AN UNBLINKING EYE: STEPS FOR REPLACING TRADITIONAL WITH VISUAL SCHOLARSHIP

Abstract: Little has changed in academic discourse since ancient studies were passed about on scrolls, but the changeover to a visual as well as textual scholarship is long overdue and the migration of text output onto the web changes nothing. What is needed in scholarship is a new medium and a new evaluation system for scholarly work and this new system is the focus of this paper.

INTRODUCTION

Many people date the present crisis in the academic exchange of information to the consolidation of publishing companies during the 1990s and early part of this century which resulted in astronomical increases in subscription rates and reduced readership and library subscriptions, but the roots of the crisis are to be found much earlier.

Many forget that the modern system of exchanging information and data about ones research and its use in classrooms is often said to date from the invention of the modern research article when English scientist Robert Boyle in the mid-17th Century, (Swales, 1990) in an era in which scientists, most members of scientific societies such as the Royal Academy of Science in England, frequently attended demonstrations of experiments and there heard short talks about the interpretation of the findings. Boyle and others, in the decade preceding the publication of the first research journal, *The Philosophical Transactions of the Royal Society*, 1655 (see Swales, 2004) sought to make it possible for those not in attendance to have the sense of having seen the actual experiment, which he labeled "virtual witnessing"[1] and thereby give any knowledgeable reader the essence of the scientific test of principles. The historical significance of such journals can easily be over-emphasized as in the author's field of sociology the oldest journals, those started by the creators of academic sociology (the *American Journal of Sociology* at the University of Chicago in 1895 and *L'Annee Sociologique* by Emile Durkheim in France) are barely over a century old. However, in all of academia since the rise of Big Science after World War II, the volume of an academic's productivity has been tied to the number of these articles published. Thus, that number became simply the easiest metric for assessing a university faculty member's *productivity* (*quality* being something else, and often left to the mysteries of "peer review" at the journal itself). Obviously, such a system depends crucially on one moving part: peer review must function vet all submissions for quality and thus to weed out the scientifically, theoretically or methodologically unsuitable research report. However, as with college grades and so much else in our society, there was an inevitable inflation of numbers and a concomitant decline in quality. In the wave of growth engendered by Big Science, following the model of the Manhattan Project to NASA and beyond, the ramping up of demand for faculty and money for universities in the 1960s and 1970s had a corrosive effect on graduate education and eventually the peer review system. The result today is that it is possible to publish parodies of real scholarship in some areas without the joke ever being detected by the review process (to say nothing about the incestuous and old-boy politics of trading positive reviews and so forth) and publication in top journals in many fields, particularly the social sciences and humanities, may mean many things[2].

Meanwhile, outside the cloisters of the academy, the world changed and our methods of looking at them and studying them did not. Radio became the dominant form of entertainment early in the last century followed by television, cable and the Internet and yet the mechanism for scholarly study has changed only in that rather than having monks illustrate manuscripts in the scriptorium for scholars, we now use word processors to put them up on web sites (often owned by publishers charging fees) and PowerPoint to make them into classroom graphics. Great significance is accorded to peer-reviewed work and non-peer-reviewed work is treated not only with distain, but almost pejoratively (after all, it represents evidence of opportunities for *real* research). Rear guard actions such as banning lap top computers or PDAs from classrooms only obscure the fact that even the public media have begun to morph into a more visual mode of information transmission. Compare the cable news outlet visual design to that of

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[1] In which Boyle foreshadowed the modern simulation term "verisimilitude" by over three hundred years.

[2] One has only to review the bogus article by Alan Sokal in the 1996 issue of *Social Text* on a "hermeneutics of quantum gravity" to see where all of this leads. Source: http://www.physics.nyu.edu/sokal/

the network news program (most effectively done without the sound) and it becomes obvious that the cable news outlet has as many as a half-dozen inputs of information running simultaneously on the screen, including breaking news, elaborations or updates of earlier stories, stock quotes, weather and advertising for upcoming programs. Meanwhile network news, operating from a paradigm invented sixty years ago (putting pictures to a radio news program) struggles to keep a minimum audience as the remaining viewers are not being replaced as they die[3], despite the almost non-stop advertising of prescription drugs and health aides. The problem is that the world of education is operating on a model even older than that of network television.

