The New Rhetoric: Classics on the Web

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"Propagating Classics" is a good title for discussing Classics on the World Wide Web on the Internet. Propagation implies growth, and the Web is nothing if not a growth phenomenon. And it¹s a global growth phenomenon at that. Current estimates are that some 300 million people around the world have access to the World Wide Web and actually use it regularly to get information. Scale changes the nature of things and their interactions. Matter on the subatomic level doesn't exist and interact in ways that are intuitive to macro-atomic beings such as ourselves; sometimes, physicists report, it behaves like a wave instead of a particle. And no matter how solid something looks, at the subatomic level its seemingly seamless matter isn't even substantial; it's overwhelmingly empty space. Change the scale to our human, macro-atomic level, and we certainly seem to be substantial, at least speaking for myself; indeed, the older I get, the more substantial I become, in undesirable dimensions.

So, too, information exists and interacts differently when the scale of things changes as dramatically as it does when the World Wide Web is the context. I would bet that there haven't been 300 million students of classics in the history of the world, or anywhere near that number. I would even bet that there may not have been 300 million people in the history of the world who could tell you what Classics is.

In any case, the difference for Classics in the scale of access to information on the Web is staggering. How many copies does a scholarly monograph sell today? In the low hundreds, in many cases. How many copies does a well-received "popular" work in Classics sell? Perhaps in the low to middle thousands? Even prominent journals number their subscribers in the hundreds or very low thousands: according to their publishers' web sites, the journals *Greece & Rome*, *Classical Quarterly*, and *Classical Review* have print runs of 1600 copies, while the *American Journal of Philology* has 1400 subscribers, *Arethusa* 900, and *Classical Antiquity* 650. Even if we assume that each of these items gets passed around to multiple readers, the scale is simply puny, almost invisible, compared to the scale of the Web. Whatever the figures, we are talking multiple orders of magnitude of difference of scale here. That is a huge difference. This is a big deal.

The size of the change of scale is perfectly clear from the logs of the Web site maintained by the Perseus Project at Tufts University. The Perseus Web site http://www.perseus.tufts.edu contains various databases of texts, pictures, and related archaeological and historical materials. Up until recently, it was exclusively Greek, but now Perseus is providing Roman materials as money, time, and rights restrictions allow. Perseus is not an on-line course with a syllabus, or a click-through tutorial, or an electronic game; it is a set of interactive, electronic resources that motivated users can learn to navigate to find information. Use of the Perseus Web site has sky-rocketed. It is now up to as many as 75,000 genuine hits per day (a filtered figure; the raw figure would be 125,000, the kind of count most sites use). This is a doubling of

use since last year. The technology of counting hits doesn't let us determine precisely how many different users this number represents, and it is of course a lot less than 75,000.

Still, whatever the level of imprecision inherent in analyzing hits, the logs do let us figure out that lots of different people use the Perseus Web site, at least 3,500 per day in periods of heavy use. The logs also let us see that these peoples access the Perseus site from lots of different locations at lots of different times of day and night. And lots of those locations hitting Perseus are not academic ones but, instead, offices and homes. These figures mean that, strikingly, the size and the diversity of the Perseus Web audience are no more than an order of magnitude smaller than those characteristics of the audience of the Library of Congress Web site. Or consider t he site www.ancientsites.com, which records that it has nearly 40,000 "registered citizens," meaning people interested enough in ancient history to look for it on the Web. Additionally, every classicist with a prominent presence on the Web can report stories of increasing amounts of email received from curious members of the general public, inquiring about the full range of our subject, be it literature, history, philosophy, religion, or archaeology. These statistics and anecdotes strongly hint at the possibilities for propagation for Classics on the Web.

