

I n d e x

- Activity
 - concept map of, 51
 - in context, 50–53
 - as the focus of interaction design, 72
 - human need to work well, 206
 - props and cues, 37
 - reflection in, 152
 - task monitoring, 127–128
 - theories in psychology, 50–52
 - value emerges from, 194
- Affordance
 - defined, 35
 - the word overexposed, 52
- Alexander, Christopher, 55
- Anytime-anyplace. *See* Ubiquitous
- Architects
 - contribution to interaction design, 119
 - explored cognitive mapping, 33
 - know cost of world making, 59
 - knowledge of environmental perception, 27
 - and models, 97
 - role among many disciplines, 22
 - understand conceptual models, 160
- Architecture
 - building climate, 108–109
 - as cognitive background, 64
 - extensible by digital layer, 114
 - imposes schema on the body, 47
 - kinetic elements, 84
 - schematic identity, 115
 - shapes cognition, 58
 - and situational types, 119
 - as stage, 111–112
 - and technological change, 61–62
 - and typological design, 58–60
 - the word, to interaction designers, 153
 - the word appropriated, 63
- Artificial intelligence (AI). *See* Intelligent
- Association for Computing Machinery (ACM), 5, 123, 155
- Augmented reality, 88, 124
- Benjamin, Walter, 47
- Benyus, Janine, 211
- Berry, Wendell, 43
- Big Brother. *See* Orwell, George
- Bloomer, Kent, 42
- Body
 - and architecture, 57–58
 - art, 30
 - biometrics, 82
 - image, 28–31, 39
 - interpersonal distance, 39
 - language, 28
 - mind-body problem, 30–32
 - wearable computing, 129–130
- Boyer, M. Christine, 179
- Brand, Stewart, 59
- Brown, John Seeley, 49
- Brumitt, Barry, 101
- Building. *See* Architecture
- Building and room types
 - brownstones and row houses, 58
 - churches, 138
 - conference room, 112
 - corner office, 27–28

- cottage, 59
- family kitchen, 54
- great room, 130
- highrise office, 61
- hotel, 140
- office cubicle, 109–110
- saltbox house, 43
- prisons, 131
- tollbooth, 4
- trading floor, 123
- Buxton, William, 71, 122

- Calatrava, Santiago, 84
- Carroll, John, 165
- Casey, Edward, 176
- Castells, Manuel, 48, 203
- Cliff, David, 76
- Community
 - knowledge resides in, 123
 - and place, 181–185
 - the word abused, 183
- Computer-human interaction (CHI),
 - 20, 72, 154, 157
- Cooper, Alan, 68, 153
- Cosmology, 40–41
- Cyberspace, paradigm shift to
 - pervasive computing, 5–11

- Descartes, René, 31
- Design methods
 - contextual inquiry, 158
 - scenario planning, 161
 - as a social process, 3
 - strategy, 147–151
 - typological design, 58–60
- Deskilling, 179–181
 - lapse of typology, 59
 - and placelessness, 42
 - and spatial literacy, 38–42
- Dewey, John, 198–199
- Digital ground, defined, 172–174
- Douglas, Mary, 57

- Dourish, Paul, 53
- Dreyfuss, Henry, 19
- Duffy, Frank, 109

- Ecology
 - adaptation in, 211–213,
 - of information, 189
 - scale in 54
 - of services, 186–190
- Electrification, 47, 61, 70
- Eliade, Mircea, 40
- Embodiment. *See* Body
- Ethnography, 157–161
 - of activity in context, 52
 - role among many disciplines, 22
- Experience design, 17, 157–161

- Foster, Hal, 30
- Foucault, Michel, 38
- Futurama, 13–14, 19
- Futurism. *See* Technofuturism

- Geertz, Clifford, 158
- Geodata, 103–107
- Geographic information system (GIS),
 - 89, 103
- Geography markup language, 91
- Gibson, J. J., 35
- Giedion, Sigfried, 12–13
- Global positioning system (GPS),
 - 81, 89–91, 99, 104, 141, 186
- Ground, explained, 172–174

- Haptic
 - with accelerometers, 76
 - defined, 29
 - force feedback, 125
 - interfaces, 85–86
 - orientation, 29
 - tangible computing, 53
- Hawken, Paul, 203
- Hilbert, David, 175

