

HUM 204
The Role of Perspective in History, Science, and
Design
Fall 2007

Lecture Meeting Times: Monday and Wednesday 12:30-1:50
Lecture Classroom: Kane 110

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Section Rooms and Times:

AA	Thursday 12:00-1:20	Denny 212
AB	Thursday 1:30-3:00	Electrical Engineering 042
AC	Thursday 12:00-1:20	Smith 107
AD	Thursday 1:30-3:00	Denny 315
AE	Friday 12:00-1:20	Communications 326
AF	Friday 1:30-3:00	Communications 326

Description:

Powerful, influential, and elegant, the discovery of perspective marks a turning point across the cultures of the world. By linking instruments with maps and concepts, its invention transformed the art and science of navigation while redrawing the relationship between people and their environment. In this course we will explore the role of perspective in history, science, geography, knowledge, and design.

Perspective techniques have allowed scientists to explore micro- and macro- levels of the world. They enable photographers to show some aspects of an image while omitting other parts of the

picture. In a digital and global age of omnipresent and proliferating images, perspective techniques inform how we see ourselves and others. At the same time, they raise questions about objectivity by demonstrating the constraints and limits on any form of vision, knowledge, or expertise. In this course students will discover the principles of perspective, their implications, and they will apply perspective techniques in the critique and design of artifacts, plans, images, and narratives.

Assignments and Grading:

Assignments have been created to help students understand and explore key themes in the class. They are also designed to help students develop practical skills in oral, written, and graphic communication skills. These assignments are due in section.

20%-Project Assignments:

This series of four assignments are designed to encourage students to explore specific themes of class through multiple modes of engaging with ideas and materials.

20%-Position Papers:

These four short papers are intended to strengthen student's understanding of how perspective works through the written world while giving students an opportunity for guided feedback on their writing. These assignments are due in section.

20%-In class free writes

Every lecture session will have a free write on the major themes of the lecture and reading materials. These papers will be graded on a "+", "√", and "-". "+" papers address the materials and demonstrate that the student has thought about the topic and can add novel insight. "√" demonstrate knowledge of the material. Students who write on the topic but don't address the materials, receive credit for the free write but receive the low grade of "-".

20%-A final take-home exam

The exam is designed to provide the students an opportunity to reflect on the experience of the class while synthesizing chosen themes into novel ideas. It will be a take home exam distributed on the last day of class and collected during the finals session.

20%-Participation in Discussion Section

Students don't learn until they are able to take ideas and make them their own. One way of doing this is through discussion in lecture and during discussion session. Students who receive the best participation grades are those who obviously care about the discussion section, contribute to discussion, listen and treat fellow classmates with respect, and come to section having read the materials and prepared to discuss them.

Materials:

Unless otherwise note, all readings can be found in a course pack available at Ave Copy Center, 4141 University Way NE, #3

In addition a few readings are available online and the URL's are listed on the syllabus.

Class Schedule:

Week 1

Themes for the week: Plato's cave, representation, visual perception, ecological approaches to perception

Lecture:

Wednesday September 26

Section:

Students in teams and find examples of illustrations of texts of the cave

Readings:

Plato, "Book VII: The Allegory of the Cave," from *The Republic*, Translated by Benjamin Jowett (Project Gutenberg, 1998). The most highly discussed text on the nature of representation in relationship to the world.

Week 2

Themes for this week: Ptolemy, Mapmaking, Gothic vision

Lecture 1:

Monday, 1 Oct

Lecture 2

Wednesday, 3 Oct

Readings:

Michael Camille, "Before the Gaze: The Internal Senses and the Late Medieval Practices of Seeing" from *Visuality from Before and Beyond the Renaissance*, edited by Robert S. Nelson (Cambridge: Cambridge University Press, 2000). In this chapter Camille introduces the prominent role of vision in Medieval culture and discusses the relationship of Medieval visual practices to the spirit and the body.

Michael Camille, "New Ways of Seeing Gothic Art," from *Gothic Art: Glorious Visions* (New York: Henry N. Abrams, 1996). Camille provides a concise overview of Gothic Art in relationship to the lived relationship of Gothic spaces.

Norman J. W. Thrower, "Early Maps of East and South Asia" and "Cartography in Europe and Islam in the Middle Ages," from *Maps and Civilization: Cartography*,

Culture, and Society (Chicago: University of Chicago Press, 1999). Norman thrower provides us with an easy to understand introduction to the early history of mapmaking. The chosen chapters discuss European mapmaking in relationship to the rich mapmaking traditions in Islam, Southern Asia, and the Far East.

Assignment: Project #1 - Map-making instruments

Put yourself into a time before it was possible to take a picture from a bird's eye perspective and imagine the view from above onto something you see from an in-scene perspective. How did people bridge the gap between what they imagined and what they could see?

