

**“CALCULATING IMAGES: REPRESENTATION BY ALGORITHM IN SCIENCE AND ART”**  
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**WINTER 2005**

**TENTATIVE SYLLABUS**

All listed texts are in the class reader.

**THURSDAY, JANUARY 6: INTRODUCTION**

**THURSDAY, JANUARY 13: THE PICTORIAL TURN**

<b>Required Readings:</b>
W.J.T. Mitchell, “The Pictorial Turn.” In: W.J.T. Mitchell, <i>Picture Theory</i> . Chicago: The University of Chicago Press, 1994, pp. 11-34
W.J.T. Mitchell, “Metapictures” In: W.J.T. Mitchell, <i>Picture Theory</i> . Chicago: The University of Chicago Press, 1994, pp. 35-82

**THURSDAY, JANUARY 20: IMAGES BETWEEN REPRESENTATION AND HARDWARE**

<b>Required Readings:</b>
George Legrady, “Image, Language, and Belief in Synthesis.” In: Simon Penny. <i>Critical Issues in Electronic Media</i> . New York: State University of New York Press, 1995, pp. 187-203
Horst Bredekamp, “Metaphors of the End in the Era of Images,” Heinrich Klotz (ed.), <i>Contemporary Art</i> . Munich: Prestel, 1997, pp. 32-37
Jonathan Crary, from <i>Techniques of the Observer. On Vision and Modernity in the Nineteenth Century</i> . Cambridge/Mass: MIT Press, 2001, p. 1-2
G.W.F. Hegel, <i>Lectures on Fine Art</i> . Oxford: Clarendon Press 1975, pp. 304-307; 404

Vannevar Bush, "As We May Think." In: <i>Electronic Culture. Technology and Visual Representation</i> . Denville: Aperture, 1996, pp. 29-45
Friedrich A. Kittler, "The World of the Symbolic—A World of the Machine." In: Friedrich A. Kittler, <i>Literature. Media. Information Systems</i> . Amsterdam: OPA, 1997, pp. 130-146
Friedrich Kittler, "Grammophone, Film, Typewriter." In: Friedrich A. Kittler, <i>Literature] JMedia. Information Systems</i> . Amsterdam: OPA, 1997, pp. 28-49
<b>Additional Reading (suggested):</b>
Friedrich A. Kittler, "There is no Software." In: Friedrich A. Kittler, <i>Literature. Media. Information Systems</i> . Amsterdam: OPA, 1997, pp. 147-155
Hans-Jörg Rheinberger, "Auto-Radio-Graphics." In: Bruno Latour/Peter Weibel, <i>Iconoclasm. Beyond the Image Wars in Science, Religion, and Art</i> . Karlsruhe: MIT Press, 2002, pp. 516-519
Norbert Wiener, "Gestalt and Universals." In: Norbert Wiener, <i>Cybernetics. Or Control and Communication in the Animal and the Machine</i> . Paris: The Technology Press, 1948, pp. 156-167

#### THURSDAY, JANUARY 27: DATA WORLDS (SCIENCE/BODY/IMAGE)

<b>Required Readings:</b>
Mark B.N. Hansen, "Between Body and Image: On the 'Newness' of New Media Art." In: Mark B.N. Hansen, <i>New Philosophy for New Media</i> . Cambridge/Mass.: MIT Press, 2004, pp.21-47
Lev Manovich, from <i>The Language of New Media</i> . Cambridge/Mass.: MIT Press, pp. 177-183