- Holtzblatt, Karen, and Hugh Beyer, 158
- Hughes, Robert, 30
- Hugo, Victor, 87
- Information pollution, 16–17
- Intelligent
- badges, 136
 - building construction, 106–107
 - buildings, 109–111
 - identification cards, 82
 - internetworking, 70
 - operational models, 107
 - smart dust, 73
 - spaces as cultural productions, 172
 - transportation systems (ITS), 91, 141
- Internet
- ad hoc networks, 78–79
 - belief in visiting sites, 31
 - boom over, 22
 - business to business, 126
 - as computing paradigm, 69
 - conflated with idea of cyberspace, 7
 - negates geometry, 98
 - space of flows, 48
 - technofuturism, 7–8
- Interaction design
- advocacy and strategy, 149–152
 - challenge of knowledge representation, 87
 - CHI approach, 20, 72, 154, 157
 - common practices, 147–170
 - contribution by architects 119
 - and environmental economics, 189
 - foundations in cognition, 27,
 - fundamentals on activity in context, 50–53
 - GOMS usability metrics, 155, 160
 - history of, 19–21, 154–160
 - introduced, 3
 - and mental models, 32–34
 - new roles, 19–21
 - and organizational change, 150–151
 - as practice, 147
 - and service ecologies, 188
 - tapping latent predispositions, 43–44
 - user modeling, 111–113, 160–161
- Ishii, Hiroshi, 82
- Jackson, J. B., 179
- Jacobs, Jane, 11–12, 60, 187
- Johnson, Samuel, 30
- Joy, Bill, 69
- Kahn, Louis, 117
- Kao, John, 151
- Kelley, David, 151
- Lakoff, George, and Mark Johnson, 32
- Laurel, Brenda, 3, 91
- Le Corbusier, 43
- Lefebvre, Henri, 48
- Location models, 96–98
- Logan, Jon, and Harvey Molotch, 203
- Lynch, Kevin, 33
- Machover, Tod, 138
- McHarg, Ian, 24, 104
- McLuhan, Marshall, 135
- McNealy, Scott, 78
- Merleau-Ponty, Maurice, 34–35
- Meyrowitz, Joshua, 179
- Microelectromechanical systems (MEMS), 5–6, 74, 76, 85
- Mitchell, William, 62
- Modernity
- apex at 1939 Fair, 12–14

- and architecture, 58
- market economics, 200–202
- more space than place, 175
- and pushbutton automation, 19–21
- and technological change, 62
- transparency, 11
- as world making, 23–24
- Mok, Clement, 21, 157
- Mumford, Lewis, 12, 62

- Nardi, Bonnie, 50, 53, 189
- National Institute for Standards and Technology, 7
- National Spatial Data Infrastructure, 104
- Natural technology, 24, 64, 211
- Navigation, in automobiles, 90, 140, 186
- Neighborhoods, as service ecologies, 131, 183, 205
- Norberg-Schulz, Christian, 178
- Norman, Don, 68, 70

- Oldenburg, Ray, 132
- Orwell, George, 15, 71

- Paradigm shift, 173, 203
 - from cyberspace, 9–10
- Pentland, Alex, 71, 88
- Periphery
 - in awareness, 33
 - design principle of, 49
 - as goal of architecture, 63–64
- Pervasive computing
 - absorbed into physical building, 64
 - annoyance of programmability, 17
 - as built intentions, 115
 - in cars, 84
 - in common objects, 19
 - defined, 7
 - for escape from desktop, 68
 - importance of geometry, 102
 - as a movement, 14
 - objections to, 18
 - paradigm shift from cyberspace, 5–11,
 - renewable, 79
 - technology overview, 67–96
 - and the value of places, 205–207
 - wearables, 129–130
- Phenomenology
 - of embodiment, 34
 - of place, 177
- Philosophical background
 - activity theory, 50–52
 - mental models, 32–34
 - mind-body problem, 30–32
 - phenomenology, 34, 177
 - space itself, 48
 - space and place, 175–178
 - value, 195–200
- Place
 - and community, 181–185
 - do not dismiss as romanticism, 213
 - and embodiment, 27
 - and language, 38–43
 - and phenomenology, 177
 - and placelessness, 179–181
 - placelessness and economism, 200–202
 - and space, 175–178
 - technical reasons for local computing, 99–101
- Privacy
 - choices in, 101,
 - loss of, 15
 - Scott McNealy’s dismissal, 78
- Programming
 - actuators and feedback systems, 83–85
 - annoyance of programming consumer devices, 17
 - challenge of knowledge representation, 87