Research early seeing instruments such as glasses, surveying instruments, early maps, compass, astrolabe, sextant – focus on one instrument that can be traced back to roughly a pre-1600 origin. This instrument is evidence for perspective thinking as a technique to assess space - Why was the instrument of your choice invented, who invented it, how did it evolve, and what new possibilities came with it. Your deliverable in a team of five is a 7minute slide presentation.

Week 3

Themes for this week: Renaissance, optics, architecture, perspective projection

Lecture 1

Monday, Oct 8

Lecture 3

Wednesday, Oct 10

Readings:

Wolfgang Lefevre (Ed.): *Picturing Machines 1400-1700*; 1995, MIT Press. Chapter 6: Renaissance Descriptive Geometry: The Codification of Drawing Methods (pp.175-208), Chapter 7: The Emergence of combined orthographic projections (pp.209-244), Chapter 8: Projections Embodied in technical drawings: Dürer and his followers (pp.245-275). The three chapters give a detailed account of the development of perspective drawing techniques during the Renaissance and traces their application in architectural and engineering plan-making.

Robin Evans: *The projective cast: Architecture and its three geometries* (1995)

Cambridge, MA: MIT Press. Chapter 4 – Piero's heads (pp.123-177). Evans reviews the implication of the new perspective drawing practice on the Renaissance understanding of space and the emerging distinction between constructed and natural geometry. He embarks in this study exploring the work of Piero dellaFrancesca, one of the central, yet oftentimes overlooked figures in the development of perspective representation.

Assignment: Project #2 - Drawing from imagination

Pick a perspective photograph of an object or building and draw it from another view – put yourself in an imagined point of observation and estimate how the scene depicted in the photograph would look from that location. Your deliverable is a print out of the photo plus a perspective drawing of the depicted scene from another point of view. This is an individual project.

Week 4

Themes for the week: wonder and wander, maps and conquest, horizons and the limits of perception

Lecture 1

Monday, October 15

Lecture 2

Wednesday, October 17

Readings:

Voltaire, *Candide*

(found at <http://www.literature.org/authors/voltaire/candide/>)

One of the most widely read literary works in the history of Western thought, Voltaire offers the character Candide's wanderings and tribulations as a biting satire of the philosophy of optimism, a discourse on the nature of evil, and, ultimately, a recommendation on the importance of cultivating one's immediate environment. (Please note that this reading is only found online, not in the reader).

J. B. Harley, "Chapter 2: Maps, Knowledge, and Power" and "Chapter 3: Silences and Secrecy: The Hidden Agenda of Cartography in Early Modern Europe," from *The New Nature of Maps: Essays in the History of Cartography* (Baltimore: Johns Hopkins University Press, 2001) 54-107. These two essays provide a needed perspective on our study of maps. Harley examines the how maps have been used to codify perspectives of seeing the world and then used for justifying existing relationships of power.

Assignment: Paper #1

Write a three-page paper (double spaced) that compares J.B. Harley's treatment of maps with Norman Thrower's (who we read in week 2). What do you think each scholar is saying about maps? Please use an essay style that presents a thesis, develops the thesis, and then summarizes the argument in the conclusion.

Week 5

Themes for this week: Romantics, travel, possession and knowledge, colonialism, catalogues and guides

Lecture 1
Monday, October 22

Lecture 2
Wednesday, October 24

Readings:

Charles Darwin, “Chapter 1” and “Chapter 23” from *The Voyage of the Beagle* (London: Henry Colburn, 1839). This collection of writings from Darwin’s immensely important voyage around the world, where he gathered the data necessary for his theory of evolution, offers an elegant lens to view the relationship between the rise of ethnographic consciousness, the role of colonial interests in knowledge, and detailed observations of place strung together through the organizing principle of the wandering subject.

Wolfgang Schivelbusch, “Chapter 3: Railroad Space and Railroad Time,” “Excursus: The Space of Glass Architecture,” and “Chapter 4: Panoramic Travel,” from *The Railway Journey: The Industrialization of Time and Space in the 19th Century* (Berkeley: University of California Press, 1977) 33-69. *The Railway Journey* established Schivelbusch as one of the most sensitive chronicler of how technologies change human experience. His explanation of the “panoramic mode” of travel, masterfully demonstrates how the speed of industrialized transportation technologies challenged the way humans saw and made sense of the world.

Assignment: Project #3 – New and unknown territories – What lies ahead?

Start with a map or description of a place you have not visited and draw the in-scene view from a particular place. Put yourself into this spot and imagine how you would navigate your way to destination?