Bruno Latour, "What Is Iconoclash? Or is There a World Beyond the Image Wars?" In: Bruno Latour/Peter Weibel, <i>Iconoclash. Beyond the Image Wars in Science, Religion, and Art</i> . Karlsruhe: MIT Press, 2002, pp. 14-37
Lisa Cartwright, "A Cultural Anatomy of the Visible Human Project." In: P.A. Treichler et al. (eds.), <i>The Visible Woman. Imaging Technologies, Gender, and Science</i> . New York: NYU Press, 1998, pp.
Peter Galison, "Images Scatter Into Data, Data Gather Into Images." In: Bruno Latour/Peter Weibel, <i>Iconoclash. Beyond the Image Wars in Science, Religion, and Art</i> . Karlsruhe: MIT Press, 2002, pp. 300-323
Sarah Kember, "Medicine's New Vision?" In: Martin Lister (ed.), <i>The Photographic Image in Digital Culture</i> . London: Routledge, 1995, pp. 95-114
<b>Additional Reading (suggested):</b>
Jürgen Brickmann, "Simulationen in virtuellen Szenarien von Molekülen." In: Florian Rötzler/Peter Weibel (eds.), <i>Strategien des Scheins. Kunst. Computer. Medien</i> . Munich: Boer, 1991, pp. 146-160
Arthur I. Miller, "Visualization Lost and Regained: The Genesis of the Quantum Theory in the Period 1913-1927. In: <i>Electronic Culture. Technology and Visual Representation</i> . Denville: Aperture, 1996, pp. 86-107
Harun Badakhsi, "Body in Numbers: Medizinische Visualistik. Strategien, Technologien." (unpubl. manuscript)

#### THURSDAY, FEBRUARY 3: "CTRL+SPACE"

<b>Required Readings:</b>
Lev Manovich, "Modern Surveillance Machines: Perspective, Radar, 3-D Graphics, and Computer Vision." In: Thomas Y. Levin et al. (eds.), <i>CTRL+SPACE. Rhetorics of Surveillance from Bentham to Big Brother</i> . Cambridge/Mass.: MIT Press 2002, pp. 382-395

Gilles Deleuze, "Postscript on Control Societies." In: Thomas Y. Levin et al. (eds.), CTRL+SPACE. <i>Rhetorics of Surveillance from Bentham to Big Brother</i> . Cambridge/Mass.: MIT Press 2002, pp. 317-321
Philipp E. Agre, "Surveillance and Capture. Two Models of Privacy." In: Noah Wardrip-Fruin/Nick Montfort, <i>The New Media Reader</i> . Cambridge/Mass.: The MIT Press, 2003, pp. 740-

**THURSDAY, FEBRUARY 10: RECONSTRUCTING THE DIGITAL PHOTOGRAPHY DEBATE**

<b>Required Readings:</b>
Hubertus v. Amelunxen, "Photography after Photography. The Terror of the Body in Digital Space." In: Hubertus v. Amelunxen et al. (eds.), <i>Photography After Photography. Memory and Representation in the Digital Age</i> . Amsterdam: OPA, 1996, pp. 115-123
Martin Lister, "Extracts from Introduction to the Photographic Image in Digital Culture." In Liz Wells ed., <i>The Photography Reader</i> . London: Routledge 2003, pp. 218-227
Peter Lunenfeld, "Digital Photography: Dubitative Images." In: Peter Lunenfeld, <i>Snap to Grid. A User's Guide to Digital Arts, Media, and Cultures</i> . Cambridge/Mass.: MIT Press, 2000, pp. 55-69
Lev Manovich, "The Paradoxes of Digital Photography. In Liz Wells ed., <i>The Photography Reader</i> . London: Routledge 2003, pp. 240-249
Kevin Robins, "Will Images Move Us Still? In: In: Martin Lister (ed.), <i>The Photographic Image in Digital Culture</i> . London: Routledge, 1995, pp. 29-
Florian Rötzer, "Re: Photography." In: Hubertus v. Amelunxen et al. (eds.), <i>Photography After Photography. Memory and Representation in the Digital Age</i> . Amsterdam: OPA, 1996, pp. 13-25

<b>Additional Reading (suggested):</b>
Lev Manovich, "The Automation of Sight: From Photography to Computer Vision." In: Timothy Druckery (ed.), <i>Electronic Culture. Technology and Visual Representation</i> . Denville: Aperture, 1996, pp. 229-239
Marshall McLuhan, "The Photograph." In: <i>Understanding Media. The Extensions of Man</i> . Cambridge/Mass.: The MIT Press, 1998, pp. 188-202

