for designing change interventions from the individual to the collective.

1 Introduction

In recent years sustainability has become a prominent research topic in Persuasive Technology (PT) and Human Computer Interaction (HCI). Early research in PT was mostly concerned with the use of interactive systems to influence individuals towards more sustainable behaviour [9]. These systems commonly used technology to infer and present feedback about an environmentally relevant behaviour such as sustainable mobility and energy consumption and aimed to make the user aware of the environmental impact of their actions. The raised awareness should ideally lead to more pro-environmental behaviour as a result. However, the sole focus on changing individual behaviour is controversial [2] and is only one approach in the much larger space of possibilities for change towards more sustainability. An equally important aspect is influencing the circumstances, and the decision makers who control them. For example, Mankoff et al. [8] point out that the individual level is only one area to target for sustainability through design, and is complemented by efforts directed at the societal level. Woodruff et al. [12] also conclude that design efforts could be directed at changing circumstances which often hinder or prohibit sustainable practices on an individual level. These positions provide us with a starting point to more deeply engage with an activism lens. This shift is important because going beyond individual

behaviour change would help to shift perspectives from blaming individual shortcomings without concern for context, towards realizing and acknowledging the role of the larger context and the societal circumstances play in shaping the individual's practice.

These circumstances can promote, hinder or completely disable sustainable practices. Whereas individual persuasion emphasizes what Latour terms the *intrasomatic* aspects such as raising awareness, in this paper we focus on an activist approach aimed at influencing the *extrasomatic* reality or circumstances [7]. As our consciousness is determined by our society and social being, it is the extrasomatic domain which in turn will have effects on the collective consciousness and affect practices on an individual level. Even the best designed and most well intended PT application to foster sustainable behaviour cannot persuade users to engage in the desired behaviours if the circumstances are not allowing or supporting them. At this point it is better to advocate change of the extrasomatic social and political circumstances and support individuals to engage with activism.

2 An Activist Lens

Activism is defined as taking actions to promote social, political, economical and environmental change. Generally people need to be discontented about certain circumstances to become agents of change. In this paper we use a definition of an activist as not only a person who engages in short term physical protest, but one who takes any form of action, ranging from digital to physical acts with the aim to not only to change individual consumer behaviour, but also to change circumstances at whatever level of scale is most relevant. PT can support activists with information and communication technologies (ICTs) on an individual level, but also support communication and cooperation among individuals for collective action.

Within HCI some work has already addressed pro-environmental citizen sensing as one particular strand of the much larger repertoire of activism. Aoki et al. [1] explored data from air quality sensors on public street sweepers to reflect on the role this data can have in pro-environmental discourses with stakeholders. Kuznetsov et al. [5] researched participatory citizen sensing and how participants engage with space, the placement of sensors and the use of the collected data for broadcasting, sharing and activism. In this paper, instead of focusing on specific strands of activism like citizen sensing, we provide an analysis of activism and ICTs, resulting in a repertoire of activism, and in turn identify strategies for interventions. Thus we engage with literature from fields of sociology, communication and political science that address these issues. In the following section, we provide an overview and critical understanding of activism and in turn reflect on the potential strategies for PT in this domain.

2.1 A Repertoire of Activism

There already exists some work that describes different dimensions for categorization that can be useful for our purposes. Van Laer & Van Elst [11] describe different '*action repertoires*' and use the dimensions of 'high vs. low thresholds' for

participation and ‘ICT-supported vs. ICT-based’ actions. *Consumer behaviour*, *donating money* and *demonstrations* are described as repertoires with a low threshold and supported by ICTs. *Occupations* or *transnational demonstrations* are also supported by ICTs, but have a high threshold for participation. There are as well repertoires solely based within ICTs, such as *online petitions* with a low participation threshold and more based on the individual, whereas *culture jamming*¹, *email-bombs*, *protest websites* or *hacktivism*² have higher thresholds to participate [11]. We also identify three other instances of action repertoires not explicitly mentioned by Van Elst and Van Laer, which can also be important for HCI and PT, namely citizen sensing, grassroots movements and open data initiatives.

With new advances in low-cost sensor technology *citizen sensing* is a design area where HCI can engage, as seen in the previous discussion. Citizen sensing is the act of collectively sensing environmental data to share with others. Such collections can be seen as persuasive ‘social currencies’ or techno-political tools, data that can be used to share and negotiate collectively with policy makers [1, 5]. The bottom-up approach of citizen sensing can change power relations in empowering citizens to act as agents of change. Volunteer-driven, non-hierarchical organizational models characterize bottom-up forms of activism such as *grassroots movements*. These are often lacking funding, spontaneous by nature and demand ICTs and other methods of support [6]. Generally grassroots movements are supported by ICTs and have a low threshold in participation if online [10] and a higher threshold when the movement crosses over into the offline world. Change does not necessarily always come from the bottom. Data can also be provided by governments through *open data initiatives* to raise new potential for participation and activism starting with a top-down approach. The democratization of data gave rise to many initiatives [4] that provide data to the public for free. These initiatives can potentially enable citizens to participate in decision-making because they can process and present data in creative forms, and allow decision makers to understand this data to anticipate next steps.

