

# HCI as social policy: perspectives on digital rights in ethical design

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## ABSTRACT

By mediating activity, technology can empower or limit people's lives. This raises a number of ethical challenges for technology designers since their work directly touches on what people consider their 'rights' and their needs for a good life. In this article, we summarise a number of philosophical perspectives that stand to inform our understanding of design for digital rights. These foreground discussion of the Digital Rights in Australia Report, a study of Australians' views (N=1603) on a number of critical rights including privacy, free speech, workplace technologies and government surveillance. The data is analysed from a rights perspective, considering and moving beyond classic negative and positive rights accounts. We conclude with a discussion of how such studies could inform HCI research and practice.

## CCS CONCEPTS

• **Social and professional topics** → **Computing / technology policy**; *Privacy policies*; *Censorship*; *Surveillance*; **User characteristics**

## KEYWORDS

Digital Rights, ethical design, privacy, surveillance, ethics, philosophy<sup>1</sup>

## 1 INTRODUCTION

Scarcely a day passes without a news story highlighting an emerging cultural transformation or new ethical dilemma triggered by new technologies. As technologies increasingly mediate the ways we work, relate to others, learn, and participate in society, an interrogation of the values technologies deliberately or inadvertently promote becomes inescapable.

Technologies are generally intentional in that they are purposefully designed to do something or to be used in a certain way, and the decisions about their intentions are made by teams of designers with specific sets of values, and assumptions guiding the tradeoffs they have to make. These decisions then shape society through technology use.

The power of computing technologies to shape social life has been acknowledged at least since Weizenbaum's "Computer Power and Human Reason" was released in 1976 [45]. From the mid-nineties, pioneering work in Value Sensitive Design [20] has developed methods to systematically expose the values embedded in design. More recently there is a growing awareness of how technology-related values have moral implications that affect what individuals and societies consider to be "natural rights" inherent to being human.

The concept of natural rights has a long and complex history, shaped by Enlightenment ideals, politics, law, philosophy and ethics. Many of the ideas we hold sacred

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<sup>1</sup>It is a datatype.

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about individual rights, challenged the contemporary establishment in their time, and lead to new models for society amidst the scientific and industrial revolutions of the 18<sup>th</sup> and 19<sup>th</sup> Centuries. Many of the prominent philosophers of the time, from Jeremy Bentham, James and John Stuart Mill (fathers of classical liberalism) to Karl Marx, were responding to technological changes reshaping their time. Each combined psychology (e.g. James Mill's "*Analysis of the Phenomena of the Human Mind*") with models of society (e.g. "*Elements of Political Economy*") and used these to propose improvements to how society should be run (e.g. *Essays on Government, Jurisprudence, Liberty of the Press, Education, and Prisons and Prison Discipline*).

Parallels with the challenges we face as part of the digital revolution today mean that the work of these thinkers, along with the fundamental questions they tackled, are being rediscovered and built upon as the advancement of Artificial Intelligence forces us to consider what we believe about humanity in the age of machines.

On the wave of this re-exploration of philosophical questions of fundamental import, a number of initiatives have taken form to explore how technologists, and the organizations they serve, can create more 'ethical' systems. For example, the IEEE's Global Initiative on the Ethics of Autonomous and Intelligent Systems has created a draft set of principles [13] that include:

- Human Rights (protecting them),
- Wellbeing (prioritizing it by employing established metrics)
- Accountability (of designers and operators)
- Transparency (of processes)
- Awareness of misuse (minimizing risks of technology misappropriation)

Other initiatives include the Partnership on AI (based in San Francisco), the Data & Society Research Institute (New York), the Data Justice Centre (Cardiff), the Leverhulme Centre for the Future of Intelligence (UK), among others. All these initiatives are attempting to address public concerns about the impact of technology on the future of work, privacy, human rights, mental health, politics and autonomy.

One thing previous philosophers lacked was a way to collect significant population data. Today, modern technologies themselves can be harnessed to help us understand people's experiences with, and perspectives on, the digital revolution and its ethical implications.

Enlightenment philosophers also lacked sophisticated psychological theory and the collected empirical evidence that we have today about human experience and how things like context, motivation and design impact that experience.

Despite limited means, the work of historical philosophers formed the basis of policy-making, public discourse, and new ways of thinking about a morally just society. Today it is technology companies that are making decisions that shape society and the moral landscape. Occasionally, when the outcomes of these decisions garner sufficient criticism, governments create regulations to limit what technologies or their makers can do. But of course, governments use technologies too, such as surveillance for security, policy or population health. Behind every one of these technologies are designers and developers who increasingly feel an obligation to take into account the needs of users, which necessarily includes their personal and collective rights. In this paper we provide an example of how sociological population data might inform this growing effort.