If anything, then, is clear in the uncertain and fast-changing world of information technology, it is that the scale of things has changed and is going to stay changed. Classics on the Web, whatever it is now or whatever it may turn out to be in the future, has the potential to be part of a global growth phenomenon. This is only a potential, and, furthermore, it is not possible to anticipate what the inevitable unintended consequences of this technology for our discipline will be. This uncertainty about what Classics on the Web might turn out to be and what the future of information technology might mean for us in the field is not, however, a reason to fail to engage with the technology. Indeed, I would say that the other side of the coin is that the potential represented by the Web is also a threat. Fields that do not fully engage with the Web are going to fall off the modern map of information. I don't mean that I think books are going to go away, but I do mean that fields whose content is not represented thoughtfully and attractively and interactively on the Web are going to lose whatever visibility they may have in the wider world outside the academy. Like a budget item too small to earn its own line in the United States federal budget (think of the National Endowment for the Humanities), Classics, already a small field, is liable to get left aside in the information technology world if it doesn't energetically make use of the Web for propagation. And propagation by people who know the field. If we classicists, ancient historians, and archaeologists fail to do this work, then our field on the Web is liable to be overrun by sites authored by people who, for various reasons and agendas, will not try to be fair and comprehensive in using evidence and providing interpretations. Let me try to explain why I see this task as so important. Given my background as a historian, I'd like to start with a little basic definition of and historical background about the World Wide Web.

First of all, what is the World Wide Web? (The site http://www.whatis.com/tour.htm offers a useful descriptive tour of the basic technical background of the Internet and Web). Simply put, it is a set of software standards that lets computers on a network make connections to send packets of information to each other. In many ways, it helps me to think of the Web as a modern version of a lavishly annotated manuscript. That is, the Web is a clever mechanism for conveying information using a variety of techniques, above all, glosses. Think about how a well-used manuscript looks in the case of an author whose information is more than just a stream of text. Take, say, a manuscript of Ptolemy the geographer or a manuscript of a chronicle, like that of Jerome. These manuscripts use plenty of straight text to convey information, to be sure, but they also use other means: words are arranged spatially, tables give sets of numbers, colored ink distinguishes different categories of information, and marginal and intertextual

glosses explain and make connections to other related information. For Classicists, it makes sense to think of the Web as history's hugest living glossed manuscript, still and indefinitely in the process of production.

Glossing is in fact the reason why Web technology was invented in the first place. In 1980, Tim Berners-Lee was a 24-year-old researcher at the European subatomic physics laboratory known as CERN. He was there for six months as a consultant, and he had to find a way to make sense of and remember related information in the enormous and complicated data bases of the lab. So, he dreamed up software to make connections between information -- to serve as his electronic aid to memory, as he puts it. I would say he created a giant gloss system. That is, when he found a term or a passage in one document that required further explanation or annotation that was found in another, separate document, he glossed the first one by linking it electronically to the second one. This invention created a practical form of hypertext (not in itself a new idea in 1980), which is at its most fundamental level a way to create unlimited glosses in a non-linear fashion. When the Internet became a reality open to the public, Tim Berners-Lee pioneered a way to propagate his hypertextual glossing all around the globe. In this way, HTML, HTTP, and URLs were created, as well as software to let users see material graphically on the web (GUI web browsers) and, crucially, the software to enable computers to provide information to other computers upon request (server software). A final, crucial step in the creation of a working Web was the decision by CERN to let these inventions be distributed for free, without the lab claiming intellectual property rights that others had to pay to use or charging for overhead. The issue of property rights is only becoming more troublesome as the Web continues to develop. This is a sensitive subject, and I think it best mostly to leave it aside for today because I can't do it justice. But I will say that, in my view, the American Philological Association has the responsibility to take a leading role in demanding the widest and freest possible access to Classics on the Web and in insisting that traditional notions of intellectual property rights are not what we need.

We also have to think about how the high costs of overhead for print publications affect our ability to propagate Classics. To take one example more or less at random: one major and distinguished American university press, which I refrain from identifying, lists on its Web site some interesting statistics. If I read the site's information correctly, this press produces some 170 books each year. It employs some 100 people. If the average cost of an employee is, say, $35,000, including benefits and indirect costs, that works out to an overhead of about $20,000 per book. This figure, which probably underestimates these costs, doesn't even include the costs of other associated activities, such as the physical production of the books, outsourcing of tasks such as copy-editing, or -- and this is admittedly a small cost center, as we all know! -- the payments to the professors who critique and report on the contents of the books.