Where this points for those of us in the knowledge discovery and marketing business is the need for not only a different system for distributing knowledge, but a new paradigm of information that reconceptualizes the process and also bridges the phony gap between the visual and the scholarly. The idea is to create a new system for scholarship and a new system for evaluating information and such is the goal of this paper.

THE VALUES IN THE NEW SYSTEM

It would be important that the *norms of science* (not of intellectual property and publishing) be at the core such a new system. Among these values would be the following:

OPENNESS One thing which has hurt all areas of the sciences from the physical and biological to the social sciences has been the increasing tendency toward the hoarding of information behind copyrights and intellectual property stockades. The result of this is that relatively innocuous findings are now copyrighted by individual authors, but more meaningfully publishing house and that bit of knowledge is fiercely protected by batteries of lawyers buttressed by researchers who do nothing but search various media for possible copyright violations. One wonders how long it would have been before Europe knew that the earth was not the center of our universe had Copernicus and Galileo copyrighted their work and sued those who tried to make use of it (forget the possibilities had the Church found a way to copyright their work and prosecute all who would have used it). This is one of the canons of science and it is suffering greatly from the conceit and obsession of modernity: everything is property and confers property rights on someone and from any human behavior someone should profit. The idea of science itself may not survive this value shift.

COLLABORATIVENESS At present, most scholarly work tends to be unidirectional with wisdom being created at the top and flowing downward and with responses limited only to those with credentials and access. In effect free speech is limited to those with certain degrees and appointments or who own a printing press. While Wikipedia as an information source has had rocky moments and is still occasionally the target of people wishing to taint the information pool, the addition of even a minimal level of article vetting has meant that the quality of the information has gone up and problems and mischief of many sorts have been greatly reduced. With Wikipedia pointing the way, in the new scholarly environment the autodidact would have a place as well as the credentialed institutional scholar. Instances of those who make discoveries by breaking out of the conventionalism of academic disciplines abound. While hardly a role model of archaeological ethics, German businessman Heinrich Schliemann, enraptured by stories of Helen of Troy and the Greek wars read to him as a boy (admittedly with great destruction of the site) found the ancient city of Troy while German and English scholars continued a long debate as to whether Troy was real or a myth. Think what intellectual treasures await the sheer brute force of manpower to locate rare documents, artifacts and surviving structures for that often comprises the real costs of many kinds of research. One is put to mind of the SETI@home project wherein users download radio telescope data for background analysis on their personal machines at low usage hours such as the middle of the night.

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[3] Media Life Magazine reported in March, 2008 that network news ratings (down now to about 25 million viewers) took another big dip with the biggest loss coming in the advertiser's crucial demographic of 18-34 year olds while that same group's viewership increased 31% for cable news programs. The same report cites a recent Zogby poll of this age group wherein 55% reported the Internet to be their primary source of all information. Source: http://www.medialifemagazine.com/artman2/publish/Dayparts_update_51/Network_news_sees_big_slide_in_18-34s.asp

Perhaps there is nothing there to be found, but the absence of a finding yet does not logically dictate that there is nothing to be found and the very model of using many distributed processors to sift through mountains of data is worthy of emulation. Similarly, ornithology is indebted to annual backyard bird counts by amateurs as these have provided unimaginably expensive trend data on songbird numbers which have been used to shape public policy. One has only to apply this logic to the study of cultural history, literature, biology and it is easy to see the power of shared analysis. In the field of sociology, for instance, there has been startlingly little real analysis of some of one of the most significant cultural forces of the modern world: television. The reasons are not hard to find and many of them are methodological: not all television programs even exist as permanent recordings for the technology did not exist for doing so cheaply until the 1960s and many tapes from that era were erased, reused or destroyed; the data is mainly visual and not numerical which renders powerful statistical analysis software useless; content analysis at this stage requires text data and the concomitant expense of transcription and verification; there exist no easy ways to index or search these huge files generated by video from television, and on and on. Imagine if a hundred thousand people took assignments from a SETI@home parallel studying televised news, for example, and replaced statistical software with a scoring sheet and two Mark I human eyeballs? The volume and usefulness of the data could be astounding.