2.2 ICTs for Increased Activism?

ICTs are not necessarily a panacea for social action and here we take a more critically reflective stance on the role of ICTs for a repertoire of activisms. In particular we identify two general pitfalls that lead to a more nuanced understanding of the potential of activist interventions. The first issue is about if, and to what extent, technology promotes social change: “*Evidence that ICT use is producing significant social change does not mean that the changes identified are inherent to the technology. Used in different contexts, technologies yield different effects.*” [3, p. 217]”. Without question, forms of activism have changed along with the technological tools and actions now can be more global, and be mobilized more quickly. But the data on this is open to dispute, with some claiming that ICTs increase participation, while others

¹ A form of resistance to disrupt big mainstream institutions e.g. by subverting corporate advertising campaigns.

² The use or attack of ICT infrastructure in pursuit of political protest that may be legal or illegal.

finding no effects [3]. What the literature suggests though is that an ICT intervention alone cannot trigger activism, as it is mainly people who drive transformations. If people just engage in the online world, a weak spot of ICT-based activism can be that the engagement is just online, referred to as slacktivism or clicktivism, i.e., activism that makes it very easy for users to participate online and to declare one's opinion but not engage in the activist movement offline.

The second issue concerns the *digital divide*, with those on the wrong side of the divide not able to participate in activism that is supported by, or based in, ICTs. A gap between ICT users can be observed globally, with more ICT users in industrialized countries and fewer in less industrialized countries. The digital divide also applies within nations as the socially underprivileged tend to have poorer access to, and lower skills to engage with ICTs and are therefore more likely to be excluded from participation and activism.

3 To Design with an Activist Lens

We have engaged with literature from the fields of sociology, communication and political science to gain an understanding of a repertoire of activism and the potentials of ICTs around activism. For PT, this has several implications. At points here, we will use cycling as one pro-environmental practice to illustrate some of the following as intervention strategies.

From Individual to Collective: While individual PT approaches can bring about individual change, it can also be useful to enable individuals to instigate and manage collective action and grassroots movements. This would transcend the closed feedback loop of a behaviour change intervention and empower users to transform themselves from being someone to be changed by a system to be active agents of both local and systemic change. For social movements PT designers can consider both how to support mobilization, and also if opportunity structures exist where ICTs can foster collective activism. A cycling app could not only target to engage people in cycling activities but also remind them about protest bike rides such as critical mass³ or connect people with similar interests for making changes.

Active Data Generation: In addition to citizen sensing and personal feedback technologies there is a broad range of further opportunities for activism. It is also possible to engage people to actively collect data for decision makers and other citizens, where active rather than passive collection [1, 5] can also more likely promote opportunities for individual awareness and reflection, e.g. cyclists augmenting a map by pinning dangerous spots for local government intervention and re-construction of infrastructure. Active data generation can act as a collective filter to add a rich qualitative layer of information for stakeholders and highlight particularly relevant data points by the crowd. If data is generated actively, people can decide on their own how they want to shape information for decision makers, whereas with automatic sensing the data is evaluated based on pre-defined filters.

³ Monthly protest bike event held in 300 cities around the world that aims to communicate problems to city council and/or reclaim the streets.

Hybrid Forms: There is also potential to combine these strategies. Even traditional approaches of behaviour change and PT can be integrated with activist repertoires to create new *hybrid forms* of ICT interventions. From a design perspective the intra- and extrasomatic can feed and inform each other or be engaged with in parallel. For example, traditional behaviour change interventions with personal benefits can be integrated with a repertoire of activist approaches as noted previously. For example, cyclists could be using an app that both tracks their activity levels and captures air quality data and this data can contribute to open data platforms adding a layer of real time information. Or a green mobility app could include the aforementioned pinning capability and allow cyclists to generate data for improving the cycling infrastructure. Such behaviour change interventions can be re-conceptualized to empower users by providing an interaction with responsible stakeholders.

Perceived Agency: In order to generate active or passive data for decision makers, or to set up grassroots movements, the participants' belief in the *possibility of change* is crucial and ICT can play a role in promoting such visibility. Feedback about the activist intervention can be made visible to the contributors, to enable them to assess whether desired outcomes have been achieved. It is important for users not only to perceive being able to influence/control their own behaviour, but also to enable them to influence areas that they are concerned with. Thus ICTs can act as a mediator to expand influence from the personal to the societal and political sphere. Furthermore ICTs can help to discover opportunities for change within the personal sphere that can be directly controlled by a person, again increasing the perceived and real agency.

4 Conclusion

We have identified a repertoire of opportunities to engage with activism in addition to existing sustainability approaches. The aim is to trigger researchers and practitioners in PT and HCI to think beyond individual behaviour interventions as the main tool for change. We have opened the design space to embrace activism as an additional means to also address broader societal transformation. To this end we have proposed an expanded set of possibilities for change interventions using an activist lens. These promote consideration of: the individual to the collective; active data generation; hybrid forms of interventions; and perceived agency. Our intention is not to advocate activism through ICTs as a panacea but to add a more nuanced perspective for the PT and HCI community by taking an activism lens. While it is crucial to make it as easy as possible for people to engage in activism through ICTs, there exists the potential for slacktivism or clicktivism as previously noted. On the other hand the researchers and designers can take the opportunity and design interventions that can support mechanisms not only to advocate individual behaviour change, but to also change local and social circumstances or both through hybrid forms, depending on what is within the personal or collective sphere of influence or, even better, control. We hope that this contribution inspires PT and HCI researchers to embrace the activist lens when addressing change towards sustainability.

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