## 2 PREVIOUS WORK IN HCI

Ethics have been tied to notions of wellbeing since Aristotle defined "the good life" in his *Nicomachean Ethics* [6]. As Ian Barbour [4] wrote in his *Ethics in an Age of Technology*: "What kinds of technology do we really want? The answer will depend on our value priorities and our vision of the good life." These two issues—values and wellbeing—have been explored by a handful of HCI researchers over the past two decades.

Values were first explored by Batya Friedman [20] and colleagues as part of *Value Sensitive Design* (VSD) which has since become a centrepiece of Information and Computer Ethics [28]. Value sensitive design "seeks to provide theory and method to account for human values in a principled and systematic manner throughout the design process" (<https://vsdesign.org/>). It provides methods for acknowledging and examining the ways the values of designers, stakeholders, users and society come to shape a technology. Friedman and Kahn have explored how values like welfare, ownership, trust, autonomy, and accountability become implicated in technology design [21]. An excellent analysis of the value conflicts created by some technologies was provided by Knobel and Bowker [31]. The VSD area is different to critical theory (which deals with technology already being used) in that it focuses on the design of a socio-technical system with a particular focus on values as a design feature.

These values do not always have a clear direct connection to wellbeing. Yet wellbeing has been increasingly taken into account in HCI, through work in positive design [15] and positive computing [10] among others, and such research has contributed to our understanding of how technologies might support psychological wellbeing. More recently, Peters, Calvo & Ryan, [40] were the first to articulate a practice framework for wellbeing-supportive design in the form of the METUX model (Motivation, Engagement, and Thriving

in User Experience). They contend that to make design decisions that support, or at least do not hinder, psychological wellbeing, designers must consider basic psychological needs empirically and the authors provide methods with which to do so.

These two HCI research programs (on wellbeing and values), take first steps at combining psychology and ethics with system design in practical ways. In this paper, we'd like to highlight a third area that stands to contribute to these efforts, which incorporates the work of sociology, political science, law, and media researchers who explore cultural perceptions of the good life, rights, and how these should be supported.

In this article, we explore how these sociologically-derived cultural perceptions regarding digital rights could inform HCI research and practice. To do so we use the case study of the national *Digital Rights in Australia* Report to consider what insights, ideas and priorities can be derived from an analysis of users' expectations of technologies in their lives.

### 3 HCI AS POLICYMAKING

Philosophers have argued that there is a social contract amongst the citizens of a country to give away certain freedoms to a government in order for it to be able to maintain order, provide security and improve health.

Today, users also give away rights to technology companies in exchange for other forms of value. For example, users frequently give away their privacy in exchange for being able to connect with others free of charge.

But increasingly, public awareness of how platforms can be used to change their behaviours and emotions [9], and of how data collected by companies can be used to manipulate and limit their rights has led to greater attention on this exchange. The Cambridge Analytica scandal showed how personal data can be used to allow microtargeting of political advertising. Allegedly divisive political advertising by foreign countries has been aimed at breaking the sense of interrelatedness amongst US and UK citizens. Just as the goal of governments is often to bring citizens of a nation together, foreign powers may benefit from diluting or breaking those bonds. The Internet allows this to be done remotely. Again, it is often values and business imperatives that determine which controls companies apply to the use of user data.

In this context, it is important to have a better understanding of how citizens of a nation see their digital rights and their relationship with digital products managed by companies or the state. This was the goal of the *Digital Rights in Australia* report study described below.

## 4 HISTORICAL PERSPECTIVES ON RIGHTS: POSITIVE VS NEGATIVE RIGHTS

In order to facilitate an analysis of the Digital Rights report discussed herein (or, indeed, any similar population study) within an HCI context, it's helpful to consider the concepts of positive and negative rights, as a step towards devising a broader rights framework.

The concepts of freedom, liberty and autonomy are often associated with slightly different features in different bodies of literature, but for the sake of this article we will refer to autonomy as "a feeling of agency and acting in accordance with one's goals and values" as used in psychological literature and derived from philosophy by Ryan and Deci [42].

### 4.1 Freedom and Autonomy in User Experience

The way autonomy (or lack of it) is experienced within a digital context is nuanced, complex and a topic of increased interest in HCI (see[8]).

