

Five Books on Design and Culture

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Van Burnham. *Supercade: A Visual History of the Videogame Age 1971-1984*. MIT, 2001. ISBN: 0262024926.

Paul Dourish. *Where the Action is: The Foundations of Embodied Interaction*. MIT/Trilateral, 2001. ISBN: 0262041960

Peter Menzel and Faith D'Aluisio. *Robo Sapiens: Evolution of a New Species*. MIT, 2001. ISBN: 0262632454

Derek Powazek. *Design for Community: The Art of Connecting Real People in Virtual Places*. New Riders, 2001. ISBN: 0735710759

Nathan Shedroff. *Experience Design 1*. New Riders, 2001. ISBN: 0735710783

Jorge Frascara's 2002 edited volume, *Design and the Social Sciences*, signals an increasing interest in the role of the social sciences in design, as well as new possibilities for the critical evaluation of new media technologies. The five books selected for this review are meant to encourage researchers of space and culture to engage issues surrounding new technologies at the design stage, rather than waiting to evaluate their social impacts after-the-fact. Only Dourish's book is a traditional academic text, while the others comprise new media design books, and more popular texts on historical and future technologies from the perspective of design. These books should appeal to a broad range of research interests surrounding human-computer interaction, the social dimensions of software design, sociability and virtual spaces, and the role of new technologies in everyday public and private life.

As an academic text, Paul Dourish's *Where the Action Is* addresses the "foundations of embodied interaction" and presents an approach to designing interaction with software systems that emphasizes phenomenological engagement and practice, in contrast to earlier approaches based on disembodied rationality. He begins with a history of approaches to human-computer interaction, including electrical, symbolic, textual, graphical, tangible and social computing. Tangible computing focusses on physical artefacts, while social computing is concerned with the world of social interaction; both

rely on the “ways we experience the everyday world” and the individual cannot be separated from contexts of action. These approaches to design are contrasted with purely cognitive or rational approaches in which there is a clear distinction made between the mind and the external world. Dourish argues for a further step away from these earlier approaches, and towards embodiment, or embeddedness, as a “participative status” of being in the world. In terms of human-computer interaction, this approach focusses attention on the contexts of use (such as computer-supported cooperative work environments); on work activities and artefacts in concrete, rather than abstract terms; and on the notion that due to their direct embodiment in our world, “artefacts of daily interaction can play many different roles.”

Taking a phenomenological perspective, Dourish is concerned with perception, action and understanding. He advocates a unified model of human-computer interaction based on tangible, social and embodied practices, and questions of presence, embodiment and action. Drawing on examples from ubiquitous computing and virtual and augmented reality, the author provides a brief history of tangible computing. Social computing is contextualised within the histories of sociology, ethnography and anthropology. Drawing on ethnomethodology, Dourish proposes a “technomethodology” which refocuses the former to address the “foundations” of software systems design, including “abstraction, function, substitution, identity and representation.” According to the sociological work of Garfinkle, Giddens and Goffman, the author examines accountability in interface abstractions and questions of space, place and locales.

Embodied interaction is presented as “Being-in-the-World.” In other words, “embodied phenomena are those that by their very nature occur in real time and space.” Drawing on the phenomenological work of Husserl, Heidegger, Schutz, Merleau-Ponty and Wittgenstein, the author argues for a perspective grounded in the relationship between social action and setting or context. As such, Dourish defines embodied interaction as the “creation, manipulation, and sharing of meaning through engaged interaction with artefacts.” Meaning is seen to involve intentionality, ontology, intersubjectivity and coupling, and “while intentionality concerns the relationship between what is done and what is meant, coupling is concerned with how that relationship is maintained.” Central to Dourish’s position is the idea that we do not act *on* technology, but rather *through* it, and as such, we can convert computers from objects of “enquiry and examination, into tool[s] that can be used.”

