

## **Why I love/hate Wikipedia: Reflections upon (not quite) subjugated knowledges**

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*Abstract: Wikipedia is a well-known online encyclopedia, whose content is contributed and edited by volunteers. Its use by students for their research is, to be polite, controversial. Is Wikipedia really evil, or is it a teaching opportunity in disguise, a representation of some deeper cultural change? We present first-hand accounts from two different disciplines, computer science and anthropology, to illustrate how experiences with Wikipedia may be crossdisciplinary. We use these to reflect upon the nature of Wikipedia and its role in teaching.*

*Keywords: Computer Science, Anthropology, Social Sciences, teaching, learning, scholarship, World Wide Web, Wikipedia*

Wikipedia exists. That is not in dispute; the question is what role (if any) Wikipedia should play in the classroom, in assignments, and in research. We think that Wikipedia itself is not really at issue, but it provides a convenient lightning rod for a debate that, deep down, is really about a restrictive view of research sources and underlying cultural values, and their eventual emergence in the classroom.

We present our argument in a nontraditional manner. We begin with two first person narratives, experiences the authors have had with Wikipedia in their courses, one in computer science and one in anthropology. Those narratives are used in the discussion that follows to draw out our argument, about why we love/hate Wikipedia and what can be done about it.

### **I. John's Story.**

'Please permit me to introduce my humble self to you. I am Mr. James Williams the Director of International Relation with Access Bank of Nigeria Limited. I'm 47yrs old and I got your email address on the Chambers of Commerce address list and my confidence reposed on you to contact you. I hope you read this message Carefully and reply me immediately, although we have not met before but I suggest that this transaction will bring us together.'

This excerpt is all too familiar to anyone who has ever checked their email. These emails are currently known as Nigerian scams, or 419 scams, and they are a type of what is generally called advance fee fraud. I wanted to find out when these scams originated, and Wikipedia sent me on a search that has lasted, off and on, over two years.

Since 2005, I have taught a 4<sup>th</sup>-year computer science course on spam and spyware (J. Aycock, 2006). This was, and to the best of my knowledge still is, the only course of its kind in the world. One of the topics I cover is fraud that's perpetrated via spam, like the aforementioned

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advance fee fraud. When preparing my first lecture on the topic, I thought it would be useful to put this fraud into its historical context. When was the first advance fee fraud, anyway?

I started with Wikipedia. I view Wikipedia in the same way that I view Google, as a labor-saving device subject to noise and misinformation. However, Wikipedia articles sometimes cite reasonable, academically sound sources of information that can provide good starting points, and that's what I was after.

The Wikipedia entry on advance fee fraud (Wikipedia, a) observes that the Nigerian scam is related to an older variant, called the "Spanish Prisoner" scam. So far, so good. The Spanish Prisoner Wikipedia entry (Wikipedia, d), in turn, begins by dating the scheme back to the year 1588. And a citation beside it! A lead on a primary source, I thought, as I eagerly clicked on the link to find... some guy's web page, with no mention of where the date came from. Some Guy was very helpful when I emailed him, however, and said he got the date from a long-lost newspaper article. A dead end.

Much pawing through web search results and library databases later, I realized that there were many references to that date, but no one seemed to know where it came from. Yet it appeared, without citation, in a wide variety of places: a law journal article (Morton, 1996); the *New Yorker* (Zuckoff, 2006); the UK Metropolitan Police website (Metropolitan Police Service, n.d.); an academic journal article (Glickman, 2005). Finally I stumbled across a well-buried bibliography that mentioned a book by Jay Robert Nash, *Hustlers and Con Men* (Nash, 1976). Page 26 has the magic number, 1588, but there are no excerpts from this ancient letter, no mention of which source it came from. Trying likely-looking references in the book led nowhere. Another dead end.

The same well-buried bibliography also pointed to an article about the Spanish Prisoner dating back to 1909; this article even contains an excerpt of the letter from 1908 (Author Unknown, 1909). A little more poking around through the 1900s turned up several more examples, one from 1940 (U.S. Department of State, 1940) and one from 1909 (U.S. Department of State, 1909), both warnings issued by the U.S. State Department. The latter is interesting because it notes that the scams have been going on 'For nearly twenty years.'

My next attempt was made on the premise that legal records go back hundreds of years, and if the scam did go back to the 16th century, then surely someone had been caught and tried. Unfortunately, I couldn't find any such records, but it did cause me to stumble across some criminology books from 1899 (Griffiths, 1899; PowerBerrey, 1899). Both make it sound as if receiving the scam letters is a regular event, and one contains an 1898 scam letter, noting the scam 'has been practiced for half a century or more' (PowerBerrey, 1899, p. 170). Even allowing for some exaggeration by the author, it seems fairly certain that these scams existed in the mid-to late 1800s.

But as early as 1588? I'm skeptical. Despite spending far too much time trying to trace the letters further, I've found no evidence before the 1800s. The post in England was not open for the public to use before 1635 (Beale, 1998), making it difficult for scam letters to have been sent in 1588, and Elizabethan fraud seemed to have been conducted mostly face-to-face (see, for example, Aydelotte, 1913).

Thanks to one Wikipedia entry, I was sent on a wild goose chase while preparing my lecture for a computer science class. And after all this, 1588 still persists in the Wikipedia universe – the digging I've done constitutes original research, which is prohibited content according to Wikipedia policy (Wikipedia, c).