In order to illustrate, imagine you are browsing a social network. At each moment of the interaction you are offered options, such as, to read a post, or click on a link. No one forces you to do one or the other but you choose to follow a link to a video, and no one prevents you from watching it. Nothing slows your download, your bandwidth is excellent, and all content is equally served. No one is censoring the content. So, you seem, as an Internet user, to be completely autonomous and free.

Now imagine that the reason you clicked on the link is because you are addicted to a particular type of media (e.g. a video game, online gambling, social media, pornography, etc.) and you are desperate for a fix. Rather than being in control, you feel controlled. You are driven by an urge that leads you to watch one video after another against your better judgement, higher-level goals and values.

This story describes two ways in which personal autonomy can be impacted by technology. At one level, autonomy can be increased as technology provides greater access, and removes obstacles.

At another level however, true autonomy requires self-determination—the ability to act in accordance with one's goals and values. In this sense the environment can prevent you from doing what you believe is in your best interest by providing easy access to content that is carefully designed to capture your attention and engage with it indefinitely.

These two levels can be viewed as occurring within different 'spheres' of the user experience [40]. In the first case, the individual is autonomously using the "interface" (navigating and accessing with ease), while in the second, he is suffering from autonomy frustration at the life level (as he feels compelled to engage in ways he doesn't endorse). The case of addiction highlights how critical it

is to analyse concepts like autonomy at more than just the immediate level of use since problems are often only revealed from a wider life-wide perspective.

Government policy is frequently based on ideas about what forms of autonomy are more important. Isaiah Berlin a 20<sup>th</sup> century British philosopher explicitly defined two concepts of liberty: 1) Liberty as the mere *absence* of obstacles and constraints from others and 2) liberty as defined by the *presence* of something. To Berlin “negative liberties” answer the question “What is the area within which the subject — a person or group of persons — is or should be left to do or be what he is able to do or be, without interference by other persons?” Positive Liberties instead answer the question “What, or who, is the source of control or interference that can determine someone to do, or be, this rather than that?” [5].

#### 4.2 Negative Rights

From “negative liberties”, a common move is to postulate “negative rights”. Negative rights are often associated with the right for privacy, narrowly conceived as the right “to be left alone”. In a digital context this involves letting people “opt” out of AI intervention. Negative rights are often associated with Libertarian arguments against state intervention.

Negative rights also include freedom of speech. However, cases of hate speech, slander and harassment reveal some of the limits of negative rights. Is it a person’s right not to be libelled? Social media companies are regularly asked to censor (or not censor) certain forms of content. The company makes decisions based on their explicit or implicit values and commercial imperatives.

Arguably negative rights also include freedom from biased options: if an option to do something is not offered to me, but it is to others, based on my race or gender, my rights are being restricted as we are not all considered equal [38]. In the digital world, companies are pressured to increasingly personalize information, both by users who want the simplification of a limited set of tailored options, and by marketers who want to be able to target more effectively. A notorious result of customisation technology is “algorithmic bias” in which, for example, search algorithms perpetuate societal prejudices against minorities by “learning” from human activity. It is generally not the goal of these algorithms to change the status quo, or promote certain values, but, as has been increasingly demonstrated, there are inscribed values and differential, unequal outcomes that arise from particular assumptions underpinning the deployment of algorithms and associated technologies [16].

#### 4.3 Positive Rights

Positive rights include the right to receive support in your pursuit of happiness and wellbeing. For example, a child’s

right to healthcare or education are positive rights. In the digital realm, in light of evidence that excessive mobile use by children has negative impacts on their mental health, the notion that parents have the right to better parental control features and indeed that young people have the right to digital media designed in ways that better respect their psychological needs, could both be considered positive rights.

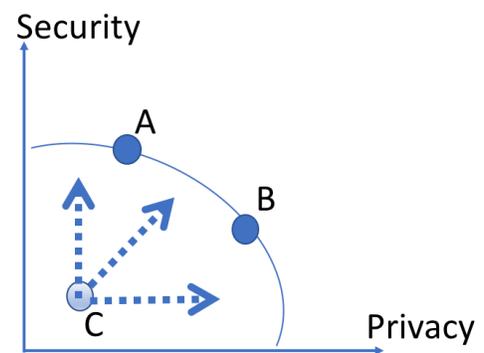
#### 4.4 Delineating Digital Rights

Berlin’s two concepts of liberty, and the ensuing associated framework of positive and negative rights, provide a useful entry-point into the contemporary landscape of how the conceptions and claims of citizens, users, and other humans shape emerging digital technologies and their societal impact.

