# The Social Meanings and Cultural Horizons of Technology*

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**Abstract**

A particular technology can be interpreted or studied in terms of two cultural dimensions: its social meanings and its cultural horizon. Both, the social meanings attached to a given technology and the cultural horizon in which it is embedded play an important role in technology design, development and use.

## 1 How much do you know about technology?

1. Which of the following statements is accurate of technology?

   a. Technology is always the product of rational technical imperatives.
   b. Technology is always designed by autonomous and objective experts.
   c. Technology always embodies various social and cultural meanings.
   d. Technology is always the product of applied science.

2. The cultural horizon of a given technology refers to:

   a. the technical and instrumental rationality of technology.
   b. the set of assumptions about social values that shape technology.
   c. the social representations and/or depictions of a given technology.
   d. the set of scientific values embedded in a given technology.

3. Which of the following concepts refer to the increasing tendency to use knowledge, especially scientific knowledge, in the context of interpersonal relationships, with the aim of achieving greater control of the world around them?

   a. Technology
   b. Rationalization
   c. Secularization
   d. Technocracy

4. To examine and fully understand technologies from other cultures sociologists must avoid

*Version 1.1: Sep 7, 2011 11:26 am -0500
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a. cultural relativism
b. ethnocentrism
c. rationality
d. refrlexivity

## 2 Expected Learning outcomes

At the end of the learning module participants should be able to

1. define concepts such as technology, social meanings, cultural horizon, ethnocentrism, cultural relativism and rationalization.

2. recognize and demonstrate that technology is not simply the product of rational technical imperatives nor the making of autonomous, unbiased, impartial and objective experts.

3. distinguish between the cultural dimensions of technology, namely its social meanings and its cultural horizon.

4. recognize and demonstrate that different social agents or groups, often coming from different cultures, construe or assign different meanings to the very same technology.

5. recognize and demonstrate that any given technology embody, in the design itself, diverse social meanings and cultural assumptions about social values, worldviews, ideologies, discourses, beliefs, and social norms.

6. examine and evaluate technologies from the perspective of cultural relativism while avoiding ethnocentrism.

## 3 Technology and the Appreciation of Cultural Diversity

To appreciate cultures around the world we must first acknowledge cultural diversity. Cultural diversity refers to cultural variability between and within societies, meaning that societies around the globe differ culturally. Societies vary in terms of their norms, values, beliefs and practices or conducts. Yet, they also vary in terms of their material culture. Material culture refers to artifacts, objects, and resources that people make and use to define their culture and carry out diverse activities. That includes homes, paper, pencils, buildings, crosses, bridges, clothes, etc. An important aspect of material culture, as the previous list suggests, is then technology. The term technology is often used to refer to tools, machines and equipment, including computers and like devices. Sociologists and other social scientists, however, use a broader definition that includes social relationships dictated by the technical organization and mechanization of activities, for example, the technical organization of work and bureaucracies.

Again, technology defined broadly or not, is culture. Hence, to acknowledge cultural variability is to affirm that cultures vary in terms of their material culture and in terms of technology. Not only do different societies produce different technologies, even to do the very same thing, but they also use imported technologies—the very same technology—differently, according to their specific culture. Technology thus represents an excellent window from which to study, understand and appreciate cultural diversity. The purpose of this module is to provide some insights into the ways in which technology reflects and even embodies culture, which should be helpful in appreciating other cultures and their technologies.

## 4

## 5 The Social Meanings and Cultural Horizons of Technology

From a sociological perspective, technology is not simply the product of rational technical imperatives, the making of autonomous, unbiased, impartial and entirely objective experts. Rather, any given technology results from a series of specific decisions made by particular groups of people in particular places at particular times for their own interests and purposes. These decisions are made either in the context of conflict or in

the milieu of cooperation. Either way, technologies bear the imprint of people, their social relations and their culture in a given place and time.