Pick and discuss the role of landmarks, found ones, and man-made ones, and discuss aspects of navigation or orientation that are related to these landmarks. Think about different modes of seeing - For example, you may want to think about what is a landmark when you travel by train; what is a landmark when weather conditions prevent visibility? In a team of 5, your deliverable is a 7-minute slide presentation.

Week 6

Themes for this week: The advent of modernism, plans and drawings, scale, envisioning the invisible

Lecture 1
Monday, October 29

Lecture 2
Wednesday, October 31

Readings:

Stephen Kern, "Introduction," "The Nature of Time," and "The Nature of Space" from *The Culture of Time and Space* (Cambridge, Mass.: Harvard University Press, 1986). This very important book remains the most comprehensive intellectual and cultural history of the role of new experiences of space and time in the development of literary and artistic modernism.

Ed Hutchins: *Cognition in the Wild* (1995); MIT Press.

Chapter 2: Navigation and Computation (pp.49-116), Chapter 3: The implementation of contemporary pilotage (pp.117-174)

Ed Hutchins' book is an account of ethnographic studies exploring the cognitive skills and collaborative work required to navigate a large ocean vessel. In these two chapters he explores the differences and similarities between Micronesian and Western navigation techniques – a superb study of how space, time, and reasoning, aided by the use of sophisticated perspective-taking instruments, plots a passage through complex territory and maps out sightings-to-be-expected in the space ahead.

Assignment: Paper #2

Write a double spaced three page creative account of a character's change in the personal experience of time and space due to changing techniques of navigation or the introduction of new transportation and communication technologies. Your story will be graded on coherence, writing skills, creativity, and the use of concepts from class.

Week 7

Themes for this week: Mechanical objectivity, photography and film, structuralism, ethnography and observation

Lecture 1

Monday, November 5

Lecture 2

Wednesday, November 7

Readings:

Lorraine Daston and Peter Gallison, "The Image of Objectivity," *Representations*, No. 40, Autumn 1992, pgs. 81-128. Daston and Galison use a detailed examination of physiological and anatomical atlases to argue that the rise of modern social systems called for new "moral economy" of knowledge that changed how knowledge was represented as well as who was the best authority for knowing.

Mary Ann Doane, "Temporality, Storage, Legibility: Freud, Marey, and the Cinema" and "Zeno's Paradox: The Emergence of Cinematic Time," from *The Emergence of Cinematic Time: Modernity, Contingency, the Archive* (Cambridge, Mass.: Harvard University Press, 2002). The chapters we've chosen from this impressive study explore

how proto-cinematic techniques paved the way for “cinematic time” by developing a seemingly permanent record of fleeting moments and influenced philosophical debates on the nature of time by providing a model for how temporal continuity could be provided by the rapid procession of still frames. This book isn’t always an easy read but pays off well for those who persevere. (To be distributed later)

Assignment: Project #4 - Cinematic Space

Draw a map from a movie. Pick a challenging movie and explain why you picked this particular movie for the map-making exercise. The deliverable is the map and a 1-page (double spaced) write-up as summary of the relationship between map and movie: Why is this map special, and why did you pick this particular movie. This is an individual project.

Week 8

Themes: Late modernism and the eve of the post-modern, large projects, cybernetics and systems theory, simulation

Monday, November 12
(No school, Veteran’s Day)

Wednesday, November 14
(Phillip gone)

Modernism III

At the eve of Postmodernism

Large projects post WWII and how they required an adjustment of view.

Readings:

Ludwig von Bertalanffy, “The Meaning of General Systems Theory” in *General Systems Theory: Foundations, Development, Applications* (New York: George Braziller, 1968) 30-54. A clear and concise introduction to general systems theory and cybernetics by one of its main theorizers.

Norbert Weiner, “Chapter 1: Cybernetics in History” from *The Human Use of Human Beings: Cybernetics and Society* (New York: De Capo Press, 1988). Norbert Weiner initially developed his theory of cybernetics as a tool of war. In this study he explores the more humane applications of cybernetics by showing how cybernetics has been used through history.

“The Return of Ant-Man” from *Tales to Astonish*, #35. In this story Dr. Henry Pym develops a cybernetic helmet to communicate with ants as he uses his previous invention of a shrinking formula to shrink to the size of an ant.

One of the most interesting manifestations of cybernetics in popular culture, this little story also suggests how cybernetics uses the distributed agency of an ant colony to explore new perspectives of space. This Silver Age super hero comic is 13 pages of paneled pleasure.

Week 9

Themes for this week: Postmodernism, the violence of observation, self-forming systems

Lecture 1

Monday, November 19

(Phillip Gone)

PoMo

Lecture 2

Wednesday, November 21

Self-forming Systems

Thanksgiving Break

November 22 and November 23—no sections!