Of course, there are some modern limitations presented by classic conceptions of negative rights. The increasing pervasiveness of digital technologies means it is difficult to simply opt out or be left alone, in a way that it was impossible to contemplate even just a few years ago. There are also complications around how rights impose necessary trade-offs.

Fig. 1 shows three circles, A, B, C representing possible design targets. A and B represent possible “optimal” trade-offs between privacy and security and any judgement about which is better can only be determined by values. C, however, is where we actually are and represents a suboptimal position in which both privacy and security can still be improved, and values interact with our efforts toward optimisation.

A key point is that within this positive versus negative rights framework, the optimisation has a maximum value, and requires a tradeoff. For instance, complete risk-free personal security is not possible, even if privacy were completely eliminated, whereas absolute privacy is also impossible even if the desire for security were abandoned. Struggling to find a “right” balance between the two is



made even more difficult by the lack of transparency with regard to how individual technology products have opted

to tread that line. There is also an important distinction to be made between the “actual” functionality of technology and the user’s perception and experience of a system through an interface. The concept of “affordance”, widely taken up by the HCI community, aims to delineate the relationships among artefact, environment, agent, perceptions, and use [7].

While such a clear account of the opposing binaries of positive-negative rights can be generative as a starting point in thinking about the social and ethical issues in technology and rights, it also leads to an impasse. This cul-de-sac has seen renewed interest in integrated approaches to rights – whether this is in the expansion of what are regarded as universal rights, or the recent emphasis on *basic rights*, as another way to subsume the negative rights/positive rights distinction [11]. Such an approach, beyond negative versus positive rights, can be found in the capabilities tradition of Amartya Sen and Martha Nussbaum, which is especially interested in questions of equality, justice, well-being, and rights [39, 43] applied in interesting ways to information and communication technology [30]. Such developments in philosophical and political understandings of rights highlights the need for a deeper discussion of many current policies which influence not only the rights afforded to people online but also people’s perceptions of what these rights might be. To take a key example: is Internet access a right, or just another service that people are welcome to purchase? This is an imperative to which UNESCO has responded in its work on defining indicators of Internet universality [47]. The foundations of digital rights is thus an important debate, which plays out differentially across different domains of social life – e.g. households, workplaces, education, public spaces – where particular expectations, infrastructures, and policy and legal frameworks apply (and also are configured differently across particular jurisdictions).

These complex aspects of rights have also been the subject of important recent theoretical and philosophical work undertaken on legal frameworks -- for instance, on the constitutional underpinnings of digital rights, and the ways that oversight can be conceived and configured in the face of the new challenges of automation technology [32, 33].

In keeping with the move to move beyond negative rights/positive rights concepts, and in dialogue with key theory in legal research, in the Australian *Digital Rights* study discussed below, a broad, pluralistic approach to digital rights was adopted which included:

- rights explicitly set out or recognized in law, policy, and regulation;

- rights ideas and practices developed and asserted by a wide range of movements, organizations, and individuals;
- rights that extend beyond traditional frameworks of states, national, regional, and international communities of countries.

In addition, the framework assumes that the recognition of certain rights is shaped by cultural, social, political, and linguistic dynamics, as well as particular contexts and events [29] [35] [24]. We would emphasize here the nuance and context across many socio-economic, demographic, national, cultural, and other factors that shape rights, their activation and practices, and the institutions that nurture them.

As well as rights approaches that focus on citizens, there are new developments in the related area of consumer rights – in particular, in relation to the importance of engaged and dynamic consent [44], not least in emergent concepts and policy frameworks predicating consumer data rights, as in the Australian context [37].

With a firmer grasp of how digital rights can be conceptualized within an HCI context, we move now to the report.

## 5 THE REPORT

Australians are intensive users of smart phones and social media and are in the top ten globally for Internet use. The Australian Digital Rights study was undertaken by an interdisciplinary team of media, sociology, and legal researchers, based at the University of Sydney, including one of the authors of this paper (Goggin).

The project commissioned Essential Media to conduct a representative survey of 1600 Australian respondents. The 1600 participants were randomly selected to undertake an online survey from Essential Media’s *Your Source* online panel of over 100,000 members. The survey was conducted in July 2017. Essential Research provided incentives to its online panel members in the form of points. In addition, Essential Research provided a \$100 incentive to the participants in the online focus group discussion. Following the survey, participants were asked if they were willing to be contacted again to take part in an online discussion forum. Based on the criteria of being over 35-year-old males and females Australia wide, and medium to frequent users of social media, the 14 participants were randomly selected for the online discussion forum. The study was approved by the University of Sydney Human Research Ethics Committee.

