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So, Where's the Renaissance?

Mark Arnold
California Polytechnic State University - San Luis Obispo

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SO, WHERE'S THE RENAISSANCE?
TOWARD A CHALLENGE OF
TRADITIONAL INTERPRETATIONS
OF TECHNOLOGICAL
DETERMINISM

Mark Arnold

Information piled deep. A guide for students in my courses that would give good examples of lecture material and augment lessons with fascinating tidbits that would entice viewers to dig ever deeper into the class. That was the goal six years ago when I began my Web site. One whole page (that much) of introductory material. Who am I (in 25 words or less) and a photograph of a much younger man on the beach taken during a job interview. A nifty background gave viewers the impression that I might have had something to do with newspaper writing backed a starkly symmetrical page that also carried my office location, telephone number and a link to my e-mail. An understanding of Unix made HTML approachable in the beginning along with making the storage of information possible for the nascent site.

As the site grew, material needed cataloging. A taxonomy needed development to assist with the construction of a Graphic User Interface, to allow easy navigation of the site. Programming for building the site progressed from HTML to Netscape Composer to Dreamweaver over the years. Other programs augmented the site's design and content. There were digital photographic manipulation and illustration programs to be mastered. Then there was video. In order to get video/film material on the Web site, selection of video download hardware/software, CD burning, streaming options, and playback capabilities needed consideration.

Pedagogical considerations required understanding. There were constant searches for material relevant to classes. Popular culture could provide some of the most relevant and absorbing material, but it was not enough to know that professionally produced video presentations for the class-

room gave concrete examples of class material, I had to know which presentations to use. Then there was interaction. What does the term immersion mean? How do the media work to produce effects? What does the computer mean to the presentation and interpretation of information? The site demanded a set of technological skills together with an understanding of art and design and a command of an underlying philosophy. Egad, I'm a Renaissance Man.

So, where's the Renaissance? Do we stand on the verge of an exciting world of thought and expression? Are we as Dorothy in *The Wizard of Oz* poised at a metaphorical door opening on a brilliantly flowering world? If correctly estimating the trends of the present is an exercise fraught with complexity, predicting the future is somewhat akin to epistemologically quantifying the meteorological effect of a butterfly's wing beat in China. According to an old issue of *Popular Science* published in the 60s, we should all be driving a car that doubles as a personal aircraft by now, video telephony is ubiquitous, and the first colony on Mars should be just setting up shop.

One approach to future-casting that seems to have an intuitive appeal is to examine the effects of technology. One oft-cited example is the automobile as having a profound effect on everything from the development of cities to individual sexuality. Does a technology determine the course of a culture? Scholars of technology have struggled with how to approach this question for at least the past 150 years. An accepted response to this intuitive cause/effect relationship dismisses the cultural effects of technology by stating that a culture develops to the point where a technology is needed in order to advance. The culture then develops that technology and any unforeseen effects are simply part of secondary processes. Simply stated technology does not make a culture, a culture makes technology.

One aspect of the culture/technology bond that stands out across disciplinary boundaries is communication technology, the media. Several scholars, such as Marx, Ellul, and Singleton, have examined the relationship between technology and culture. No discussion about culture today takes place without a series of references to the power of communication technology. A variety of methodologies designed to accurately estimate not only the trends in material goods, an essential aspect of the business world, but the effects of these changes on our understanding of the world, have been proposed in the last decade. From system theory's epistemology, "The present is the key to the past," to postmodern Delphi focus group analysis, future-casting has evolved from a parlor pastime to an important science.

Sociologists examine communication as a key to understanding social structures and interactions. Businesses look to Organizational Communication for answers to questions about efficiency. Computer engineers and psychologists delve into communication as a way to understand cognition. So important is this one aspect of human existence that the newest of academic disciplines is "Communication Study."

The technologies used for mass communication are rapidly evolving from printing technologies to television into something that may combine (converge) traditional communication technologies.