*EGALITARIANISM It has become almost a dirty word in academic circles to refer to intellectual pursuits (even that term has elitist meanings) as being oriented to the great unwashed, but the truth is that knowledge is becoming a cultural commodity and while many in the industrialized world (at least in the United States) may be obsessed with the shenanigans of the latest dissolute heiress or actor, there is a surprising undercurrent flowing in the opposite direction. Books continue to sell well, and research in applied history such as genealogy has become almost cult-like in its fanatic following. Yet, that said, few in the public read what academics say about most topics (history and cosmology being perhaps the sole exceptions) because they cannot readily access that information and because it often is couched in professional in-group argot, the very purpose of which is to keep the *lumpen proletariat* in the dark. The idea for this, as with many things, arose from craft guilds in medieval Europe where the procedures, no matter how mundane, were given unique and obscure terminology to keep outsiders from learning guild secrets. However, Karl Marx was the first modern figure to try to straddle the divide as he wrote both analytical pieces for those (very few) he regarded as his intellectual peers and propaganda tracts such as the *Communist Manifesto* (with Friedrich Engels) to be passed out at factory gates. One could note in passing that his most frequently quoted words came from the latter which would, no doubt, have been a huge disappointment to Marx who valued the opinions of academic scholars whose ranks he could never seem to join. That also highlights the fact that even in golden ages of intellectualism the views of the common man were, in some ways, definers of relevancy because had Marx's work not been the touchstone of revolutions since one could wonder if anyone would remember the man outside of the field of philosophy.

*UTILITY The utility of many visuals for use in teaching is often limited because they go out-of-date very rapidly and no updates of the information are provided (imagine the irrelevancy of pre 9-11 documentaries on terrorism). Also, many information sources provide no mechanism for identifying the production date which would identify the timeliness of data. At the same time, research into how frequently academic journals in pre-Internet times were consulted are not encouraging. However, readership and utility are likely different things in any case. One of the startling findings of the Internet era is that all that old, dusty knowledge has become suddenly valuable again (indeed, even dangerous, as early versions of the *Encyclopedia Britannica* contained detailed instructions for making explosives). Despite such risks and episodic attempts by governments to censor or constrain information for any number of reasons, utilitarian pressures have continued to make more information available even if these sometimes "go too far." This is one standard of science which has not been high on the list of academic knowledge discovery (except where someone in government or industry is willing to pay for the discovery), but in the new information model there would be Darwinian force to winnow information on the basis of utility.

*DYNAMIC REPRESENTATION AND ENGAGEMENT One has only to remember the powerful editing tools of masters of documentaries (preeminently Ken Burns) where a still image becomes dynamic through an ever widening focus on a small portion of a photograph which pulls back to show a starting scene (who can forget the close-up of the dead soldier from a Matthew Brady photograph which pulls back to reveal a foreground littered with the dead and the detritus of war).

ACTUAL CONCURRENT & HISTORICAL FOOTAGE Where locations and structures still stand, the power of a concurrent image cannot be overstated. Appomattox Courthouse, the grave of Karl Marx (and of Herbert Spencer on the other side of the sidewalk) and the Texas School Book Depository Building all engage the viewer in understanding that the past is rarely gone and, in fact, is often not even over. Historic images are often in the public domain, including industrial training films, educational films, documentaries by both establishment and critics, government public relations films and even some commercial and television videos that have lapsed into public domain which would include most images prior to January 1, 1923[4].

PROCEDURES

Fortunately, the mechanics for such a new system that blends the older forms of scholarship with the newer and more visual ways of perception are already in place. Were one to have to invent a YouTube and file transfer system it would be far different to envision how such a system would work.