A good example is the Canadian rape kit, formally called the Sexual Assault Evidence Kit (SAEK). The kit resulted from a series of specific decisions made in the seventies by particular groups of people based on their views and concerns regarding sexual assaults. The artifact embodies a diversity of mostly legal, scientific and forensic meanings and understandings coming from various relevant groups such as community-based feminists, law enforcement and legal professionals, scientists, and medical experts. The SAEK, a technological procedure, a protocol, was an amalgamation of their concerns and interests and was, in the end, intended to better address the health care needs of sexually assaulted women and to improve and standardize the criterion and procedures for the gathering and compilation of medical forensic evidence. Parnis and Dumont (2006) describe it as follows:

> *The resultant material artifact, the SAEK, was/is a sealable box consisting of instructions and the provisions necessary for the collection of specific biological samples, physical specimens, and information concerning the assault and the assaulted woman's medical history. The items contained within the kit were designed primarily to help establish proof of perpetrator identity (e.g., collection of available sperm/semen for DNA testing), the time frame of the assault (e.g., color of bruising as documented) and force (e.g., documentation of vaginal tears) as means of independently corroborating a victim's account of the assault (77)*

In addition, Parnis and Dumont (2006) demonstrate that the SAEK has, embedded within its design, representations rooted in scientific rationality, technical neutrality and rape mythology.

Furthermore, they show that the meanings and representations embodied within the design and lived out across the utilization of the SAEK can be seen as a blend of the bona fide juridical requirements of corroboration and validation and the personal and professional values, beliefs and prejudices of post-assault medico-legal specialists. The kit is also embedded in and embodies the application of scientific expertise and techniques to a non-science context for the systematic and objective determination of the facts of rape to be used in courts of law. As Parnis and Dumont show the SAEK is then the means by which a gendered social problem is drawn into a response model entrenched in values of technical rationality, where health experts become the technologists who collect the unprocessed data (specimens and samples) from which scientific conclusion may be made.

**The Sexual Assault Evidence Kit (SAEK)**

**Figure 1:** SAEK

The rape kit shows that the social and the cultural are entangled in any given technology. Technology is then a prevalent form of the embodiment of both culture and social relations. Here, we will focus on the technological embodiment of culture, how culture is enmeshed in a given technology. The starting point is that technology embodies culture in all its elements: values, beliefs, norms, ideologies, discourses, symbols, worldviews, and practices. Technology is then culture.

Consequently, technology, embodied culture, ought to be subject to interpretation like any other cultural artifact (Feenberg 1995). As such we should examine how culture determines both the meaning and content of technology and its uses and how technology, in turn, shapes culture.

A particular technology can be interpreted or studied in terms of two cultural dimensions: its social meanings and its cultural horizon (Feenberg 1995). Both, the meanings attached to a given technology and the cultural horizon in which it is embedded play an important role in technology design, development and use.

Technologies have social meanings, a symbolic and figurative content attached to it by various social actors and/or stakeholders. Put differently, different social agents or groups construe, signify, represent or assign different meanings to the very same technology. Often, these meanings are actually embedded, encoded and/or implanted in the technology itself. Technological objects thus embody and materialize multiple social meanings. Recall, for instance the various meanings attached to rape kits in Canada, including the significance given by criminal justice stakeholders to the confirmation of perpetrator identity, for example. The multiple meanings given to the rape kit, as already shown, were not extrinsic to the kit but actually make a difference in the nature and design of the object itself. Despite some differences most actors construe the SAEK as a reliable scientific tool useful in establishing legal truths regarding rape cases and sexual violence.

Let's consider other examples. Consider stereos and other devices used to listen to music. People give different meanings to these devices. For some people these devices denote entertainment, amusement or a hobby. For others these devices signify an opportunity to relax. Others think of these devices as technologies that allow them to appreciate music from all over the world. Others simply consider these devices as status symbols obtained through their purchasing power in the market. Others even confer to these devices emotional meanings resulting from nostalgia and memories. In short, different people attach different meanings to stereos and like devices.

Meanings are, of course, embodiments of culture. Csikszentmihalyi and Rochnerg-Halton's (in Borgmann 1995) found that in American homes stereos are preferred to performed music because recorded music stands as a promise of disburdenment and enrichment, the promise to provide music freely and abundantly. This promise in turn is part of a larger one, the promise of general liberty and prosperity–the very promise that inaugurated modernity. And both, liberty and prosperity are core values of American culture. Stereos embody those values. And the practice of listening to music mediated by that technology also reflects and embodies those values. Today, more advanced stereos than those examined by Csikszentmihalyi and Rochnerg-Halton plus ipods, ipads, cd players, mp3s and portable computers, all of which allows us to record, save, carry and listen to music anywhere, also embody and exemplify those very same American values.