There is, however, something else; something that may supplant older technologies. The media have been acknowledged anecdotally for many years, and academically for slightly more than a decade, as having effect upon the actions, beliefs and values that make up our culture. Because of the growing body of theory related to the effects of media, an examination of communication technologies might provide fertile ground for an analysis of present and future trends in society and culture.

One way to answer the second question of this essay: "Are we on the verge of a new renaissance?" is to review previous times when culture advanced rapidly. In this way we can examine the relationship between technology and culture to see whether there is a correlation between communication technology and the rapid and widespread advance in philosophy, art and invention that mark the periods known by these advances.

The area between the Euphrates and Tigris Rivers provided a Fertile Crescent of agriculture more than 8,000 years ago. The people living in this region found the congenial climate, the presence of abundant water, and flood plain soils ideal for growing food. A shift in lifestyles from hunting and gathering to city building ensued. Concurrent with this shift was the invention of a tool. Tools allow for the manipulation of one's environment. This tool allowed people to record information. With a permanent record or receipt, one person who brought in five bushels of grain to a central repository, was assured of five bushels of grain (less fees, I'm sure) in times of need. The complexities of cities depend on accurate record keeping. These records were merely small impressions in a pat of clay, but cuneiform, one of the first abstract forms of writing, was the hinge for this process. With this system, information could be recorded and stored for long periods of time eliminating the need for perfect memories. The pats of clay could be taken from one area to another to disseminate their messages to others, and others could access the pats of clay at convenient times.

In time, writing progressed from an abstract record of physical things to a record of abstract ideas. This culminated in the establishment of law. The Code of Hammurabi marked the end of government subject to the whim of an individual and the beginning of codification of principles of conduct. And this is why the culture became known as the Cradle of Civilization.

Approximately 5000 years ago, Egypt's march to dominance led to a number of innovations. The development of a form of writing that would allow for more extensive concepts was the first of these innovations. Hieroglyphics would undergo several significant changes, as more complex concepts needed expression. Hieratic writing allowed rapid transcription of information but was used by priests and scribes to maintain power by the control of information. Demotic writing evolved as a response by the business classes to this problem.

Two additional inventions associated with communication were also significant. The invention of inks and papyrus proved to be a major contributor to written communication across distances. Once the symbols were placed on a light, easily rolled substance, they could be carried with ease throughout the kingdoms.

The greatest advance in communication technologies corresponded with the highest level this culture would attain. The Library at Alexandria provided scholars, the religious, and government access to information and ideas that spanned centuries of thought. These three cumbersome systems of writing carried the seeds of their demise in the very complexity that allowed the expression of vast knowledge. Ironically, if a simpler form of writing could be found, even more complex concepts could be expressed and contemplated. Phoenicia created an alphabet. This concept, used by the Greeks and Romans, accelerated the development of Western cultures.

If communication technology is essential to culture, we should be able to see effects in other cultures beside the West. Aztec, Inca, and Mayan peoples represent the highest cultural achievement in the Americas. Each of these had developed a form of writing. Each maintained their cultures through the recording of thought, history, and actions of their people. The Chinese of 5500 years ago invented a form of writing still used today. It had effects similar to that of the Cradle of Civilization. In 105 a.d. Tsai-Lun invented paper as an ideal surface for the recording, storage and easy transport of information. Pictographic writing could be converted from hand script to a wooden block that had the pictograph or a few pictographs engraved on top. By inking the block and then transferring the sign to paper, even the illiterate could “sign” for services or goods received. These refinements marked a new era in communication technology.

By 206 a.d., the Han Dynasty had created a system of roads expressly for the rapid dissemination of Court edicts. The logical continuation of a single sign, inked and printed was the full page printing block. A full page of text could be rendered on a block of wood that could be used and reused to produce many pages. However, another refinement was suggested by the fact that a page has two sides; therefore, two printings equaled twice as much information on the same piece of paper. A larger piece of paper and a single fold resulted in four pages. Even the largest sheet of paper can only be folded a finite number of times, but this still gives 32 pages of printed material. These pages could be stacked, and the creation of books had begun by the year 800 a.d.

