Physicality 2009 – towards a less-GUI interface
Third International Workshop on Physicality

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http://www.physicality.org/physicality2009/

ABSTRACT
This multi-disciplinary workshop is the third in its series aiming to explore the issues surrounding physicality. As digital technology increasingly invades the devices and products that surround us, interaction designers and product designers need to make sense of the subtle interactions between physical form and activity and the way these influence and are influenced by digital functionality and interaction. Our theme is "towards a less-GUI interface" inspired by the need to reduce the reliance on tiny screens through effective physical design. Such screens not only have an increasingly limited utility with an aging population but they are not always optimal.

Categories and Subject Descriptors
H.1.2 [**Models and Principles**]: User/Machine Systems – *human factors, human information processing, software psychology.*

General Terms
Design, Human Factors, Theory.

Keywords
Physicality, digitality, product design, design process, design techniques, tangible interfaces, ubiquitous computing.

1. INTRODUCTION
This workshop is the third in its series following on from Physicality 2006 [7] and Physicality 2007 [11] workshops. Each of these attracted eclectic and enthusiastic participation from designers and technologists, artists and architects, psychologists and philosophers, thus recognizing the timeliness and importance of the area. We hope that this workshop will be equally diverse and trans-disciplinary.

As digital technology invades more and more of the devices and products that surround us, it is increasingly important that interaction designers and product designers are able to make sense of the subtle interactions between physical form and activity and the way these influence and are influenced by digital functionality and interaction.

In fact we never interact with computation, except through some form of physical interaction be it pressing a keyboard, gesturing with a hand, or creating pressure waves with our voices as we speak a command. In order to make sense of these physical interactions and design for them, we need to take seriously the physical nature of the devices with which we interact and the nature of our own bodies and brains.

We have adopted "towards a less-GUI interface" as a theme this year. Despite the dramatic increase in power and functionality in contemporary information appliances, interaction methods continue to be heavily dependent on more and more overloaded small graphical user interfaces. However, various systems have provided alternatives to graphical user interfaces [6, 8, 2, 5] but none have exploited physicality as the basis for user interactions with the devices.

As Porter et al [9] noted: "*the tactile sense is commonly underused and undervalued. This is despite evidence that tactile-based controls can require minimal use of vision and information processing resources, and other significant usability benefits in relation to screen-based interfaces*." There is plenty of evidence that quantifiably shows the value of haptic interfaces [1, 4, 3]. This suggests that physicality could be better exploited in design.

We started work on the 'DEPtH: Designing for Physicality' project[1] in April 2007, which is part of the Designing for the 21st Century Initiative[2]. Both the timeliness of the topic and the excitement it engendered in previous workshops in the series give good reasons for holding a third workshop. The contributions to the previous workshops also led to a journal special joint issue [11].

2. TOPICS
This workshop has adopted "towards a less-GUI interface" as a theme. Tiny screens are proliferating on appliances in the home,

[1] http://www.physicality.org/

[2]http://www.design21.dundee.ac.uk/Phase2/P2_Projects.htm

devices in cars and on the phones and media players we carry on our bodies. However, an aging population means that such screens may have increasingly limited utility, and even for those with full sight staring at a tiny screen is not always optimal whether operating a remote whilst watch TV, or navigating down a busy street. So the question we would like to address is: To what extent can effective physical design reduce the reliance on such screens or obviate them entirely?

We will welcome position papers that address this theme, but also those covering other areas of physicality including:

- design at the physical-digital frontier;
- the philosophy of physicality;
- artefact-focussed social interaction;
- physically-inspired interaction in virtual worlds;
- creativity and materiality;
- interactive art and performance;
- physicality and fidelity of design;
- enabling technologies for haptic input and output.

3. PROCEDURE

The Call for Papers for the workshop will be distributed to relevant mailing lists to solicit submission of 2-6 page position papers. We would also like to encourage contributions in other forms such as demonstration, artwork, performance, etc.

A website will be developed to support the workshop and will provide up-to-date information to prospective participants.

All submissions will be peer-reviewed and judged on the basis of originality, contribution to the field, technical and presentation quality, and relevance to the workshop. All accepted contributions will be published in the workshop proceedings as either short or long papers.

The workshop will include invited talks, short individual presentations and group activities. There will also be a poster session that will enable participants to showcase their work or demonstrations. A core part of the workshop will be a design session where groups attempt to create complete GUI-less designs (with no screen at all) for devices where a screen is taken for granted. The latter will encourage interaction among participants and promote discussion. The workshop will conclude by consolidating the findings of the day.

The DEPtH project will fund a speaker to give a keynote to address the theme of this workshop.

4. ACKNOWLEDGMENTS

This workshop is sponsored by DEPtH: Designing for Physicality, a jointly funded research project by AHRC/EPSRC on research grant AH/E507646.

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