Now, maybe my figures are wildly out of context or inaccurate, but if they are in the ball park, then this is, I submit, a scary calculation. How is it going to be possible to maintain this expenditure of resources in the current climate of resistance to escalating costs in higher education, in which library budgets for monographs and journals continually shrivel? How are individuals going to be able to go on buying books in their field at the high prices now regularly charged, with monographs of no great length regularly going for $40 or $50 or even much more? I know that there is considerable discussion among professionals in academe, the presses, and libraries about the viability of the print scholarly monograph and even print scholarly journals. Some are doomsayers, predicting the death of the print monograph. Some are optimistic, predicting that print scholarly publication is going to keep on going at its current rate indefinitely. Nobody that I know of is predicting growth for print scholarly publication. My feeling is that continuing at the current rate is not a viable long-term situation. The scale of delivery of information in our world is changing and expanding enormously, for better or worse, and we as Classicists have to be

part of that growth if we are to thrive, in my view.

That the scale on which information exists and interacts is changing rapidly is a fundamental part of what I hoped to imply by my title, The New Rhetoric: Classics on the Web. I see rhetoric as a system for conveying information in ways that are effective, useful, and appealing both for the author and the audience. Without a rhetorical system, it is hard to imagine that we could have communication about the world and about what people should do in it. As a system of communication, the Web therefore has its own rhetorical system, even if that system is inchoate and subject to change. Clearly, it has one characteristic that makes it seem like a "natural" system to many people in the modern world: it makes heavy use of graphics and pictures. This characteristic is not only traditional in the sense that people have used drawings and pictures to convey information since early times. It is also modern: there can be no doubt that lots and lots of people today get lots and lots of their information from television, videos, and movies in theatres. This may be good, this may be bad, but it is a reality.

The Web can convey not just text and still pictures but also video and audio. It conveys information in ways that lots of people today are accustomed to receiving information, in ways that lots people today like to receive information. Most importantly, perhaps, the Web allows us to present Classics the way it was meant to be presented, with interconnections. Hyperlinking allows us to connect diverse aspects of the ancient Greco-Roman world across time and space in a way that books cannot easily accomplish, and not at all outside the confines of a major research library, of which there are precious few. Not to engage in doing Classics on the Web, therefore, would be equivalent to deciding not to publish typeset books in Classics after the invention of the printing press. This is just not an option for a field that ranks as an "elective" in today's world. We must, to paraphrase Susan Treggiari's title for her Presidential Panel, propagate Greeks and Romans on the Web.

How are we going to do this? One obvious answer is that student classicists have to be trained how to create Classics on the Web. This raises a couple of issues. How are students, especially graduate students, going to find the time to learn the technology for creating Classics on the Web? No graduate student I have ever met has had extra time on his or her hands, so vast is the scope of Classics as a field. If grad students are to gain knowledge of information technology, then won't they have less time to devote to acquiring the traditional knowledge of the field? This issue reminds me of the one raised not so long ago by the president of the Archaeological Institute of America. He argued, if I remember correctly, that classical archaeology graduate students needed to make time in their curricula for subjects beyond the ones traditionally included in their training. With good reason, he argued that they needed to learn other disciplines, such as anthropology and statistics and New World archaeology. To make time for these additions, he speculated that time might have to be taken away from the study of Greek and Latin in a classical archaeology graduate curriculum.

As a classicist, I reject that sort of proposal as a way to make time for information technology in the Classics curriculum. But I certainly do want to propose that our field somehow make time to impart this knowledge to those whose job it will be to make Classics survive and thrive in the future. I would be very happy to be informed about Classics graduate programs that are dealing with this issue, either in discussion about the future of their programs, or with courses already in place to teach information technology for Classicists. I know that scholars at some institutions with leading graduate programs are actively concerned with this issue, such as Joseph Farrell and James O'Donnell at the University of Pennsylvania (http://ccat.sas.upenn.edu/~joef/gradcurr.html). I would be glad to know of programs that have actually institutionalized solutions, however, such as training courses, or have required graduate

students to do projects using information technology as a delivery system for Classics. And have any graduate departments in our field instituted Web publication of M.A. and Ph.D. theses? It is surely indicative of a trend that Virginia Polytechnic Institute and West Virginia University have recently made electronic publication mandatory for Ph.D. dissertations in their graduate schools.

