IT'S COMPLICATED: The ethics of gamified labor

Marigo Raftopoulos
GEElab, School of Media and Communication
RMIT University
Melbourne, Australia
marigo.raftopoulos@rmit.edu.au

Steffen P. Walz
GEElab, School of Media and Communication
RMIT University
Melbourne, Australia
steffen.walz@rmit.edu.au

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Abstract
An increasing number of applications are using gamification in research and participatory problem solving, however several ethical issues are beginning to emerge that may compromise their integrity. Our paper highlights the ethical issues of using gamification to extract unpaid labor, and the use of persuasive gamification design practices that can potentially be considered exploitative. We conclude by suggesting the collaborative development of an industry framework based on a value-sensitive design to overcome these issues.

Author Keywords
Gamification, labor, ethics, innovation, problem solving, value-sensitive design, games with a purpose.

ACM Classification Keywords
H.5.1. Multimedia information systems

Introduction
The digital economy has produced new and pervasive forms of engagement and participation in research, problem solving and value creation. At this point in time we are seeing a confluence of approaches such as crowdsourcing, collaboration and gamification that are rapidly being adopted by organisations to access data, accumulate cognitive resources or solve problems far more cost-efficiently than at any other time in history.

The immediate private and social benefits of this phenomenon are significant, and this has been the key reason that the rate of adoption of gamification has been able to successfully spread across many industries and domains. There are however significant ethical issues that have been overlooked during this hyper-growth period. The confluence of these pervasive technologies has socialized us into a system of gamified labor [1] or digital labor [2] where these new systems and applications have created a new cognitive working class. Today's peer-to-peer values of openness, participation, co-creation, creative-commons orientation [3] and fun [4] have created a new kind of work, and much of it is unpaid in economic terms on the assumption that the public are receiving intrinsic benefits derived from participation. A more critical view is that this phenomenon commodifies cognitive or intellectual labor while capital accumulation remains with those who own the digital assets. In addition to this, it is questioned whether human interaction with these gamified systems is facilitated by persuasive technologies to encourage participation.

In this position paper we will discuss the challenges associated with gamified labor and research, and finish with a call to action for participants in this CHI15 workshop. One of the key challenges we have as researchers is how we can shape the gamification of research to democratize labor processes rather than use it to prop up existing economic constructs that facilitate exploitation or an uneven distribution of economic reward. Here is where the complications set in: Gamifying research may lead to productivity and innovation, however, ethical considerations challenge the nature of design decisions, the investment decisions, and how profits are distributed, placing any potential gains at risk. There are no mechanisms in place to manage this tension fairly and equitably under current constructs.

Our research into gamified systems

There are a wide range of gamified systems and applications used across many different domains. Our database of over 300 enterprise gamification examples, accumulated as part of our doctoral research, shows that 14% were identified as cases where gamification was used for collaborative problem solving or innovation [20]. In terms of the technologies used in these examples, 12% were digital games or simulations, 58% were gamified platforms, websites or applications, and 30% were playful experiences that involved physical interaction by users with a gamified digital application. These examples also showed that there was a wide spread of target audience for the application, i.e., 23% were targeted to internal staff, 30% were direct to customers, clients or patients, 16% were targeted to a specific industry or community and 30% were targeted at the general public. Key features of these gamified applications included crowdsourcing, collaboration and data capture to extract the resources required to solve the project objectives. However on closer investigation of the design and investment decisions that were made in this sample of projects, there was no common or established best practice on identifying or managing potential ethical issues.

Citizen science games like 'FoldIt'' [5] and Games with a Purpose (GWAP) show how online games can be successfully used to solve large-scale problems [6] [7] [8]. Using games and game-like environments to solve problems has received wide attention in the popular media [9] [10] [11] and this attention has raised public awareness and willingness to using games and gamification experimentally in non-entertainment contexts. Gamification is known for its engagement and fun, however this obscures the nature of these games as work [12] and their potential exploitation.

Research into GWAP shows us that the key motivation for people to play a game was not driven by the fact

that they will solve a problem, but to be entertained [6] [7] [8]. The implication is that in designing a game with a purpose we need to primarily design for engagement, as the intrinsic motivator is not sufficient on its own. This opens the way for designers to adopt persuasive game design techniques that may compromise project integrity. Questionable persuasive technologies include:

- Using persuasive technologies or captology where human emotions, actions and behaviors are shaped and reinforced through technologies such as surveillance, conditioning and channeling.
- Using gamification as an operant conditioning type of persuasion tool where technology shapes human behavior through a predetermined schedule of reward and punishment [13] [14]
- Undertaking data collection that can potentially compromise individual privacy through performance monitoring, surveillance and data 'leakage' in gamified enterprise applications, which are issues that form part of the wider human–computer interaction discourse on data, privacy and ethics of persuasive technologies [15] [16] [17] [18]

A key method that may assist in overcoming the potential ethical issues raised in this paper is to utilize the key methodologies available to us in software design, for example, value-sensitive design (VSD).

Value-sensitive design and gamification

VSD is a theoretically grounded approach to the design of technology that accounts for human values in a principled and comprehensive manner [19]. The utilization of VSD can be used to ensure a more ethical approach to gamified research design. Key elements that can be integrated into the design process includes the VSD tripartite model of conceptual, empirical and technology to identify key stakeholders, the values that are implicated, how value is created and appropriated in the application, and how technology design can support stated values. Where this method can benefit in the design of gamified research is the consideration of 13 individual VSD 'values' as part of the consultation and participatory design process, which includes mechanisms that highlight human welfare, ownership, property, privacy, informed consent, trust and identity.

There are many pragmatic challenges with developing and implementing VSD, however the potential benefits provide an important counterbalance to the potential tensions that can be caused by unethical gamified research design and practices. Discourse on values in game design already has a rich history. For example Flanagan's work on 'values at play' in designing for values in socially-oriented game design [21] is a good base that can help inform how we can apply ethics to gamified research.

Conclusions

The challenge to the research community is to come together to evaluate how we can utilize these existing tools to address the ethical challenges we are facing in gamified research. This will also provide the potential to build improved systems that do not rely on the exploitation of labor, but enables the full potential of human creativity and innovation.

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