Readings:

Zygmunt Bauman, “A Sociological Theory of Postmodernism,” from *The Bauman Reader* (London: Blackwell, 2001) 173-188. Bauman’s work on the post-modern is insightful and readable. In it he clearly lays out how postmodernism is different than modernism.

Jean Baudrillard, “The Precession of the Simulacrum” from *Simulacrum and Simulation* (Ann Arbor: University of Michigan Press, 1995). This is one of the most read examples of postmodern thinking and provides an interesting if challenging perspective on the relationship of postmodernism to simulation and ethnographic thought.

Francisco Varela, “Introduction” and “On Machines, Living and Otherwise” from Humberto Maturana and Francisco Varela, *Autopoiesis and Cognition: The Realization of the Living* (Dordrecht: D. Reidel Publishing Company, 1972). This is the first extended treatise in which Biologist Maturana and philosopher Varela develop their theory of self-forming systems known as autopoiesis (Ancient Greek for “self creating”). Autopoietic systems produce themselves by continually distinguishing themselves from their environment. As such, they provide an interesting model for how new things happen in a world that is so intimately linked or connected that there appears to be no outside. Autopoietic systems theory uses many of the assumptions of postmodernism as it tries to explain how things happen *despite* the loss of a firm outside perspective from which to explain and analyze these happenings.

Assignment: Paper #3

You are the professor for HUM 204 in the year 2010. In two double spaced pages, define the term autopoiesis and show how autopoiesis builds on but is significantly different than open and closed systems theory as described by Bertalanffy. Your audience will be the students who take this class in the future—so don't assume prior knowledge! Your explanation will be graded on clarity, ease of reading, and your understanding of the concepts.

Week 10

Themes for this week: Ecological perception, participatory ethnography, distributed agents

Lecture 1

Monday, November 26

Lecture 2

Wednesday, November 28

Ecological Perception,

Observation/Ethnography

Readings:

Gregory Bateson, "Introduction" from *Mind and Nature: A Necessary Unity* (New York: E.P. Dutton, 1979). In this short introduction to his major monograph, anthropologist, cybernetician, and free thinker, Gregory Bateson develops his ideas on ecological thought. Bateson's major project develops an intellectual perspective that goes beyond understanding how organisms and environments are connected to recognize the differences in the "patterns of connection."

Gibson, J.J. :*The ecological approach to visual perception* (1979)

Boston: Houghton Mifflin. Introduction, Chapters 1-3 (The animal and the environment; Medium, substances, and surfaces; The meaningful environment) (pp.1-44), Chapter 5 – The ambient optic array (pp. 65-92), Chapters 7-8 (The optical information for self-perception; The theory of affordances) (pp. 111-143), Chapter 11, 12, and 13 (The discovery of the occluding edge and its implications for perception; Looking with the head and eyes; Locomotion and manipulation) (pp. 189-237). Gibson illustrates the implications of a systemic, ecological perspective into the world as environment. It weaves fundamentally new concepts of viewing and understanding around questions such as 'Why do we move through our environment in order to see? How do we know that something cannot see must be there? – These are a few example around which Gibson develops his ecological approach to how perspective vision in motion informs locomotion and manipulation; the very purpose why we see.

Assignment: Paper #4

Pretend that you write book reviews for the New York Times Book Review and they have just asked you to review J.J. Gibson's book, *The Ecological Approach to Perception*. You have 750 words to explain to your readers what the book is about, how Gibson argues his points, how successful he is. Review copies of the New York Times Book Review (found in the library, on line, and in newspaper and magazine stands).

Week 11

Themes: the future of perspective, the role of the body in relationship to informational societies,

Lecture 1

Monday, December 3

Lecture 2

Wednesday, December 5

Readings:

Rich Doyle, "LSDNA: Consciousness Expansion and the Emergence of Biotechnology" from *Data Made Flesh: Embodying Information*, Co-edited by Robert Mitchell and Phillip Thurtle (New York and London: Routledge, 2003). An intriguing essay that uses the development of drug culture and biotechnology during the 1960s and 70s exemplified social changes from "messages" (transmitted through the act of telling) to the pragmatics of experience (generated by the experience of shared codes and contexts).

Michael Hensel, "(Synthetic) Life Architectures: Ramifications and Potentials of a Literal Biological Paradigm for Architectural Design" and Michael Weinstock and Nikolaos Stathopoulos, "Advanced Simulation in Design," from *Architectural Design, March/April 2006: Techniques and Technologies in Morphogenetic Design*. These two articles demonstrate how simulation and ecological thinking offer new visions of built environments and new techniques for constructing them.

Take Home Final handed out on the last day of class and due on Finals Day, December 13, at 10:00 AM.