The social meanings of technology are social in the sense that these meanings are collective, not individual constructions and representations. The meanings given to any technology are also social in the sense that they are contingent, which means that the social meanings of technology vary across time and space. One can find variations across different historical moments and one can also find cross-cultural variations in the meaning given to any technology.

A technology can also be examined or interpreted in terms of its cultural horizon. The cultural horizon refers to the set of assumptions about social values that inform and determine the design of technology (Feenberg 1995). Put differently, it refers to the culturally general assumptions that form the often unquestioned background to every aspect of social life, including technology design, development and use.

Today, and especially when it comes to technology, rationalization, is our modern cultural horizon. The essence of the rationalization process is the increasing tendency by social actors to the use of knowledge, especially scientific knowledge, in the context of interpersonal relationships, with the aim of achieving greater control of the world around them. Technology is often thought, and even designed, as a mean to obtain greater control of the world around us, including social life.

The SAEK, for instance, is entrenched in and embodies the application of scientific expertise and rational techniques to a non-science context for the systematic and objective determination of the facts of rape to be used in courts of law. To the extent that it was designed to achieve greater control of the criminal investigation and the proof of perpetrator identity the SAEK is then embedded in modern rationality. Certainly, the tendency of rationalization grew withmodernity, especially with the Anglo-Germanic modernity. The cultural horizon of most technology is then Anglo-Germanic in origin (Dussel 1998). The predominance of this European cultural horizon around the world, and its mark in most technologies, is the consequence of technological diffusion, often the consequence of imperial and colonial encounters, and of the expansion of capitalism and commercial exchange worldwide. Yet, technologies are not simply adopted but rather adapted to local cultures and circumstances. Those adapting the technology construe the technology differently from the original producers and users of that technology, assigning new meanings to the technology in question. But again, and despite adaptation and the allocation of diverse meanings to technology, rationalization remains the modern cultural horizon of most technologies around the world, from the level of design to the level of use and consumption.

## 6 Appreciating Technologies

So, if you want to appreciate technologies from other culture here's what you must do.

1. Identify and name the various stakeholders or groups of people that designed, produced, developed, tested and use the technology in question.

2. Identify and list the diverse meanings, positive or negative, that these different groups attach to the technology in question.

3. Identify the cultural horizon of the technology in question. That is, identify the culturally general assumptions that form the often unquestioned background to every aspect of social life in that particular culture, including technology design, development and use in that culture.

The cultural horizon may or may not be rationalization. Yet, it is always a good place to start. Answering these questions may give you needed information for a better appreciation of technologies from other cultures. Of course, if you use it to appreciate technologies in your own culture it may reveal very interesting facts about your own culture. Try it too!

## 7 Some tips to appreciate technology as culture

In examining technologies from other cultures you must also avoid ethnocentrism, the assumption that one's group is superior to other groups. For example, you must avoid thinking uncritically that technologies developed in your culture are automatically better or superior to technologies developed elsewhere. You must also avoid biases in favor of Western culture. That is, you must avoid thinking uncritically that European and American technologies are better and superior than technologies developed elsewhere in the world. Also, you must avoid the uncritical assumption that all Japanese technologies are superior to technologies developed elsewhere in the world.

Basically, you must avoid the deployment of prejudices, stereotypes and uncritical generalizations about other cultures.

Prejudices refer to preconceived judgments or opinions, often devaluing opinions, about other cultures based on uncritical and biased generalizations and stereotypes about that culture. An example of a prejudice is the common misconception of people that thinks that older people cannot handle computers.

Stereotypes are standardized and simplified conceptions of groups or people based on some prior assumptions. A common stereotype is that computer experts are all geeks or nerds.

To avoid the biased appreciation of technology you must examine technology from the perspective of cultural relativism, that is, you must understand other cultures, including their technology, in terms of that culture itself.