During the Tang Dynasty, newspapers begin to flourish. The only impediment to the volume of material produced in a reasonable time was that the printing block for each page had to be carved separately before printing and folding. An enormous amount of work represented by the printing block would be discarded at the end of each printing. A Korean created individual pictographs from metal that allowed a more rapid form of printing to proliferate. By combining and re-combining the more than 40,000 characters of moveable type, the creation of a single block could be eliminated. Still, it was left to the Germans to combine all the pieces.

The Silk Road of the years around 1200 brought the East and West into contact. Gutenberg took ideas from the east and combined them with western ideas. In 1450, he combined movable type, paper, an efficient press, and the Western alphabet. What we know as The Renaissance began about 1500.

Even though we can establish a correlation between an advance in communication technology preceding a distinct period characterized by advances in philosophy, art and invention, we have yet to prove causation. Anecdotal evidence for the effect of the media on a culture existed for decades.

Propaganda, The First Media War (a.k.a. the Spanish American War) and, recently, the effects of extensive exposure to television, music videos and video games are continuously blamed for their negative effects on a culture. Pulitzer noted a positive effect of media as well when he pointed out where people turn for information after graduation from school. "The schoolmaster of the public," is carved above the entrance to the University of Missouri School of Journalism in order to impress the students on the responsibility they accept with a career in Journalism. Lasswell included the transmission of a culture's beliefs and values in his defining "Functions of the Media." Gerbner defined the long-term effects of the media with his Cultivation Theory, which states that media exposure, can and does produce an effect on values and beliefs beyond transmission.

Those who would state the effect of technology as a function of culture rather than culture developing effects as a function of technology can not have it both ways by saying that media is changing our culture while continuing to deny the effects of technology. Communication technology, the nuts and bolts of the media, does have an effect on a culture because the function of these technologies is to carry information, ideas, values, and beliefs. Significant improvement in communication technology is a predictor of significant cultural advance.

We stand today at a nexus so vast it has been said of new communication technologies that they are not the most important invention since Gutenberg's Press, they are the most important invention since fire. The Internet, Al Gore's claims notwithstanding, can be said to have begun in 1994. This is the date that 14.5 percent of the public used the Internet regularly. Curves of adoption of new technology note this percentage as crucial to an invention's long-term viability and acceptance by a culture. The Internet has many characteristics that existed prior to each of the periods of advancement noted earlier. These are: the recording and storage of information, thoughts and ideas that are accessible to others at a location remote in distance or time. In addition, the Internet is accessible on a worldwide scale that has no precedent, and it allows the instantaneous transfer of this information globally regardless of governmental censorship. But the Internet is only a transitional technology compared to what is soon to come.

The face of communication shifted from static words, images and sounds to dynamic presentations in the last century. Moving images, synchronized with sound presented a new paradigm in communication in that actors, stages and sets need not be present for the audience to receive and integrate theatrical messages by the audience. Communication, storage and retrieval of ideas became possible through images and sound as well as words. Decades could pass, and these images could affect a new generation of viewers.

The level of media effects increases with interaction by the audience. With interaction, the level of audience involvement increases rapidly. The ability of the audience to integrate, challenge, or dis-

cuss is overwhelmed by the volume of information being transmitted as well as the need to react to that information. Virtual reality technologies will offer all the advantages of older forms of media combined with a level of involvement that is so powerful that it is called “immersion” as audiences are immersed in the ideas, values and beliefs of the individual presentations. “Suspension of disbelief” becomes a quaint concept in comparison to immersion. Web sites that make use of all forms of pre-existing communication technologies are only the first trembling step in a new paradigm of computer assisted communication technology. Along with the responsible, reasonable use, these developments may very well culminate in the first worldwide renaissance. 

Mark Arnold is an Assistant Professor of Journalism. He is currently investigating the effects of “Virtual Reality media.”