Dourish calls for a common framework of design principles: 1) computation is a medium; 2) meaning arises on multiple levels; 3) users, not designers, create and communicate meaning; 4) users, not designers, manage coupling; 5) embodied technologies participate in the world they represent; and 6) embodied interaction turns action into meaning. For the author, the primary design problem is interaction, or how we “adopt new technologies, adapt them to our needs and incorporate them into our world and activities.”

Finally, he considers the issues of barriers and boundaries in technological convergence and information appliances, as well as concerns around the “invisible interfaces” of

pervasive and ubiquitous computing. The principles of embodied interaction are presented as a guide to interface design, focussing on an approach which renders some processes transparent, actively engages users, and allows computers to “move into the background without disappearing altogether.”

Dourish’s book should be of interest to researchers in fields such as computer-supported cooperative work, organisations and new technologies, virtual spaces, communications theory, phenomenology, space and culture.

In *Experience Design*, “a manifesto for the creation of experiences,” new media designer Nathan Shedroff explores the notion of “seductive interfaces” and argues for the design of experiences. Shedroff describes the process of experience as one which requires “an attraction, an engagement, and a conclusion.” *Attraction* comprises a signal to any of our senses; the prime mover of experience is sensorial. *Engagement* is the experience itself; it must be different enough to be initially recognized and cognitively relevant enough to be continued. *Conclusion* is defined as a resolution through meaning or action; although there may also be an *extension* which prolongs, revives or redirects an experience. Shedroff argues that experience design can be distinguished from other forms of user-centred design precisely due to the focus on conclusion, or the role of the designer in creating a *whole* experience, from beginning to end.

For Shedroff, successful new media experiences involve the processes by which data are transformed into wisdom. *Data* are defined as “the building blocks on which relevance is built,” raw and meaningless. *Information* is contextualized data, with thought given to its organisation and presentation, and thereby comprising the “beginning of meaning.” Information becomes *knowledge* as “sufficiently generalized solutions” are “gained through experience”. In other words, knowledge is information that we act upon, and can share, in order to build personal context. *Wisdom* comprises “sufficiently generalized approaches and values that can be applied in many, varied situations,” but remains “almost exclusive to our own minds.” According to this schema, data are noumenal, not perceived or interpreted and only inferable through experience. The nature of data therefore stands in contrast to the phenomenal nature of information, and the experience of knowledge. The final goal of this communication process is wisdom, or the sum of one’s experiences, which cannot be shared like knowledge, but can inform future experiences.

Shedroff weaves concepts of design into a wide variety of experiences and spaces, according to a broadly cognitive, and specifically sensorial, approach. In conjunction with notions of experience, he offers a set of design concerns based on cognitive models of subjectivity, identity, multiplicity and community. Interactivity is presented in terms of participation, creativity, “adaptivity” and productivity, including notions of storytelling, narrative structure, non-linear navigation and point of view.

Researchers of space and culture can find many points of entry into these discussions. For example, Shedroff discusses the Institut de Monde Arabe as architecture which externally appears to comprise ancient Islamic latticework, which upon entering, is

revealed as futuristic robotic apertures. He considers the experience of the architecture to be one of surprise or reversal of expectations, rather than, for example, of alterity or simulacra. Experiences such as shopping and eating-out, and products such as wireless devices, are interpreted as sensual engagements, and not, for example, in terms of consumption and identity. Likewise, his discussions of amusement parks, Cirque de Soleil and the Burning Man festival could be (re)placed within notions of the spectacle, and practices of cooking and participating in tea ceremonies or conversations could be (re)contextualised within the critical literature on everyday life. Introducing broader spatial and cultural concerns to these notions of communication and experience could serve to critically examine the places of technology in social life and the ethics of user-centred design.

Derek Powazek's book, *Design for Community: The Art of Connecting Real People in Virtual Places*, is a design book like Shedroff's, and should appeal to researchers interested in online social networks, individual and collective behaviours in virtual spaces, computer-supported cooperative work and design.