## 8

## 9 Exercises

*Exercise 1. Interpreting a High-tech shopping baskets.*

Read the following article from Trends in Japan(http://web-japan.org/trends/science/sci070327.html[1] ):

**Science & Technology** A SHOPPING REVOLUTION **IC Tags Speed Up Checkouts (March 27, 2007)**

[1] http://web-japan.org/trends/science/sci070327.html

**Figure 2:** One of the checkouts where IC tags are used (Jiji)

Some convenience stores, supermarkets, and other retailers are attaching integrated circuit tags to their merchandise. IC tags, which allow vast amounts of information to be read in the blink of an eye, have a variety of retail applications, including instantaneous checkouts and sophisticated inventory management. The use of this technology not only enhances convenience for the consumer but also boosts efficiency for retailers.

**Check Out by the Basket**

Imagine yourself at a convenience store. You pick out a sandwich, a cup of instant noodles, and a canned drink, put them in the shopping basket, and take the basket to the checkout counter. You hear a beep, and the total for your purchase instantly appears on the cash register display. In February 2007 major convenience store chain Family Mart tested a system that does just this at two of its stores in the Ikebukuro district of Tokyo.

The test, which was conducted under the guidance of the Ministry of Economy, Trade, and Industry, involved placing 2-cm-square stickers fitted with IC tags on the approximately 800 items carried by the stores. The stickers were attached at the company's production facilities, allowing all the items to be tracked en route to delivery at the stores. Then, when customers make a purchase, a sensor at the checkout counter scans the data on the products' IC tags and calculates the bill, eliminating the need to scan individual item barcodes and cutting customers' waiting time in half.

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### 9.1 Answer the following questions:

1. What does this high tech shopping basket tells you about Japanese culture?

2. What meanings are embedded in this Japanese technology?

3. According to this technology, what is of value in Japanese culture? What Japanese beliefs, symbols, ideologies and worldviews are embedded in these baskets? What lifestyles are associated to these baskets?

4. Is there something about this basket that makes it strictly Japanese? Or, Are these values found in other cultures around the world? Please, explain.

5. What would these shopping baskets mean to you?
6. What do you think is the cultural horizon of these baskets? Is it also rationalization? Why?
7. Can you think of other general cultural assumptions that form the often unquestioned background to every aspect of social life in Japan that maybe informed and determined the design of these baskets?

## 10 Assessment

Please, complete the following statements:
1. Something new I learned from this learning module about technology was . . .
2. Which was the most important concept that you learned from this learning module on technology and culture?
3. Which was the muddiest point you confronted while completing this learning module on technology and culture?

## 11

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## 14 Let's try it again. How much do you know about technology?

*Multiple Selection Exercises*

1. Which of the following statements is accurate of technology?

a. Technology is the product of rational technical imperatives.
b. Technology is designed by autonomous and objective experts.
c. Technology embodies various social and cultural meanings.

d. Technology is always the product of applied science.

2. The cultural horizon of a given technology refers to:

A. the technical and instrumental rationality of technology.
B. the set of assumptions about social values that shape technology.
C. the social representations and/or depictions of a given technology.
D. the set of scientific values embedded in a given technology.

3. Which of the following concepts refer to the increasing tendency among people to use knowledge, especially scientific knowledge, in the context of interpersonal relationships, with the aim of achieving greater control of the world around them?

a. Technology
b. Rationalization
c. Secularization
d. Technocracy

4. To examine and fully understand technologies from other cultures sociologists must avoid

a. cultural relativism
b. ethnocentrism
c. rationality
d. reflexivity

5. Associate the following concepts and their meanings:
____ Cultural horizon
____ Social meanings
____ Ethnocentrism
____ Cultural relativism
____ Rationalization
1. Symbolic and figurative content of technology
2. Assumptions about social values that inform and determine technology.
3. The assumption that one's group is superior to other groups.
4. Tendency to use of knowledge, especially scientific knowledge, in the context of social relations.
5. Understanding other cultures in their own terms.

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**14.1**

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[2]This media object is a downloadable file. Please view or download it at
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