How do you solve a Problem like Consent? - The Workshop

Abstract
Ubiquitous computing systems raise unprecedented challenges to how we currently elicit, secure and sustain user consent. Consent is the interactional process by which a user agrees to the terms of engagement with a system, and it represents the principle mechanism by which we protect our privacy online. However, whereas traditional online interactions are explicit, offering a series of moments at which one might inform and engage the user, the growing ‘era of ubiquity’ has decoupled users from devices, presenting no clear moment for consent to occur. Whilst there have been efforts to raise issues of consent within HCI and cognate disciplines, these remain disparate. The aim of this workshop is to bring together a solution-oriented community with a specific focus on consent issues within interactive environments. It will create a transnational, multidisciplinary platform for discussion and offer opportunities for collaboration, support and the development of a new research agenda.

Author Keywords
Consent; Ubiquitous Computing; Ethics

ACM Classification Keywords
K.4.1 [Computers and Society]: Public Policy Issues - Ethics
The problem of consent
Consent is the principle means by which we are empowered to protect our privacy [1, 8] and preserve our autonomy online [4]. It represents a human ritual, both highly social and contingent upon the context within which it occurs [6]. Conceptually, consent draws from four principles enshrined within the Nuremberg code; that it is voluntary, competent, informed and comprehending [3]. These principles, derived from moral philosophy, assume respect for autonomy, beneficence, and justice [3]. Consent within online systems is a direct enactment of these principles and as such is both an embodiment of this specific set of human values and “a digital manifestation of a social interaction” [7, p.2688].

It is clear, however, that the concept as currently articulated within socio-technical systems has drifted far from the tenets that formed it. Consent, as an autonomous and informed authorisation to a violation or intrusion, has been reduced, within digital systems, to a series of casual physical actions such as ticking a box or entering a website. Equally, the practice of consent has received scant attention within HCI and Ubicomp. In particular, little consideration has been given to (a) forward-looking conceptual work, and (b) research specifically addressing the challenges of consent within pervasive systems.

For the purposes of the workshop we define the term ‘ubiquitous computing’ as a computational and design trend towards something that “isn’t so much a particular kind of hardware, philosophy of software design, or a set of interface conventions as it is a situation – a set of circumstances” [5, p.31]. Such systems are “unremarkable by design” and thereby invisible in use [10]. From the user perspective, whilst these systems reduce the physical and cognitive load, their characteristics invisibility mask not only their operation, but also the ways in which user data flows both within and outside of that system. Whilst this might not seem problematic at first glance, such incognisance on the part of the user has the potential to result not only in unanticipated uses of their data, but also in emotional and reputational harm. So the question arises, how do you solve a problem like consent for Ubicomp?

What are appropriate consent mechanisms?
Irrespective of the definition one favours, for consent to be valid it should be (a) informed, (b) the user should be both capable of consenting and (c) free to do so, and that the act itself should be (d) un-coerced and (e) not a result of error, or (f) of fraudulent means [3,4,6]. Within a bioethical or research context, this definition includes the right to revoke consent at any time, though this is not yet a requirement of data protection [11].

However, whilst mechanisms to manage consent exist for traditional online systems, the unremarkable and embedded nature of pervasive computing systems problematise their transferral. Indeed, even if such transferral was possible, these mechanisms are already highly flawed; either securing user consent without supporting their understanding, or placing emphasis upon user control after the signal of assent, thereby by-passing issues raised at the point of consent itself [1]. The pervasion of ubiquitous systems within all facets of daily life continues to raise the issue of securing user consent, to the ongoing use of human data, as one requiring address. Unfortunately, the
unique challenges posed by Ubicomp environments make this far from a straightforward task [6].

*What is the impact of policy/regulatory changes?*

The need to explicitly address issues of consent is further amplified by on-going policy change. Whilst data protection regulation has cemented implied consent as a model, effectively placing responsibility upon the user, new proposed regulations favour a shift in responsibility. Instead of the user, these implicate the designer, as data protection will be expected “by design and by default” [2]. The growing importance of explicit consent is becoming equally visible within international perspectives on privacy [9], raising the importance of ensuring valid user consent. Whilst these developments are still some way from becoming a legal requirement, this move sets a potential trajectory and speaks of a climate which seeks to place consent back under the control of the user, casting the design of systems as a central mechanism by which this should be achieved.