The survey was divided into four sections based on areas that the investigators identified as critical to data rights issues: Privacy, Government, Speech, and Work (the latter which we will not discuss here). All participants

completed the Information and Privacy sections of the questionnaire, and 800 completed the Speech section of the questionnaire. The complete results of the study were discussed by Goggin et al [23].

### 5.1 Privacy, Profiling, and Data Analytics

Research on digital privacy is too extensive to cover here, but it has been a concern within computer ethics for decades [28]. In the area of HCI, researchers have employed value sensitive design techniques to study ways of addressing privacy. For example, Friedman and colleagues [18] considered case studies of different technologies that touched on privacy. For the specific Australian context, Daly explored privacy in the context of automation [14].

Building on earlier research, the report explored Australians concerns regarding their online privacy. While two thirds of participants believe they personally have nothing to hide, only a small group (18%) think that more general concerns about online privacy are exaggerated. The study confirmed that privacy was important to Australians overall but that there are some gender differences. Women are more likely to actively protect their privacy online (71%, compared with 63% of men) and to change their social media settings (63%, compared with 58% of men), but they feel no more in control of their privacy (39%, compared to 38% of men).

Relevant to designers is the fact that despite taking active steps to protect their privacy (67%), even changing the settings on the social media they use most often (61%), only a minority (38%) of participants felt that they were able to control their online privacy. It would be useful in a follow up study to explore whether those who try to manage their privacy in these ways feel more or less in control.

There are a significant number for whom the answer to questions relating to privacy online are: “it depends” (in contrast to answers about government and privacy). We interpret this finding to indicate that respondents take a nuanced approach to privacy. For example, it may depend on the kind of technology they are using, where it fits into their everyday life, and what kind of control and agency they have in relation to a system and its implications [27].

Relatedly, the report revealed that Australians are somewhat more concerned about their privacy being violated by corporations (57%) while a substantial number were also concerned about privacy violations by government (47%) and other people (47%). This was further reinforced by the finding that 78% want to know what social media companies do with their personal data.

In this context, the right to privacy can be considered a negative right, as the alternative represents a form of intrusion. The large percentage of people demanding transparency with regard to what companies do with the data they collect arguably reflects a positive right as it

entails a provision (of information). Respecting both negative and positive rights can have costs to a company as has been demonstrated following the GDPR legislation, but not doing so can have greater costs over the longer term as respecting these rights stands to build user trust and loyalty while violating them can lose it.

More than ever, effective implementation of privacy rights in fast evolving areas of digital technology and data involves attention to design, especially cross-cultural understandings of privacy by design [12, 46].

This kind of analysis points to the need to further explore and develop notions of digital rights and how they both build upon but also complicate earlier, “classic” accounts of rights.

### 5.2 Government Data-Matching and Surveillance

Another important issue highlighted by the report’s results are some of the critical difficulties involved in question framing. For example, when participants were asked whether they favour law enforcement and security agencies being able to access metadata, the number in favour was 42% (with 47% opposed). However, when the question added the phrase “as an anti-terrorism measure”, the percentage in favour jumped up to a majority (57%), with only 31% in opposition of a program described this way. This highlights the importance of critically analysing the text for any survey of population opinion data.

In most countries, security is considered a positive right: something the government is expected to provide. These results suggest that Australians, like many around the world, are willing to sacrifice some of their negative rights to privacy, in order to help governments to keep them safe.

However, there are limits. A majority of participants were opposed to government mandates requiring phone companies and internet service providers to store the metadata of phone calls and web traffic: 79% considered such legislation to be a privacy breach. However, attitudes varied based on political identification. Conservative party voters were significantly more likely to support such programs.

Opinions about data matching programs are polarized with 42% of participants in favour and 45% opposed to a program that tracks citizens’ use of public services and benefits.

### 5.3 Free Speech

Freedom of speech represents an important and controversial issue, and digital technologies have amplified, extended and reshaped the complexity of this space. While there are universal rights to freedom of expression, and widespread perceptions of and support for speech rights, concepts vary across the world, as do constitutional, legal, and policy frameworks [26]. There

are also challenging issues of how to support and enable freedom of speech versus rights to be heard and listening, as well as security, civility, and dialogue (especially in online spaces and digital platforms [34, 41].

Some political perspectives (for example, US Libertarians) consider freedom of speech among the most important of digital rights. In contrast, Australians across the political spectrum are less committed to this negative right. Just over a third (37%) of participants agreed that they should “be free to say and do what I want online”, while 30% disagreed and another third expressed reservations about the idea.

