

# being human – human computer interaction in the year 2020

human(s) / value(s) / report(s)

The question persists and indeed grows whether the **computer** will make it easier or harder for **human beings** to know who they really are, to identify their real **problems**, to respond more fully to **beauty**, to place adequate **value** on life, and to make their **world** safer than it now is.

Norman Cousins, *The Poet and the Computer, 1966*

The questions that result are far-reaching and profound. HCI can no longer be solely the scientific investigation of what role technology might have. It will need to be part of the empirical, philosophical and moral investigation of why technology has a role. (p. 8)

The world we live in has become suffused with computer technologies. They have created change and continue to create change. It is not only on our desktops and in our hands that this is manifest; it is in virtually all aspects of our lives, in our communities, and in the wider society of which we are a part. (p. 10)

What will our world be like in 2020? Digital technologies will continue to proliferate, enabling ever more ways of changing how we live. But will such developments improve the quality of life, empower us, and make us feel safer, happier and more connected? Or will living with technology make it more tiresome, frustrating, angst-ridden, and security-driven? What will it mean to be human when everything we do is supported or augmented by technology? What role can researchers, designers and computer scientists have in helping to shape the future? (p. 10)

IMG The Reactable: a multitouch interface for playing music. Performers can simultaneously interact with it by moving and rotating physical objects on its surface. Reactable was developed by Sergi Jord and colleagues at the Universitat Pompeu Fabra, Barcelona. Icelandic songstress Bjork used one on her 2007 tour. (p. 16)

IMG Animated Textiles developed by Studio subTela at the Hexagram Institute, Montreal, Canada. These two jackets synch up when the wearers hold hands, and the message scrolls from the back of one person to the other. (p. 18)

IMG The Rovio robotic webcam is wirelessly connected to the Internet. It roams around the home providing an audio and video link to keep an eye on family or pets when you're out. (p. 21)

New data sources are available to us all the time. We are all fast becoming content producers, publishers and developers as much as we are consumers. (p. 23)

IMG Audiovox's Digital Message Center is designed to be attached to the refrigerator, letting families scribble digital notes and leave audio and video messages for each other. (p. 27)

By 2020, there will be very few people left on the planet who do not have access to a mobile phone. (p. 30)

IMG ART+COM's artistic installation called Duality, located at the exit of a metro station in Tokyo. Passers-by provoke virtual ripple effects with their footsteps, as if walking across a pond. (p. 32)

The characteristics that make us human will continue to be manifest in our relationship with technology. (p. 35)

IMG Electronic sensing jewelry (a concept from Philips Design) is based on stretchable, flexible electronic substrates that integrate energy supply, sensors, actuators, and display. By changing colour or even shape according to your mood, it explores how wearable technology can be playful, sensual, mood-affected, bio-activity stimulated. (p. 36)

Just as the interface between people and computers is radically altering, so, too, is the boundary between computational technology and the objects and surfaces in the everyday world. (p. 38)

IMG Another playful piece of technology is the History Tablecloth, by the Interaction Research Studio (Goldsmiths College, University of London). It is designed to cover a kitchen or dining-room table. When objects are left on the table, the cloth starts to glow beneath them, creating a halo that expands very slowly. When items are removed, the glow fades quickly. (p. 38)

The more we depend on technologies to carry out or mediate our everyday activities, the more we will need to trust them to do so. (p. 41)

IMG Garment is developing full-bodied smart garments . to be worn by fire-fighters and the like . that monitor and transmit the location and vital signals of its wearer (such as body temperature and heartbeat). (p. 40)

The digital crowd is likely to play a more influential role in shaping the human values of the future. (p. 45)

IMG Microsoft's Surface. is an interactive tabletop allowing two-handed interaction with digital objects such as photos, music files, games and maps. These kinds of interactive surfaces encourage collaborative, creative engagement. (p. 50)

IMG The Kiss Communicator is a concept prototype that allows you to blow a .kiss. to your beloved even when in another part of the world. Squeezing and blowing on the device wirelessly sends a sequence of lights to its corresponding Communicator. (p. 53)

The bottom line is that computer technologies are not neutral, they are laden with human, cultural and social values. (p. 57)

Extending the Research and Design Cycle: Understand, Study, Design, Build, Evaluate.

The delivery of one value will have implications for other values. (p. 63)

Design for values can and often will lead to profound choices. (p. 68)

Case Study: Tracking versus surveillance in families

Values such as reassurance, togetherness and enchantment call for different ways of thinking about how we design technology. (p. 70)

IMG The Whereabouts Clock: the lefthand image shows the clock in its case; the middle image is a close-up of its interface; and the righthand image shows what happens when you touch on a text message. (p. 71)

Case Study: The value of augmenting human memory

In what situations might we want to remember and why? And is it sometimes better and more desirable to forget? (p. 73)

Different human values guide us in different directions, both in terms of the literature we need to look at, and the work that needs to be carried out. (p. 74)

IMG The Digital Shoebox, by designer Richard Banks of Microsoft Research Cambridge UK, is an attempt to make the storage of digital photos more tangible. Photos can be sent wirelessly to the box, and users can browse through them by running their finger across the top of the box. (p. 75)

In the future, more lightweight, rapid prototyping and design iteration processes will be required, ones that will allow complex ecosystem experiences to be investigated as well as simpler, human-machine relationships. (p. 81)

Just as computing has gone beyond the interface, so, too, will HCI professionals need to move outside of the scientific community they have lived within and find ways to engage with society as a whole. (p. 92)

