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Visions and Visioning in CHI

CHI 2013 Special Interest Group Meeting

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Abstract

There are many visions that touch on the future of human computer interaction from a trans-human future to a post-technological UI. However visions related to the progress of technology are not new. Creative and insightful visionaries from Denis Diderot to Vannevar Bush have been postulating visions of possible futures or technology for centuries. Some idealised views end up discredited with advances in knowledge, while others now appear remarkably prescient. The question is, do visions and the process of creating them have a place in CHI, or are they simply flights of fancy?

This SIG meeting provides a forum for visionaries; researchers and practitioners looking to consider the place and importance of visions within CHI. Can visions, the process of visioning and forming new visions help us refine, advance or develop new research or forms of interaction. And if visions are important to us, then are they part of the regular academic process? If so, should CHI provide venues for publishing new visions?

Author Keywords

Visions; Visioning

ACM Classification Keywords

H.5.2. Information interfaces and presentation (e.g., HCI): Interaction Styles

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Vision 1: A Trans-Human Future

Technology is increasingly an intimate part of our bodies. The PC desktop metaphor will be replaced with body-focused computation, the current functions of the computer, becoming an integral part of what it means to be human in the 21st Century.

Currently we accept as normal that we carry on our bodies mobile phones, USB sticks, and NFC credit cards. Some have devices implanted for medical purposes, or even for paying for drinks at a bar and Google glasses will soon make Mann-style external augmentation mainstream.

In 5–10 years external augmentation will be the norm, and in 5-15 years internal augmentation, including brain-computer interfaces will take over. The HCI challenge will be how to design these internal systems so that they seamlessly form part of our perception and cognition.

Introduction

Can visions such as a trans-human future (1) or the post-technological UI (2) act as "an incentive for scientists" [2] or function as a focal point for new communities? This SIG aims to reflect on CHI's stance towards visions as a means to advance research in human computer interaction. Are visions part of the regular academic process and should they be embraced in CHI as in the UbiComp conference? This SIG seeks to form a community of interest around reflecting on visions, the visioning process and considering if visions have a place beyond post-hoc justification of research.

Visions allow us to consider what our preferred future for computing and interaction might be. Even before computing was conceived, visionary thinkers in art, science, the popular press and science fiction presented visions of a world underpinned by computing.

Visions are typically not grounded in the problems or limitations of today's computing environments. Instead, they provide us with a long-term view focused on a possible future. Published in papers, books, videos or other media [8] visions can afford CHI a source of inspiration, the ability to spark the imagination and help communicate the thoughts and aspirations of many. Visions have successfully helped create communities of interest; where entire communities and conferences have been established based on visions.

This SIG aims at discussing the role of visions in CHI research and what role visions should have at the CHI conference. Committees do not create new visions nor do participants in a 90-minute SIG. Instead the goal here is to understand the place of visions and how they

can aid in furthering research, development and indeed changing our perceptions of what CHI might be.

Existing Visions

There are many established visions we can draw on from Ubiquitous Computing [13] to Radical Atoms [6]. Existing visions range from being ones which are explicitly defined, technologically defined by example, defined by interaction, implicitly defined or emerge naturally as a concept.

Emergent visions such as the Paperless Office have formed through the popular press, only later to be questioned as myth by researchers [11]. Visions based on technological examples have emerged from research or concepts such as the Phone Slave [9] or Knowledge Navigator [10] and offer a view of interaction that can inspire others to see them as visions. Visions based on views of interaction include Embodied Interaction [3] and Instrumental interaction [1]. Implicit visions emerge related to specific technologies such as Brain Computer Interfaces or VR and to concepts such as the Singularity [7], Internet of Things or Ambient Intelligence [14].

Some visions present a more definitive view of how they would like to see the world and examples of such include Ubiquitous Computing (vanishing computer, embodied virtuality, context, pads, multi-display environments) [13], Memex ("WWW concepts", brain computer interfaces, new forms of encyclopedia, speech recognition, association indexing) [2], Tangible User Interfaces [12], Augmenting Human Intellect [5] and Radical Atoms (dynamic materials, shape-memory clay) [6].