Half (50%) of the population and 57% of those under 40, believed anonymity was a right. Women were less likely to support anonymity. In general, anonymity made younger people more open to comment on sensitive topics like politics and sexuality.

Men were more likely than women to express their right to free speech. This is further evidence of the gender differences regarding attitudes to social media. For example, men were less likely than women to agree that removing messages of abuse, sexual harassment, or hate speech was an urgent matter.

It is perhaps unsurprising that those more likely to be victims of abuse would be more likely to support protective interventions and less likely to support negative rights that can facilitate it (i.e. anonymity). For HCI designers this is an important consideration.

As these findings show, especially in relation to gender differences, there are different attitudes towards exercising and experiencing free speech, not just as individuals but as part of contemporary communities that rely upon digital platforms [22]. The very design, implementation, operation, and moderation of such platforms go directly to the heart of free speech making HCI (especially ethical and inclusive design) core to how digital rights of speech, listening, and communication are understood, operationalized, reviewed, and held to account [2].

## 6 DISCUSSION: FROM POLICY TO DESIGN AND BACK

How do the results and analysis of this large-scale national survey tie back to high-level questions of rights and values-based design? And how are these results to be interpreted and used by interaction designers?

While designing for the preferences of the majority can be rationalised by utilitarian consequentialist ethics (in that the wellbeing of the many is maximized) it can also represent what John Stuart Mill identified as a “tyranny of the majority”. HCI practitioners can learn from the diversity of perspectives and design approaches to better target to specific audiences, provide multiple options, or attempt to find middle ground. For example, while

anonymity is known to increase anti-social behaviour online, it also provides an important forum for people to speak more honestly about sensitive issues, and design has the power to invent new ways to resolve conflicting rights like these. Allowing users to craft an identity or avatar with its own reputation to protect but with no link to a person’s real identity can provide a better designed solution [1]. The digital world is open to brand new creative solutions to traditional rights conflicts.

Arguably, designing to support digital rights, i.e. taking into account minorities and different perspectives, will produce better systems for all, in the same way that designing for accessibility does.

However, solutions will never be perfect and it is tradeoffs and careful compromises that define the act of design. Fig. 1 presented an example of one of these tradeoffs.

Regrettably the narratives around digital rights and ethics often presume that there are right and wrong positions. Public attitudes, as evidenced by the *Digital Rights Report* firmly suggest otherwise. Studies like these show that, while sometimes a majority of users agree on a position (e.g. ‘privacy is important’), just as often there is no clear majority, and results change when the question is formulated in a different way.

Just as in politics where different parties reflect different sets of values, technology designs can also reflect different values. While the report described herein took a broad view, there will be an ongoing need for more sophisticated, robust, valid, and nuanced accounts of digital rights. Part of this will involve acknowledging design as central to the rights issue.

### 6.1 Three critical areas for ethical design

We make three recommendations with regard to design for digital rights that we believe require further exploration by the HCI community. First, there is wide agreement that making the values of designers and stakeholders explicit is important, but so is acknowledging the range of values held by users, or rather the different preferences different users have with regard to trade-offs and their digital rights. The Pareto optimum for each user will be slightly different. Moreover, designers have the ability to design for this diversity, but in order to do so, and in order to allow users to tailor their technology use decisions based on their values, transparency is essential. With the mounting complexity of contemporary digital technologies, transparency is also one of the most difficult challenges to practically and fairly address [3], as is evident in the ACM “Fairness, Accountability, and Transparency (FAT)” Conferences [19].

The most familiar effective working method for making rights tradeoffs more transparent to date is the phone access dialogue on Apple’s iOS system (“This app would like to access your camera”). This places the privacy

compromise front and centre within the context of use and requires an active decision on the part of the user. It also allows some granularity with regard to permissions (e.g. I can choose to share my camera but not my location.) Furthermore, app designers increasingly add a “primer” message to explain the benefits for the user of providing permission.

The iOS permission request message is a very simple and basic example of what might, or should, become more nuanced and common place: allowing users themselves to make values-based design tradeoff decisions. A company might also choose to target the rights preferences of a segment of the population or it might choose to offer different products to account for different preferences (e.g. a free version with high privacy trade-offs and a paid version without them).

An important task for HCI will be to devise explicit and simple ways for these rights tradeoffs to be communicated without cumbersome detriment to the user experience and without resorting to pharmaceutical-style small print (e.g. “Privacy loss as a result of using of this app may result in side-effects including continuous partial attention, exploitative targeted marketing, identity theft, or political manipulation by foreign powers.”)