*The purpose of the workshop*

The existing practices of consent are deeply challenged by innovations in technology and ICT generally, and by ubiquitous technologies in particular. These practices, for interacting with users to gain consent, are rooted in a particular historical context [8] and are no longer viable. Subsequently, there is a need to move beyond the current flawed models of consent [1] to more embedded approaches that responsibly balance legislative, social and design imperatives within any future developments. Such an undertaking takes a consistent, supported and multidisciplinary community effort.

Currently, consent issues are local, application-specific and dealt with discretely. We suggest that drawing together these discrete efforts supports a stronger and better-informed response. The proposed workshop would invite contributions from a range of disciplines to consider the problem of consent within ubiquitous systems. This would represent the first step in the development of an international community of practice focused specifically upon this issue.

*Workshop plan*

The overarching goal of the workshop is to bring together a multi-disciplinary group of academics, design professionals and practitioners in order to focus on the challenge of securing supporting and sustaining user consent, to the ongoing use of their data, within ubiquitous computing systems. The workshop is designed in two distinct halves. The first half will focus on participants’ suggested solutions to specific consent-related problems, whilst the second half will open discussion to the wider group and focus collectively upon existing unsolved challenge areas.

Participants will be encouraged to consider how the tenets of consent (that it is voluntary, competent, informed and comprehending) [4], might be better embodied within the design of pervasive systems. For example, how can we support users’ voluntary choices, ensure they are sufficiently informed and that they understand what they are agreeing to?

*Workshop aims*

This workshop has four principle aims;

1. To use ‘consent’ as an umbrella to draw together research and theoretical perspectives on how
future systems might address the challenges raised in eliciting, informing, securing and sustaining consent.

2. To create a solutions-oriented community with a specific focus on consent issues within Ubicomp environments (both in the context of research and real-world deployment)

3. To offer a collaborative and supportive environment in which to discuss consent problems and offer collective solutions

4. To act as a springboard to launch a sustainable special interest group in the area of consent

...and three objectives;

1. Participants develop a collective familiarity with consent as a concept
2. Participants develop a collective understanding of some of the key consent challenges arising from Ubicomp
3. Participants engage in the community of practice, beyond the workshop

The workshop aims will be realised through a process of pre-event planning, structured delivery, and post-event support and stimulus in order to ensure a sustainable community.

Preparation and participation
It is our intention to invite proposals from two perspectives; (1) those presenting specific challenges related to user consent, and (2) those that have developed specific solutions to consent challenges – in each case these might be theoretical or practical. Consequently, we would seek papers that (a) articulate either a clear implementation challenge within a sphere of HCI, or a specific challenge within a broader area, and (b) explain this challenge within the theoretical context of consent. In the case of group (2), we will ask that they also (c) explain the solution and (d) offer a clear articulation of how that solution supports the practices of user consent. In order to ensure fair review, we will invite a panel of reviewers from a variety of disciplinary backgrounds (e.g., Law, Social Science, HCI, Computer Science, Ethics, and Creative Industries) with knowledge of either consent or technology. Papers will be reviewed on the basis of (a) the grounded nature of the consent problem, (b) the extent to which the paper clearly articulates and addresses an aspect of consent, and (c) the transferability of the solutions and the extent to which they are accessible to a broad audience.

Accepted papers will be limited to between 8 and 12 in order to allow time to focus upon each consent issue raised. For example, 4 papers might focus upon consent challenges (these will be addressed during the afternoon session) and 6 upon consent challenges with identified solutions (these will inform the focus of the morning). A keynote presentation, covering a topical area, will set the tone for the day. In preparation for the day, accepted papers will be made available at www.consent-workshop.com and the workshop and accepted papers will be posted on the Responsible Research and Innovation in ICT Observatory.¹

On the day
We propose that this workshop runs across one day to sustain momentum, and will be coupled with a strong post-event programme to promote sustainability. The day will run across two halves (see table 1 for a breakdown of activities).

