

Lecture outline for 1<sup>st</sup> session: What is technology?

A. Some dictionary definitions of “technology,” none of which are very helpful.

B. My colleague David Mindell defines technology as “the constellation of tools, machinery, systems, and techniques that manipulate the natural world for human ends.” This comes closer to Ruth Cowan’s definition of technology as “tools to control their environments.”

As such, technology is not separate from culture but rather an integral part of it. It is thus influenced by all the human beliefs, ideologies, traditions, social organizations, and behaviors that comprise culture. And cultural components themselves are always changing.

C. Ways of thinking about technology in historical perspective:

1. Technology as the production of knowledge and development of know-how.

Example: the evolution of the milling machine [see Battison article]  
By and large, technological change is incremental in nature.  
Revolutionary developments are unusual.

Example: steam locomotives: from Planet class to the 4:4:0 [see J. H. White’s books]

Example: the automobile: from horseless carriages to the Model T

2. Technology as a social force: the socio/economic impact or implications of technology.

Example: Lynn White’s stirrup thesis about the origins of feudalism.  
The problem of technological determinism [see Marx and Smith, Does Technology Drive History?]

Unanticipated consequences: the auto and environmental pollution

3. Technology as a human/social product: the idea that social/political forces an influence or shape the direction and forms that technologies take.

Example: military enterprise and technological change: the development of interchangeable parts manufacturing

Example: Langdon Winner on Robert Moses [cf. MacKenzie]

Example: Thomas Jefferson's agrarian ethos vs. Alexander Hamilton's state-oriented approach to economic/technological development.

4. Technology as a social process: context is important. But what about Latour's "collective"? [see Smith and Clancey, p. 24]

D. Other perspectives from the readings:

--Nine Lerman: "problems with skill" (S&C, pp. 15-17)

--Carroll Pursell: "masculinity and technology" (S&C, pp. 17ff.)

--Bruno Latour: "The proliferation of hybrids" (S&C, pp. 21ff.)