It is also reasonable to expect that robust, reliable, accessible, and contextually appropriate information resources leading to unbiased information on the various risks associated with different tradeoffs could be developed and made available as a resource by non-profit organisations (as this is currently done in relation to a wide range of products and services by consumer organizations around the world). The creation of such a resource forms our second recommendation.

Third, we stand by the proposition that technologies should be informed by empirical evidence of what factors support psychological wellness, based on the notion that “do no harm” psychologically should form a foundation for ethical design. Self-determination theory [42] provides a framework based on decades of accumulated research, that has been adapted to the HCI context [40]. The evidence on how basic psychological needs (autonomy, competence, relatedness) support wellbeing across age groups and cultures is strong. For example, Ng et al. [36] and Hagger and Chatzisarantis [25] combined data from 184 and 34 studies respectively to provide empirical evidence of how SDT predicts intentions and behavior across diverse groups.

But other theoretical frameworks exist and could be used as well. What is important is for design ‘policy’ or ethical frameworks to be evidence-based, and include a focus on respecting psychological needs.

As companies are increasingly required to allow users to identify, delete or move the data being collected about them, transparency, ethical considerations, attention to psychological needs, and explicit communication of values

can all contribute to more ethical technologies and a context in which users can make more informed judgements about which technologies to use and what rights to hand over [17].

## 7 CONCLUSIONS

The influence of the values and ethical philosophy of John Stuart Mill on politics today is explicit and intentional (in the UK, each leader of the Liberal Democrat Party gets a copy of Mill’s book *On Liberty*). In contrast, the unconscious values of the companies and designers creating technology today diffuse through society without any kind of explicitness. If we are to have informed consent and agency with regard to technology and our lives, we will need to bring the ethical perspectives and values of technology creators, users, and communities finally out into the open.

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## REFERENCES

- [1] Adrian, A. 2008. No one knows you are a dog: Identity and reputation in virtual worlds. *Computer Law & Security Review*. 24, 4 (2008), 366–374.
- [2] Ananny, M. 2018. *Networked Press Freedom: Creating Infrastructures for a Public Right to Hear*. MIT Press.
- [3] Ananny, M. and Crawford, K. 2018. Seeing without knowing: Limitations of the transparency ideal and its application to algorithmic accountability. *New Media & Society*. 20, 3 (2018), 973–989.
- [4] Barbour, I.G. 1993. *Ethics in an Age of Technology*. Harper.
- [5] Berlin, I. 1969. Two concepts of liberty. *Berlin, I.* 118, (1969), 172.
- [6] Brodie, S. and Rowe, C. 2002. Aristotle: Nicomachean Ethics. (2002).
- [7] Burlamaqui, L. and Dong, A. 2015. The use and misuse of the concept of affordance. *Design computing and cognition'14*. Springer. 295–311.
- [8] Calvo, R.A. et al. 2014. Autonomy in Technology Design. *CHI '14 Extended Abstracts on Human Factors in Computing Systems* (New York, NY, USA, 2014), 37–40.
- [9] Calvo, R.A. et al. 2015. When technologies manipulate our emotions. *Communications of the ACM*. 58, 11 (2015), 41–42.
- [10] Calvo, R.A. and Peters, D. 2014. *Positive Computing: Technology for wellbeing and human potential*. MIT Press.
- [11] Capone, S.F. 2011. Negative Rights BT - Encyclopedia of Global Justice. D.K. Chatterjee, ed. Springer Netherlands. 749–750.
- [12] Cavoukian, A. 2011. Privacy by Design in Law , Policy and Practice A White Paper for Regulators. *A white paper for regulators, decision-makers and policy-makers*. August (2011).
- [13] Chatila, R. et al. 2017. The IEEE global initiative for ethical considerations in artificial intelligence and autonomous systems [standards]. *IEEE Robotics & Automation Magazine*. 24, 1 (2017), 110–110.
- [14] Daly, A. 2017. Privacy in automation: An appraisal of the emerging Australian approach. *Computer Law & Security Review*. 33, 6 (2017), 836–846.
- [15] Desmet, P.M.A. and Pohlmeier, A.E. 2013. Positive design: An introduction to design for subjective well-being. *International Journal of Design*. 7, 3 (2013), 5–19.