At the graduate level, Classics may need to go beyond its boundaries to participate in information technology initiatives on a wider scale. I think, for example, of the Humanities Computing programs under development at the University of Kentucky in Lexington. Beyond this, we will have to have consortial efforts, with a strong virtual training component and regular institutes, perhaps on the model of the summer National Endowment for the Humanities institutes. Collaboration on this scale can be funded: support from the Foundation for Improving Post-Secondary Education (FIPSE), under the aegis of the United States Department of Education, has supported efforts to create a design for electronic publication that will serve all audiences simultaneously (which, I can now add, has resulted in the establishment of STOA; its emphasis on referring contributions to maintain traditional standards of peer review is a crucial element for professional electronic publication).

It is particularly encouraging that electronic publication, especially on the Web, offers hope for improvement and propagation of fundamental work in our field, especially commentaries -- an area in which Joseph Farrell is leading the way with his work on Virgil¹s Aeneid (ccat.sas.upenn.edu/~joef/). If there ever was a genre that cried out for the sort of helpful and extensive glossing that the best use of the Web can provide, it is commentaries. I see the possibility of creating commentaries that are useful and interesting to a wide audience, from neophytes to experts, and that provide instant access to related information, to which the commentaries' authors work so hard to make connections. In addition to using the Web to publish new commentaries, it is also possible and desirable to update older, out-of-print commentaries, which ironically sometimes include material at a range of levels better suited for our students today than do new commentaries produced by the major sources of such works (namely, the major English university presses).

The best place to begin training students to propagate Classics on the Web is at the undergraduate level. There, we can teach students that, using the evolving digital library of resources in our field, they can and must learn Classics not just in school but as an on-going quest for learning throughout their lives. After all, Classics is not just a field for classrooms and academic offices and libraries. I would bet that most, if not all, of the offices in the high-rise towers visible from our Chicago hotel today at this meeting are hooked up to the internet. Those office-workers could study Web Classics at lunch hour, as we know hoards of people do using the Perseus Web site. This can only be good for the visibility and viability of our field. In addition, undergraduates are increasingly learning to use and, more significantly, create materials on the Web. They will rightly expect to study and even to help shape their subject using that technology, both because it boosts their learning ability by presenting material in a more interconnected fashion and this is no small benefit because using information technology to "do" Classics trains them in eminently transferable skills valued in the non-academic job market. A Classics major with information technology skills honed by searching out and presenting interconnected evidence from primary sources is doing preparation for a life of productive work across the board.

Whether the training to do Web Classics takes place at the undergraduate, graduate, or after-graduate-school stage, it's not just time for training students in information technology that our field needs to create, it's also the people to train the people who are the future of Classics. There just aren't very many people with the requisite skills in Classics and information technology to do this training.

Classics on the Web is so far the creation of a relatively small group of people within a small field. Furthermore, many of these people have done their work of creating Classics on the Web as sole practitioners, as it were, as often happens in the case of pioneers. They have therefore often not been members of an institution that supplies them with assistants and protégés. These factors make Classics on the Web a precarious enterprise, one especially vulnerable to personnel losses. The recent untimely death of François Charpin of the University of Paris VII, for example, is a catastrophic loss to the international development of Classics on the Web. As one of the original moving forces in preparing syntactically analyzed Latin texts for the Web, he was doing fundamental work with fantastic energy and vision. At his death he had achieved major results, whose publication is now impossible because he was a sole practitioner. Under the circumstances there is simply no way to plug someone else into his place to complete his programs and try to make up for the loss to the field that his death has caused. The same would be true of various other people that I could, but will not, list, for fear of drawing the evil eye in their direction. The list is unfortunately not long enough to make me stop worrying about the possibility that the growth of Web Classics could be devastated if only one or two of these essential people got hit by a bus, as it were.

For this reason (among others), I don't think that Classics has the luxury of taking time to debate whether the changes in information technology are good or bad and should therefore be encouraged or rejected. I know philosophers -- not ancient philosophers, I hasten to add -- who take the view that academics should stop at this point to take lots of time to philosophize about the meaning and effects of information technology and that this thinking should take precedence over doing. As an academic myself, I respect and enjoy the importance and the pleasure of thinking about things. But as a participant in the changes in information technology in our field, I have to say with all possible emphasis that I think it is high time for our field to be fully engaged in the doing of Classics on the Web and of linking our work to each other¹s to generate synergy in creating deep resources.