Powazek is concerned with designing and implementing web communities, and focuses on audience, content, architectural and visual design, and more explicit social concerns such as online policies, and moderating and policing community interactions. Cultivating online community is also presented in terms of creating intimacy, eliminating barriers to entry, keeping channels of communication open and the notion that all communities eventually dissolve.

Researchers of virtual spaces should be interested in the issues of governance discussed in this book. Powazek favours a reduction of informal and formal barriers to participation, and an acknowledgement that barriers change over time. He considers elements of online intimacy, including trust, support and shared stories, as well as obstacles to intimacy, including the notion that "computers are work," and technological "paranoia." And finally, he acknowledges the need to collectively and locally *set*, to clearly *communicate*, and to *enforce*, rules of social-spatial interaction. Each topic of sociability and design includes conversations with designers working in that area.

Although this book focuses on practical design concerns, including technological and business needs, it offers much to researchers of space and culture as it delineates "successful" virtual communities. Collective behaviour is understood in terms of flexible systems of interaction, which takes into account both public and private online spaces, as well as issues of freedom and control. Researchers should also find the "lessons learned" by various online community designers particularly interesting, as they offer an opportunity to explore experienced virtualities as challenges to design.

More than its coffee-table book appearance suggests, Menzel and D'Aluisio's *Robo Sapiens: Evolution of a New Species* offers researchers of space and culture the opportunity to engage current robotics technologies and their designers. The book collects stunning photography, intelligent interviews and discussions between the editors and a variety of academic and corporate researchers in artificial intelligence,

cyberneurology and biomimetics on their work in robotics. While not techno-utopian in approach, the narrative does adopt a futuristic fascination with the projected roles of robots in social life.

Of particular interest should be the humanoid robots and other robotic applications for work and leisure. With a national research mandate, the Japanese are well-established in the area of humanoid robot design. What distinguishes Japanese design is the focus on building mechanical systems according to the principles behind “biological sensors and actuators and the systems that control them.” Research tends to be contextualised within a broader enquiry into the biological mechanics of human bodies, and the ultimate goal is often considered a matter of building compatible mechanisms that will somehow help people, and improve their daily lives. On the other hand, American research in robotics is shown to focus on the creation of “thinking machines” that mimic human cognitive abilities and have the capacity to learn. In this sense, the American research is presented as a less tangible, or more existential, approach to the design of humanoid robots, yet still focussed on eventually improving quality of human life.

For researchers interested in the current and projected roles of robots in work, home and leisure life, there is ample discussion of off-road vehicles, domestic robots, personal assistants, prosthetic devices, surgical robots, and even artificial policemen. Entertainment devices discussed include “battle bots” and robotic sports, television and film characters, and robotic pets. Possible themes for further investigation include power and control, the body and cyborgs, and identities and consumption in both local and global contexts. *Robo Sapiens* offers a unique perspective on robotics technologies: discussions with designers and engineers about what they are now building, and what they see for the future of robotics.

Finally, Van Burnham’s *Supercade* presents a “visual history of the videogame age 1971-1984.” Not only should this reference encyclopaedia appeal to anyone interested in the history of computer-based game design, but also to researchers of space and culture. A timeline presents key technologies, companies and cultures of video game development, as well as individual games for each year. Games are further sub-divided into home console games, computer and personal computer games, and arcade videogames. Each game is discussed in terms of its graphic design, and the purposes and types of interaction in game-play, as well as placed within the larger American research and industrial contexts of game design, production and marketplace competition.

The book should be of particular interest to researchers of consumer culture and virtual spaces. Histories of videogame icons such as Pong, Space Invaders, Pac-Man, Donkey Kong and Mario Brothers are contextualised within broader computer technologies. The value of the text is an organisation of content that allows researchers of space and culture to critically examine various contexts of design and usage – from early mainframe users, to the advent of personal computers, and the rise and fall of video-game arcade culture. The early history of home consoles also provides interesting background material for current research on the market and cultural dominance of Sony Playstation, Nintendo, Sega and Xbox video games.

Works cited

Frascara, J. (ed.). 2002. *Design and the Social Sciences*. New York: Routledge.