¹ http://responsible-innovation.org.uk/torrii/
The day will commence with an introduction and welcome from the workshop chairs, followed by an invited keynote.

This will be followed by a series of short presentations from those authors who had articulated specific solutions in their submission. Drawing from these selected papers, the wider group will be sub-divided and given a consent challenge to discuss and 45 minutes to provide reflections to the presenters. This format will run again after coffee with the remaining groups.

The second part of the day (post lunch) will focus upon the papers articulating unsolved consent challenges. In each case the problem space will be briefly presented to the group, highlighting key characteristics of the issues and posing a set of specific research questions. Groups will then discuss the evidence and devise solutions or offer guidance. Representatives will then present their solutions to the wider workshop. Once each presentation is complete, the paper author will explain how they actually solved their challenge.

Once all groups have presented, the final section of the workshop will be dedicated to collectively deciding post-workshop activities. The workshop organisers will explain their plans for sustaining and building the community, and participants will contribute their ideas, fleshing out a plan to ensure the energy of the workshop is not lost.

Post-event and anticipated Contribution to the field: It is anticipated that the event is simply the start of the development of a multidisciplinary community of
practice. Sustaining this community will be achieved in a number of ways; (a) a full report of the day will be published online (b) a web-presence will be launched, including a regularly updated blog, linking to papers/stories of interest. Whilst the organisers will drive this, all participants will be encouraged to contribute, and (c) all accepted workshop papers would be included in the ACM digital library and supplementary proceedings.

This workshop will take the first steps in generating an evidence-based typology of the key challenges arising within Ubicomp and consent. It will provide significant insights into the landscape of this emerging issue and offer some preliminary and cutting edge solutions to the community, which are sorely needed. Participants will also be invited to a post-workshop meal to build relationships. Prior to the workshop we will actively seek to secure a journal special edition to expand upon the most developed submissions.

Challenge areas
In order to stimulate contributions to this workshop, it is helpful to set out some example challenge areas that papers might wish to address. Consent, in application, implicates a broad range of perspectives including design, computer science, health sciences, psychology, law, sociology, and economics. As such, it is anticipated that contributions to the workshop will address the issue of consent in a range of ways. Areas that papers might wish to address include:

(a) theoretical challenges, e.g. ‘if we move towards a model of owning our own data, what will consent be then?’ (b) application domain challenges, e.g. smart cities, the Internet of Things (IoT) and wearable technologies (c) legal and policy challenges, e.g. data protection and control of the use of personal data, (d) design challenges, e.g. How to provide for consent without unduly disrupting the user experience (e) specific technology challenges, e.g. mobile technology, and (f) social challenges, e.g. how might these interactions be embedded in daily, mundane and routine practices in ways that do not overburden or concern the user.

Conclusions
Informed consent is an important human value [4], as yet unrepresented within the design of ubiquitous systems [6]. This workshop will take the first steps in generating an evidence-based typology of the key challenges arising within Ubicomp and consent. It will provide significant insights into the landscape of this emerging issue and offer some preliminary and cutting edge solutions to the community, which are sorely needed.

Organisers’ backgrounds
The workshop organisers draw from multiple disciplines.

Ewa Luger is a research fellow in the Mixed Reality Lab (MRL) at the University of Nottingham. Her work focuses upon the ways in which consent might be reframed to better support the design and development of ubiquitous computing systems.

Tom Rodden is Professor of Interactive Systems at the MRL at the University of Nottingham. His research focuses on the development of new technologies to support users within the real world and new forms of
interactive technology that emerge from mixing physical and digital interaction.

Marina Jirotka is an academic in the Department of Computer Science, University of Oxford, UK. She is currently leading the EPSRC Framework for Responsible Research and Innovation in ICT project and is co-investigator on two European Union projects on Responsible Research and Innovation. Marina is a Chartered IT Professional of the BCS and sits on the ICT Ethics Specialist Group committee.

Lilian Edwards is Professor of E-Governance at Strathclyde University, Deputy Director of CREATe, the UKRC centre for Copyright and Business Models, and Director of the Centre for Internet Law and Policy at Strathclyde. Her research interests encompass many areas of the law relating to the Internet, the Web and new technologies, including privacy and data protection.

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