At present, anyone in the social sciences wanting to discuss Emile Durkheim in class has three options: assign (mostly copyrighted) translations of Emile Durkheim to the students who will have little idea of the environment of Germany and Europe before World War I and the kinds of issues afoot including the Dreyfus Affair, militarism and the shift from *ancien regime* to modernity which was overtaking all Western industrializing societies. Using Ken Burns' style of documentary explanation as the model one can show in a images lasting only a few seconds complicated ideas and cultural understandings which would require dozens of pages of dense text to convey the same content. Using panning and dissolves now common on low-cost digital video equipment it can be possible to make these images come to life.

The procedures necessary for implementation of a visual learning and teaching system for the classroom would be as follows:

Topic Selection. Academics should endeavor to start close to home; that is, they should approach the study of subject matter in their academic areas. In the case of the authors, who recently completed a team-teaching experience in a graduate course on the canon of sociological theory (Karl Marx, Emile Durkheim and Max Weber along with lesser lights such as Pareto, Veblen and others), the first short video will be about the Midwest sociologist/economist Thorstein Veblen (1857-1929) whose boyhood home in Cato, Wisconsin, the Iowa location where he spent much of his boyhood and his academic appointments at the Universities of Chicago and Missouri are each only a few hundred miles from our offices in Ames, Iowa.

Provide Visual and Detailed Understanding of Academic Issues. Many academics believe that a visual depiction of complicated ideas is a ridiculous notion, and yet many faculty in many disciplines use the videos from the various James Burke television series (Connections (BBC, 1978), Connections[2] (BBC, 1994) The Day the Universe Changed (BBC, 1985)) and it is important to point out that Burke's documentaries were an ambitious attempt to blend science, engineering and cultural and political history into a seamless presentation. If there were to be a model for this new way of thinking about learning, Burke might be the place to start.

Post these to Public Places (YouTube, Google Video, etc.) Without Royalty. There have been many efforts to migrate scholarly work from the rarified environs of scholarly journals, particularly in light of stratospheric subscription rates, but few kinds of scholarly work would be better suited than that of documentary videos. That fact coincides with the appearance of an on-line venue which permits everyone with video equipment (or a high-quality cell phone for that matter) and an Internet connection to become a film maker without the problems of marketing. For academics this means that a ready audience among scholars and teachers might also mean having an impact on teaching at different levels of education such as

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[4] There are many sources of public domain images, such as
http://www.moviesfoundonline.com/documentaries.php#culture_society

high school and middle school and in the public generally. Add to this decidedly positive concatenation of events the prospect that search engines and browsers will soon access video sources as directly as text material and it is clear that scholars need to avail themselves of this opportunity.

Revise and Upgrade from Viewer Feedback and New Information. One of the most serious problems with traditional scholarly outputs has been that the flow of information has been pretty much the same as used by Galileo: the scholar propounds an argument, makes that argument in text format, puts it out for review by scholars and the public and that (except for a lifetime of house arrest for Galileo) is often the end of the matter. However, in an era in which a response from another knowledgeable person is a few keystrokes away, it is not necessarily the case that such an argument need be but one iteration, for with additional information it is possible that a video could be updated and improved over a period of years. In a scholarly context this might be the most powerful part of the new technology for we all know that on any subject there are new discoveries and new facts that alter our understanding of any topic. Recent discoveries, for example, by anthropologists and primatologists studying the behavior of chimpanzees and bonobos have shone new light on issues such as tool making and symbol (and implicitly on thinking and conceptual abilities) which a video treatment of animal mental capabilities might well incorporate. Those done in the old technology may as well be carved in granite, for a reissue would be expensive and probably unwelcome. However, an on-line video documentary could easily be altered with the addition of a few minutes of additional data and a sentence or two in the summation, making it literally up to the minute on the subject.

Build a Rating System for Videos including awards for the best videos in given areas such as traditional academic disciplines, but also topical areas in which one can now find it difficult to publish and get academic credit for out-of-field work such as organization studies (which straddles sociology, psychology, economics, political science, management, administrative sciences and others).