- [16] Eubanks, V. 2018. Automating inequality: How high-tech tools profile, police, and punish the poor. (2018).
- [17] Frauenberger, C. et al. 2015. In pursuit of rigour and accountability in participatory design. *International Journal of Human Computer Studies*. 74, (2015), 93–106.
- [18] Freidman, B. et al. 2006. Value sensitive design and information systems. *Human-computer interaction in management information systems: Foundations*. (2006), 348–372.
- [19] Friedler, S.A. and Wilson, C. 2018. Conference on Fairness, Accountability, and Transparency: Preface. *Proceedings of the 1st Conference on Fairness, Accountability and Transparency*. 81, (2018), 1–2.
- [20] Friedman, B. 1996. Value-sensitive design. *Interactions*. 3, 6 (1996), 16–23.
- [21] Friedman, B. and Kahn Jr, P.H. 2007. Human values, ethics, and design. *The human-computer interaction handbook*. CRC Press. 1223–1248.
- [22] Gillespie, T. 2018. *Custodians of the Internet: Platforms, content moderation, and the hidden decisions that shape social media*. Yale University Press.
- [23] Goggin, G. et al. 2017. Digital Rights in Australia. (2017).
- [24] Gregg, B. 2011. *Human rights as social construction*. Cambridge University Press.
- [25] Hagger, M.S. and Chatzisarantis, N.L.D. 2009. Integrating the theory of planned behaviour and self-determination theory in health behaviour: A meta-analysis. *British Journal of Health Psychology*. 14, 2 (May 2009), 275–302.
- [26] Hallberg, P. and Virkkunen, J. 2017. *Freedom of Speech and Information in Global Perspective*. Palgrave Macmillan US.
- [27] Hartzog, W. 2018. *Privacy's Blueprint: The Battle to Control the Design of New Technologies*. Harvard University Press.
- [28] Himma, K.E. and Tavani, H.T. 2008. *The handbook of information and computer ethics*. John Wiley & Sons.
- [29] Hunt, L.A. 2007. *Inventing human rights: A history*. WW Norton & Company.
- [30] Kleine, D. 2013. *Technologies of choice?: ICTs, development, and the capabilities approach*. MIT Press.
- [31] Knobel, C. and Bowker, G.C. 2011. Values in design. *Communications of the ACM*. 54, 7 (2011), 26.
- [32] Mann, M. et al. 2018. The limits of (digital) constitutionalism: Exploring the privacy-security (im) balance in Australia. *International Communication Gazette*. 80, 4 (2018), 369–384.
- [33] Mann, M. and Smith, M. 2017. Automated facial recognition technology: Recent developments and approaches to oversight. *UNSWLJ*. 40, (2017), 121.
- [34] Milliken, Mary C.; Gibson, Kerri; O'Donnell, S. 2008. User-generated video and the online public sphere: Will YouTube facilitate digital freedom of expression in Atlantic Canada? *American Communication Journal*. 10, 2 (2008), 1–14.
- [35] Moyn, S. 2010. *The last utopia*. Harvard University Press.
- [36] Ng, J. et al. 2012. Self-determination theory applied to health contexts a meta-analysis. *Perspectives on Psychological Science*. 7, 4 (2012), 325–340.
- [37] Nguyen, P. and Solomon, L. 2018. *Consumer data and the digital economy: Emerging issues in data collection, use and sharing*.
- [38] Noble, S.U. 2018. *Algorithms of Oppression: How search engines reinforce racism*. NYU Press.
- [39] Nussbaum, M.C. 2011. *Creating capabilities*. Harvard University Press.
- [40] Peters, D. et al. 2018. Designing for Motivation, Engagement and Wellbeing in Digital Experience. *Frontiers in Psychology*. 9, (2018), 797.
- [41] Price, M. and Stremlau, N. eds. *Speech and Society in Turbulent Times: Freedom of Expression in Comparative Perspective*. Cambridge University Press.
- [42] Ryan, R.M. and Deci, E.L. 2017. *Self-Determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness*. Guilford Press.
- [43] Sen, A. 1993. Capability and well-being. *The quality of life*. M. Nussbaum and A. Sen, eds. Oxford University Press.
- [44] Solomon, L. and Martin-Hobbs, B. 2018. *Five preconditions of effective consumer engagement -- a conceptual framework*.
- [45] Weizenbaum, J. 1976. *Computer power and human reason: From judgment to calculation*. W. H. Freeman & Co.
- [46] Zakaria, N. et al. 2003. Designing and implementing culturally-sensitive IT applications. *Information Technology & People*. 16, 1 (2003), 49–75.
- [47] 2018. *Defining Internet universality indicators. 2nd draft*.