

Kellner, Douglas, and Steven Best. (2001). *The Postmodern Adventure: Science, Technology, and Cultural Studies at the Third Millennium*. New York: Guilford Press. A critique not only of post-modernist celebrations of science and technology, but also a critique of wholesale rejections of science and technology.

Marcuse, Herbert. (1955). *Eros and Civilization: A Philosophical Inquiry into Freud*. Boston: Beacon Press. Marcuse brings Freud and Marx together and examines ways in which contemporary society deals with desire.

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Marcuse, Herbert. (1978). *The Aesthetic Dimension*. Boston, Beacon Press. Marcuse's argument that art can transform how people see the world, and offers help in imagining new and better possibilities.

CRITICAL THEORY

SEE *Critical Social Theory*.

CULTURAL CRITICISM

SEE *Anglo-Catholic Cultural Criticism*.

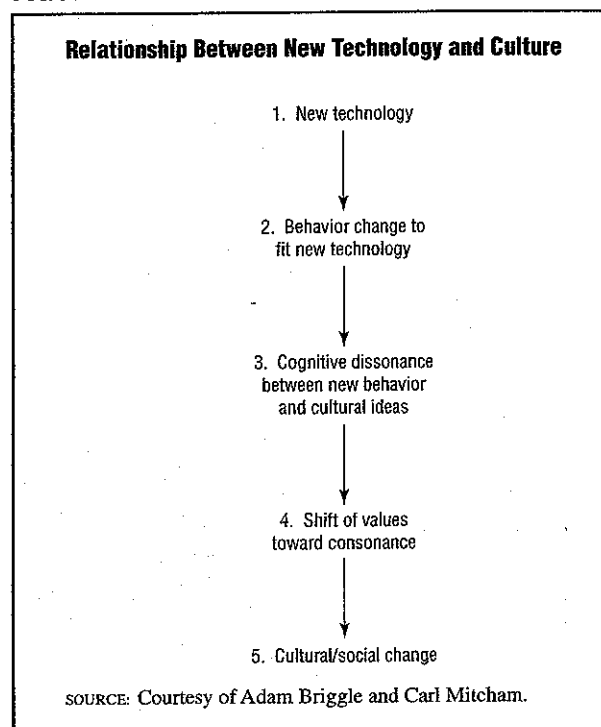
CULTURAL LAG

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The U.S. sociologist William F. Ogburn (1886–1959) developed the concept of cultural lag, which occurs when unequal rates or degrees of change between interdependent parts of culture leads to “maladjustment” (1922). According to Ogburn, as new inventions are introduced into society, a maladjustment occurs and a period of adjustment is required. Most often these inventions are technological in nature, and are part of what he termed “material culture.” However, Ogburn noted that “non-material culture” can also drive change. For example, he cites India in the early years of Buddhism as a case where religion was driving change in other areas of culture (1964).

Ogburn's classic description of technologically-driven cultural lag was the period required for society to adapt to the speed of the automobile (1964). It took some time for the social institutions and customs of road building to adapt to the ability of new cars to travel much faster than horses and older car models. A more pressing example is provided by the advent of nuclear

FIGURE 1



weapons, which represent an enormous leap in scientific knowledge without a complimentary advance in political institutions capable of regulating and using that knowledge wisely. Another example is provided by the rapid advances in biomedical technologies and the ability of institutionalized ethics committees, such as Institutional Review Boards (IRBs) and Institutional Biosafety Committees (IBCs), to adapt to those changes and make wise decisions. The depletion of natural resources, especially oil, represents a broader interpretation of cultural lag, where changes in the material environment may outpace the cultural response to those changes.

Numerous other cases exist where science and technology have advanced more rapidly than the spiritual, social, or political aspects of culture. Indeed, the anthropological studies collected by Edward H. Spicer (1952) and H. Russell Bernard and Pertti J. Peltó (1987) document examples of a relationship that Bernard and Peltó simplify as shown in Figure 1. Such maladjustment can prove socially harmful.

However, the concept of cultural lag must be interpreted and applied carefully in order to avoid dubious assumptions about progress. First, it must be recognized that culture can also lead rather than follow. Many historical analyses of how modern science and technology arose in Europe after the 1500s, such as those by Max Weber (1904), Lynn White, Jr. (1978), and others, have

argued that cultural change preceded technological change. Second, it need not follow that "lagging" aspects of culture must simply be altered in order to "catch up" with more rapidly changing elements. If applied interculturally, the concept can also promote Eurocentric assumptions about "underdeveloped" parts of the world, and lead to irresponsible transfer and application of technologies.

Several evaluations of cultural lag exist in terms of its ability to describe and predict cultural change (Brinkman and Brinkman 1997). More important, however, is the need to deconstruct any bias toward an inadequate notion of *progress* within the metaphor of cultural lag. It is intuitive that various parts of culture change at different rates and thus no longer fit together smoothly. Yet this does not necessarily mean that one part now "lags behind" another. The metaphor of *cultural lag* easily connotes the "failure" of different cultures or parts of culture to adjust to change, as if there were no agency or choice outside of simply running along the treadmill of material change.

In other words, as Alvin Toffler argues, cultural lag needs a balancing term of "future shock," which describes "the shattering stress and disorientation that we induce in individuals by subjecting them to too much change in too short a time" (1970, p. 4). Building directly off of Ogburn's concept, Toffler explains, "The concept of future shock . . . suggests that there must be balance, not merely between rates of change in different sectors [of society], but between the pace of environmental change and the limited pace of human response. For future shock grows out of the increasing lag between the two" (p. 5).

He makes the argument that rapid change is neither indisputably good nor out of one's control to shape and sometimes slow down. The future can arrive too soon for society's own good. This highlights the central idea within cultural lag of proportionality, equilibrium, and harmony (the right adjustment) among the parts of culture. As Toffler argues, "The only way to maintain any semblance of equilibrium . . . will be to meet invention with invention—to design new personal and social change-regulators. Thus we need neither blind acceptance nor blind resistance, but an array of creative strategies for shaping, deflecting, accelerating, or decelerating change selectively" (p. 331). Achieving this selective change is not a simple, technical matter of "catching up," but rather a series of decisions about the meaning of the good life and the ideal society.

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SEE ALSO *Double Effect and Dual Use; Science, Technology, and Society Studies; Social Theory of Science and Technology; Unintended Consequences.*

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CYBERCULTURE

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In a restricted but popular sense, cyberculture denotes the hacker subculture along with various social and artistic manifestations; as such it references feedback loops, computer slang, video games, the Internet, hypertext, virtual communities, and more. In a wider and more argumentative sense, cyberculture refers to contemporary culture in its totality, insofar as it has been