- geodata, 103–107
- need for new class of designers
- location models, 96–98
- open systems for extensible places, 114–115
- tuning of technological environments, 92–94, 107
- typological imperative, 142–144
- Projects. *See* Research projects
- Putnam, Hilary, 115

- Radiofrequency identification tags (RFID), 80–81, 112
- Raskin, Jef, 49, 155
- Relph, Edward, 182
- Research projects
 - ALIVE, MIT, 88
 - Architectural Anatomy, Columbia, 124
 - AwareHome, Georgia Tech, 93
 - BlueSpace, IBM, 109–110
 - Brain Opera, MIT, 138
 - EasyLiving, Microsoft, 102
 - Everywhere Displays, IBM, 87
 - Kumo Interactive, Fuji Xerox, 122,
 - list of smart home projects, 133
 - Oxygen, MIT, 7
 - ReachIn, haptic rendering, 86
 - SenseBus, Toronto, 138
- Rooms. *See* Building and room types
- Rossi, Aldo, 11, 60
- Ruskin, John, 196

- Saffo, Paul, 70
- Scale
 - of activity, 54
 - body gives, 29
 - of institutions, 57
 - of place, 143
- Schumpeter, Joseph, 200
- Sensors, 74–77
 - environmental systems, 107–108
 - force feedback, 125
 - increase in number, 6
 - geological, 99
 - the key technology, 74
 - saturation should be a major story, 14
 - structural monitors, 128
 - and surveillance, 15–16
 - and tagging, 112
- Service ecology, 131, 183, 186–190, 205
- Shafer, Steve, 92
- Siewiorek, Dan, 79
- Simon, Herbert, 147–148
- Smart. *See* Intelligent
- Snyder, Gary, 211
- Software. *See* Programming
- Space
 - ability with, 36
 - a priori, 31
 - body imposes a schema on, 28
 - of flows, 48
 - in language, 37, 39
 - mental models, 33
 - as movement, 12
 - and place, 175–178
 - production of, 48
 - and time altered by railroads, 62
- Sport, 29, 137
- Suchman, Lucy, 52
- Surveillance, 15, 77–78, 127–128
- Sustainability
 - adaptation 211–213
 - appropriate technology, 202–204
 - life cycle models, 109

- Tags, 80–83
 - radiofrequency (RFID), 80–81, 112
 - smart badges, 82, 136
 - uniform product code, 80
- Tangible. *See* Haptic
- Technofuturism, 7–12, 73, 83

- Telephones, 10, 73, 98, 121, 123, 134
- Tennenhouse, David, 80
- Territoriality, 38–40
- Thackara, John, 161
- Touch. *See* Haptic
- Tuan, Yi-Fu, 28, 171, 176
- Tufte, Edward, 157
- Tuning, of technological environments, 92–94, 107
- Type. *See* Typology
- Typology
 - in architecture, 55
 - as basis of architecture practices, 164
 - close to essence of architecture, 60
 - a comprehensive notion, 55
 - concept map of, 56
 - design as variations on a theme, 109
 - functional vs. architectural, 60, 164
 - as generative design abstraction, 58–60
 - list of situational types, 120
 - and technological design, 142–144
 - and tuning technological environments, 94
- Ubiquitous computing. *See also*
 - Pervasive computing
 - arguments against universal technology, 100
 - has overlooked context, 11,
 - limits of anytime-anyplace computing, 70
 - not necessarily portable, 64
 - text as historical analogy, 4
 - universal and portable, 117
 - universal versus situated computing, 142
 - the word ubiquity, 5
- Urbanism
 - collective memory, 60
 - cyberspace as, 11
 - cruising, 135
 - demographics and clustering, 105
 - futurama, 12–14
 - high tech nomads, 185–186
 - reading a city, 37–38
 - paseo, 39
 - pedestrians, 141
 - placelessness, 179
 - repository of value, 204–205
 - service ecologies, 131, 183, 186–190, 205
 - technological change, 61
 - typology in, 60
- Usability, 22, 155, 198–200
- User modeling, 111–113, 160–161
- Vidler, Anthony, 180
- Wayfinding. *See* Navigation
- Wearable computing, 129–130
- Weiser, Mark, 6, 67, 70, 86–87
- White, E. B., 13–14
- Wiener, Norbert, 108
- Winograd, Terry, 88
- Wittgenstein, Ludwig, 32
- Xerox PARC, 83–87
- ZIP codes, 103–105
- Zuboff, Shoshana, 108