Not all visions have come about from a single author or even a clearly defined vision statement. Some have caught the imagination or aligned naturally with emerging

□ **Vision 2:
Post-technological UI**

Excitement in technology as a saleable product will soon peak and lead to a renewed focus on invisible technology and technologically designed non-technological solutions.

In recent years we have seen a '60s like enthusiasm for new technologies, including car navigation, mobile phones, and smart TVs. However, the increasing incremental nature of, for example, successive iPhone releases suggests innovative technology as a differentiator is approaching its end.

Furthermore, there is an increasing feeling of the intrusiveness of technology in day-to-day lives and realisation that built-in obsolescence is unsustainable at a global level.

The challenge for HCI is to deal with truly invisible technologies and help designers minimise the non-renewable elements of these.

communities while others have languished in obscurity. For CHI what use are visions in practical terms?

Use of Visions

Visions are “immortal thoughts” which endure, fly and inspire “precisely in proportion to the depth of mind from which it issued, so high does it soar, so long does it sing.” [4]. Visions have traits, problems, and functions and can be considered of different categories.

Traits common to all visions are an aspirational future, an idealized past and a recognition that the technology or use of technology today is poor. Some visions are framed so far into the future that they often appear to the reader as science fiction or magic rather than a concept that can inspire or motivate research now. Other visions are much closer to our current world as they draw on established or expected developments in scenarios. As such, this category of vision is often easier to understand and embrace. In either category visions can function to communicate ideas, inspire or energise research, point out gaps in current technology, aid in community formation, act as a bridge to other fields and even improve funding. Visions do have problems, for example either being too radical or more often describing a perfect and hence unrealistic world.

Despite these potential problems, visions have proven to have the power of shaping communities in Human-Computer-Interaction and guiding research efforts over many years, or even many decades.

Consider for example Vannevar Bush’s vision of Memex that was published in 1945. This has inspired several generations of researchers working on hypertext interfaces – most remarkably this holds true even

though Bush foresaw fundamentally different, analog technology as the basis of hypertext than the digital technology employed by Engelbart and his successors. The vision of Ubiquitous Computing (UbiComp), was developed at Xerox PARC at the beginning of the 1990s. It defined their research for years, led to the creation of conferences and is still very influential on current HCI research and thinking even after 20 years.

The emergent vision of the Paperless Office helped frame the thinking Xerox put into the development of PARC. While other authors presented this vision as a myth [11], it remains as a vision or counter-vision.

For more details, we refer to Reeves’ [8] recent paper, which provides a thorough analysis of various roles that visions and envisioning can play.

SIG Objectives

The intention of this SIG is to raise the awareness, interest and considered use of visions and visioning in the CHI community. We are interested in mapping out existing visions, which can be of use in CHI and discussing the need for new visions. In this we aim to critique where visions have been used in foresight activities. We also seek to explore how and where the visioning process can be of use, before, during and after research is undertaken. Following the discussion approach in [8] we aim to better understand the role of visions in HCI.

The overall objective of this SIG is to better understand if visions can be of use in CHI, is a well framed vision a scientific contribution in its own right and should CHI stimulate the presentation, discussion and publication of visions. What are the appropriate venue for visions?

Based on the feedback from this SIG, we expect to make proposals for how CHI might embrace visions.

Organisation

For this 90-minute SIG we have five phases. The first phase occurs before the SIG itself where a website and wiki are established to support the discussion at the SIG. Authors of 2-3 leading visions will present their visions and why they think that visions were or remain relevant, how they influence their research process, etc. (30 minutes overall). Following this, a plenary discussion or round table discussions (depending on number of attendees) on the questions stated in the section on SIG Objectives (45 minutes), concluding with a discussion of next steps: how to provide a forum for visions at CHI (15 minutes). Following this, the fifth phase may take the form of a new space within CHI for visions, an online forum, or an open handbook on visions and visioning to inspire and inform research.

Audience

As time has shown, radical futurists and visionaries have come from a broad spectrum of society. As such, we aim to invite artists, senior industrial researchers, science fiction writers, and senior academics along with more junior academics that actively engage in the pre-SIG phase. The SIG will welcome those seeking to advance existing or new visions, those with a skeptical view of the usefulness of visions, to those actively involved in creating new visions outside of CHI.

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