**THURSDAY, FEBRUARY 17: RECONSTRUCTING THE DIGITAL PHOTOGRAPHY DEBATE II**

<b>Required Readings:</b>
Lars Kiel Bertelsen, "It's Only a Paper Moon...Re-Reading APOLLO Photography in the Light of digital Imagery." In: Lars Kiel Bertelsen et al. (eds.), <i>Symbolic Imprints. Essays on Photography and Visual Culture</i> . Aarhus: Aarhus University Press, 1999, pp. 88-107
Gottfried Jäger, "Analogue and Digital Photography: The Technical Picture." In: Hubertus v. Amelunxen et al. (eds.), <i>Photography After Photography. Memory and Representation in the Digital Age</i> . Amsterdam: OPA, 1996, pp. 107-109
Peter Lunenfeld, "Art Post-History: Digital Photography & Electronic Semiotics." In: Hubertus v. Amelunxen et al. (eds.), <i>Photography After Photography. Memory and Representation in the Digital Age</i> . Amsterdam: OPA, 1996, pp. 92-97

**THURSDAY, FEBRUARY 24: ARITHMETIC IMAGES BETWEEN ART AND SCIENCE I**

<b>Required Readings:</b>
Mark B.N. Hansen, "Framing the Digital Image: Jeffrey Shaw and the Embodied Aesthetics of New Media" In: Mark B.N. Hansen, <i>New Philosophy for New Media</i> . Cambridge/Mass.: MIT Press, 2004, pp.47-92
Hans Belting, "Beyond Iconoclasm. Nam June Paik, the Zen Gaze and the Escape from Representation. In: Bruno Latour/Peter Weibel, <i>Iconoclasm</i> .

*Beyond the Image Wars in Science, Religion, and Art.* Karlsruhe: MIT Press, 2002, pp. 390-411

#### THURSDAY, MARCH 3: ARITHMETIC IMAGES BETWEEN ART AND SCIENCE II

##### Required Readings:

Marko Peljahn, "Makrolab." In: Thomas Y. Levin et al. (eds.), *CTRL+SPACE. Rhetorics of Surveillance from Bentham to Big Brother.* Cambridge/Mass.: MIT Press 2002, pp. 430-431

Peter Weibel, "Jeffrey Shaw: A User's Manual." In: *Jeffrey Shaw—a user's manual. From Expanded Cinema to Virtual Reality.* Karlsruhe: Edition ZKM/Cantz, 1997, pp. 9-20

Peter Weibel, "Toward the Construction of Context-Controlled Event-Worlds." In: Timothy Druckery (ed.), *Electronic Culture. Technology and Visual Representation.* Denville: Aperture, 1996, pp. 338-351

#### THURSDAY, MARCH 10: CAN THERE BE *BILDWISSENSCHAFT*?

##### Required Readings:

Duncan Davies et al., "Pictures, words, and numbers: sorting and indexing." In: *The Telling Image. The Changing Balance between Pictures and Words in a Technological Age.* Oxford: Clarendon Press, 1990, pp. 53-68

Peter B. Hirtle, "Image Management Systems and Web Delivery." In: Anne R. Kenney et al. (eds.), *Moving Theory into Practice. Digital Imaging for Libraries and Archives.* Mountain View/CA: Research Libraries Group, 200, pp. 119-134

#### THURSDAY, MARCH 17: IMAGE MANAGEMENT

##### Required Readings:

N. Hari Narayanan et al., "Visual Language Theory: Towards a Human-Computer Interaction Perspective." In: Kim Marriott et al. (eds.), *Visual Language Theory*. New York: Springer, 1998, pp. 87-120

Theodor N. Nelson, "Proposal for a Universal Electronic Publishing System and Archive." In: Noah Wardrip-Fruin/Nick Montfort, *The New Media Reader*. Cambridge/Mass.: The MIT Press, 2003, pp. 443-461

Allan Sekula "Reading an Archive. Photography Between Labour and Capital." In Liz Wells ed., *The Photography Reader*. London: Routledge 2003, pp. 443-452