We have to do this for a variety of reasons, most of which are obvious. For one thing, as many people have said for a long time, today's students increasingly expect to be able to learn from computer screens at times and places of their choosing. They still read books, or at least expect to be told to read books, but they are used to and want to take information from more actively visual sources. I know it is not fashionable to say that video and computer games are anything more than a waste of time, and I also understand that there are gender issues involved with such games, to say nothing of cognitive and social questions. But I think that such games are here to stay, and that an increasing number of students expect to "learn" in the broadest sense from this kind of experience. I am not saying that Classics should create shoot-em up games to compete with Duke Nuk'em or Marathon, even though we clearly have in Greek and Roman history more than enough raw source material for many such bloody exercises. I am saying that we ought to be thinking about what the popularity of such things might mean for our future. It is clear that Classics-based games are being created outside the academy, from children's adventure games on CD-ROM, to on-line mysteries such as SPQR on the Web (http://www.cybersites.com:8080/twep/rome). I don't know if Classics as a field ought to be devoting time and resources to developing "Classics Myst" or "Classics Riven" as seductive entry points to our field for a wider audience. But I know that we ought to be thinking about it and deciding whether we are in danger if we don't create such materials to propagate Classics.

And I think we ought to be thinking about wilder scenarios in the future of higher education. What if, for example, in the future an increasing number of smart people decided not to go to college in the conventional sense? Not to go, that is, to one of our campuses and enroll in a traditional program; not to

go to college in this way because they could achieve their goals in education and employment otherwise. To take a remote example, think about the National Basketball Association. In the past, it was very rare for an NBA player not to enroll in a college for a significant period of time. Going straight from a high school team to a pro team was almost unheard of. Today, this is more and more common. Players with high athletic ability and good high school experience no longer necessarily require college-level basketball experience to be drafted by the NBA and be paid millions.

What has this sports story got to do with us, you may well ask? Well, I don't think it is impossible that something similar may take place for students of high intellectual and technical ability, not just for athletes. Microsoft, the mega-corporation of software technology with its own self-proclaimed "campus" as corporate headquarters, is now reported to have set up a program to link up the corporation with high schools to identify and train students who would go to work for Microsoft directly out of high school. These highly-talented students would not go to college in the conventional sense. Their "post-high school education," whatever it might cover, would, I imagine, have to depend in large part on electronic resources, such as information on CD-ROM and the Web, and on virtual instruction.

Now, it may not be the case that even Bill Gates could suck up enough talented high school students to create a significant "brain drain" affecting the yield of bright students for traditional colleges, but there are other people aggressively competing for students, too. These entrepreneurs are increasingly selling higher education delivered virtually. Their plans are not scams; I don't mean institutions that sell you a sheepskin in return for an essay on your life experience and a big check. I mean higher education delivered in ways that don't support our campus-based, person-to-person model of higher education. Such institutions won't be offering humanities education and certainly not Classics; they will be concerned with business and technical knowledge and occupations.

Do Microsoft's plan for bright high schoolers or the growth of virtual higher education in business and technical fields constitute threats to the future of Classics? I don't know, but I think we ought to think about the possibility in a concerted way. Just as the Web is creating a global competition for people's attention to information, so, too, there is an increasing competition for people who can create and propagate information using technology. At the risk of overdramatizing, I would say that we, like all academic fields, whether they realize it are not, are going to have to compete in a vast, global, unregulated, capitalistic competition for people's attention and intelligence. We have to think hard about how to compete in this merciless arena.

And nobody needs to think about it harder than the people being hired today to teach Classics and those hiring them. First of all, the broader higher education market is going to expect information technology skills from its professors in the future. Classicists of the future have to be ready to meet this expectation, in an environment where there will be less tenure and more on-going assessment of job performance throughout a professor's career. But I am not just concerned with jobs for future classicists. The people being hired today, the people at this meeting, are going to determine the nature and course of our field five to ten years from now. The undergraduate students being trained today are going to determine the nature and course of our field ten to twenty years from now. Those spans of time are eons in information technology.