Begin Training New Scholars to Think in Different Terms. It is urgent that if these kinds of changes are to be taken seriously that they will eventually have to change the way we carry out graduate education. Clearly the study of the canon in any field will never go away, but it should not be the goal of graduate education but the starting point. One of the authors, who has taught graduate theory courses for thirty-five years, discovered that one of the more powerful ways for students to learn what concepts mean is to be forced to find them exemplified in video sources. One way of making this happen is to require students to take some key concepts and to find pointed, short video exemplars in popular video sources (television, film, on-line video) where they may be critiqued by others. For example, teaching a course on social organizational theory, he once used the book by which analyzes complex organizations using metaphors such as organisms, machines, and so forth and one student was assigned the metaphor of a "psychic prison" leaving one wondering what the student could do with that problem. The solution was brilliant, for the student located a copy of a science-fiction film titled, "The Cube" (1999) about a group of people suddenly transported into a claustrophobic cube with no escape and no idea of what to do. Ten minutes of that film said more about the abstract concept than a half day of lectures and discussions which went on long after the specific class was over.

The question as to how to train the next generation of academics in a visual way of thinking that is alien to most scholars in the present generation presents a formidable challenge and points to one of the reasons why academic areas tend to be very conservative and slow to change. However, there is every reason to believe that the sheer pace and depth of the revolutionary changes now overtaking academic institutions may not permit the luxury of business as usual much longer. A good example of the way this may happen is gained from looking at university libraries. Libraries used to be one of the most hide-bound (no pun intended) and unchanging places on university campuses where reassessment of knowledge bases required mainly dusting old books. Today, at libraries everywhere and particularly at institutions where technology is prized, the library has fused IT and traditional knowledge into a seamless whole and the libraries have struck off in a brave new direction where digital sources of traditional scholarship and newer forms have equal footing operating by a simple creed: knowledge is knowledge. While changes of this magnitude have not begun to affect the classroom (where, contrary to some teacher's view the conversion of yellowed lecture notes to PowerPoint does not put them on the cutting edge of change) and may not for a while. However, when those rare classes where the technology support base and adventuresomeness of the teacher

are fused the distinction between "in class" knowledge and "out there" knowledge will vanish and it will operate by a simple creed: knowledge is knowledge.

IMPLICATIONS FOR THE ACADEMY

There is, it is often said, little doubt that the mechanism by which pedagogy happens will be very different a century from now. Someone likely said that very thing, in archaic Greek in Plato's Academy in Greece, but in some ways it is not much truer now than it might have been to Plato's student. That teachers in 2008, some 2,400 years after the founding of the Academy, would still often be standing in front of students talking while students (now using laptop computers rather than styli to record their instructor's words) would have been unlikely to the Greeks in the ancient world, for if there was anything they believed in it was that the world was a dynamic and changeable place. The role of the last generation, they said, was to select the best of the knowledge of the past and to pass that along to the next generations, with the ultimate goal of having each teacher in touch at the same time with everything known in the past and with all the generations yet unborn. It is the case that the pedagogy of lecture was obsolete by the start of the Industrial Revolution and was only rescued by the rise of mass education in the 19th Century where the sheer scale of educating the great unwashed mandated increased efficiencies and thus the great lecture halls of the last century were born. Ironically, as the per student cost of higher education has gone stratospheric in the last decades (particularly in the United States), that pressure for efficiency has actually increased, with no concomitant calls for greater effectiveness. In lieu of actual effectiveness assessment some in industrial education have made standardized testing the measure of learning (it actually usually only measures recall of discrete facts from a limited repertoire of facts) and once again the efficacy of the lecture has escaped scrutiny. However, events may be finally catching up with the lecture and text format, for dropout rates in U.S. high schools are rising, standardized test scores are actually falling in many areas and even the supporters of the "No Child Left Untested" regime in the U.S. are admitting that it has not worked.

With this in mind, we suggest that a new kind of approach to teaching make use of the technologies of which our students are so aware: to them the Internet has always been in their lives. How can we continue to behave in learning environments as if interactive visual environments are restricted only to video games?

CONCLUSIONS

It is clear that a new world is coming at us, both in our private lives and in academic scholarship, the only question being whether we grab onto the changes and reshape our work, our thinking and our education of subsequent generations of scholars or whether, figuratively, we are a bug on the windshield of change.

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