I will tell one story to underline my point. The first big hard disk that the Perseus Project acquired in the mid-1980s was a 600 megabyte drive. A giant in its day, it was. And I mean literally a giant. It was the size of a refrigerator and had to be delivered by stevedores on a hand cart. It cost $40,000 in mid-1980s

dollars. It required a service contract that cost $4,000 per year. Technicians required a couple of days to get it functioning properly after hooking it up to the computer it was meant for. Today, a hard disk drive of 600 megabytes -- if you can find one that small -- would fit in a book bag, would cost a couple of hundred dollars at most, and could be delivered overnight to your doorstep for less than five bucks.

This is just one concrete example of the scale of change that is upon us. The students and the beginning faculty in Classics of today have to be ready to deal with this rate and scale of change if Classics is to thrive in the future. Students have to get the training to make this happen, undergraduate and graduate institutions have to help them do that, and then those institutions have to make competence in this new rhetoric an important component in their hiring and evaluation of Classics faculty. Finally, creators of Web Classics have to make their work scalable, in the sense envisioned by STOA. Properly designed, Web Classics hypertextual materials should simultaneously serve a vertical audience, from pre-college to scholarly.

This is what we are doing at Holy Cross. Holy Cross is a liberal arts college of about 2,600 students. We have a Classics department with ten faculty members. We have from 50 to 60 Classics majors, all of whom must study both Latin and Greek, with at least one of the ancient languages studied to the advanced, third-year level. We are very traditional in this way, very philological. At traditional and philological Holy Cross, we now expect new faculty hires either to have a reasonable knowledge of information technology in Classics, or to demonstrate an enthusiasm and an ability to get up to speed quickly. This next semester, we will be using information technology in Classics in the classroom in sixteen different courses on a regular basis, from ancient language courses to archaeology surveys. That number would be larger if we could equip classrooms with computer projection equipment faster. And, if all goes well, the number of our classes using information technology as a basic tool in our field for acquiring and creating knowledge will continue to grow.

The administration at Holy Cross encourages the Classics department to do this work and spends money to support it because, as a Jesuit institution, Holy Cross officially respects the value of a rhetorical education and, furthermore, officially recognizes information technology as a necessary and central part of such an education. For us at Holy Cross, there is no looking back. It is our official responsibility to train our Classics students to operate in the new rhetoric so as to preserve, understand, and propagate knowledge of the past. It is encouraging that we are not alone in this commitment. Pacific Lutheran University in Tacoma, Washington, for example, recently made expertise in information technology for our field a requirement for a tenure-track position in Classics. This is the sort of institutional vision that our field must achieve as broadly as possible.

My colleague, Neel Smith, has done the most to help the Holy Cross Classics department meet this. He has introduced a course in our departmental curriculum entitled Contemporary Theories and Methods in Classics/The New Rhetoric: Information Technology in Classics (http://classics.holycross.edu/Courses/IT_in_Classics) that teaches information technology in Classics, including not just Web site creation, but also the use of on-line philological analysis tools and geographical information systems. His course is a ground-breaking effort that presents information technology as a rhetorical system for learning about and propagating Classics. Its syllabus is on the Web at our Holy Cross Classics site, and I encourage you to look at it. Neel’s course is the primary example of how we at Holy Cross are going to make our students and ourselves participants in creating Classics on the Web, and I, for one, look forward to increasing collaboration with others who share this goal.

Coda

I would like to repeat and expand the thanks I originally expressed at the 1997 annual meeting of the American Philological Association when I presented this paper as part of the Presidential Panel. First, I am grateful to Susan Treggiari, then president of the APA, for the invitation to participate in the panel and for the complete freedom she gave the panelists concerning the content of their presentations. It should go without saying that she is not to be held responsible for anything I say in this opinion piece. Secondly, I must thank Greg Crane, Kenny Morrell, and Neel Smith, my collaborators on the Perseus Project, for their individual discussions with me of various points in this piece. Again, none of them is to be held responsible for any of the views expressed here. Finally, I am very grateful to Ross Scaife, the editor of STOA, and to the two anonymous referees for their constructive criticism and helpful advice that much improved this piece. They cannot be blamed if I did not listen to everything they said.

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