## II. Alan's Story.

During the spring semester of 2006, I prepped and taught a freshman seminar course in cultural Anthropology called "Buy Me! Ads and Shopping in American Culture." Freshman Seminars are especially designed to help traditional first-year students with their transition to university work. The idea is that if the course is kept small enough and interesting enough, first-year students are more likely to stay enrolled during their first semester, which typically has the highest attrition rate. I had only taught this course at the graduate level previously, but I believed that it would be very attractive to students, since most of them are avid shoppers and consumers of popular culture.

As an advertisement for the course, I was asked to send the first-year student advisors a sprightly two- or three- paragraph blurb to entice students to take the course. At the time I wrote this, I had not completely finished writing my syllabus. However, I knew that there were certain topics I wanted to cover, and particular theoretical models that I intended to use during the course. In this subfield of Anthropology, the theoretical models are often named after the cultural situation that inspired them: for instance, there is a model of "McDonaldization" (Ritzer, 2004) and another of "Disneyfication" (Bryman, 2004). I also wanted to spend some time in the course talking about Walmart as a cultural phenomenon, so pressed for time, I spontaneously made up a theoretical model that I termed "Walmarting" to add to the blurb. I emailed this little advertising blurb to the first-year advisors, and promptly forgot about it.

A few months later, about halfway through the spring semester, we were ready to start on the portion of the course that included an exploration of Walmart. I had made it my practice to use Web sites as often as possible to add resources to each course topic, so I Googled "Walmart," then as an afterthought, "Walmarting." To my surprise, "Walmarting" turned up a Wikipedia entry, so I went there to see what was available online.

The Wikipedia entry (Wikipedia, e) was very short, not really suggesting a developed theoretical perspective. There was a brief statement of some criticisms of Walmart, but little else. However, my attention was drawn to the links provided at the end of the Wikipedia article. One of the links was to "a course syllabus that involves Walmarting" – I followed this link, and what did I find? Of course, the link was to my own advertising blurb for the course I was teaching! Talk about circularity, I felt as if I were in an Escher drawing!

I decided that this had to become a "teaching moment," so I told my students about the Wikipedia link at our next class meeting. But I also wanted to use this unexpected Web manifestation as an opportunity for active learning. So I asked my students to help develop the model of "Walmarting" by writing a short assignment in which they identified two or three key features of Walmart that they considered central to the culture of Walmart. The students took to this assignment quite happily. Not only had they been reading about Walmart online, they had also seen a video critical of Walmart. In addition, many of them were themselves dedicated Walmart shoppers, so they had a fund of their own cultural experience to draw upon.

After the class was over, I went back to my office and compiled the students' responses, then wrote half a dozen paragraphs – making certain to observe the Wikipedia standard of NPOV (neutral point of view (Wikipedia, b)) – that constituted a preliminary model of "Walmarting" that would be very similar in scope to others in this field. I also compiled an up to date bibliography, including a surprising number of books and videos on Walmart: it's really been assimilated into American popular culture in the past few years! The Wikipedia editor I contacted about the Walmarting article was extremely helpful with technical matters, and within a couple of days the article was complete.

I revisited my class to show them the article and invite comments. Interestingly, although they agreed that it was pretty cool to be part of a wiki collective, an “exit assignment” (A. Aycock, 2006) at the end of the class suggested that they weren’t nearly as amazed as I was by what had just happened. I had thought that this was an extraordinary demonstration of how globalization affects us in ways we can never predict or even control. As well, it seemed to me to illustrate nicely the effect of time-space compression that makes our pace of life so frenetic (Harvey, 1990). At first I was a little disappointed at the students’ reaction (or lack of reaction), but then as I thought about it I realized that for them, it had always been this way – in the same sense that for them, John Lennon had *always* been dead. It was I who was the cultural outsider here, for them globalization and the postmodern experience of “placelessness” were merely the way it’s supposed to be.

### **III. Discussion.**

Taken together, we have two distinct experiences with Wikipedia and teaching. Alan’s story is a positive interaction, showing how Wikipedia can feed class discussion and stimulate students to begin contributing to research in a supervised manner. John’s story may *seem* like a negative interaction with Wikipedia, but this was beneficial too. In the classroom, John’s “hunt for 1588” was actively used to illustrate potential pitfalls with Wikipedia and Internet sources in general, and then led into a discussion of research methods.

Even though the Wikipedia experiences were distinct and across two different disciplines, they yielded similar results with respect to the classroom. This indicates that there may be deeper issues here to explore.

#### **A. History Matters.**

Is it easy to dismiss Wikipedia as lacking formal academic peer review, taking academic peer review to be a gold standard, but in fact that grossly oversimplifies matters for two reasons. First, academic peer review suffers from its own problems – indeed, it is hard to find a researcher without a laundry list of peer review horror stories – but a complete discussion of this point is outside the scope of this paper. Second, the rich availability of Internet sources, of which Wikipedia is only one example, already forces students and researchers alike to be historians.

Historians often use non-peer reviewed material as primary sources: government records, letters, memoirs, diaries (Tosh, 2002). The problem becomes one of interpreting the sources. The source may not be representative of its time, for instance, and may only give a look into the reality for upper-class society, or for non-minority males (Hudson, 2000). There may also be biases and intentional or unintentional errors (Tosh, 2002). The historian must interpret the source to determine its veracity and its meaning in context.

But this is no longer the refuge of historians; anyone using an Internet source must now do the same. Furthermore, the problem is magnified because it is not just the elite who can publish web pages, and there are new sources of data. Instant messaging and text messages are the conversation transcripts, emails the letters, blogs the diaries of old.

One could argue that nothing pertinent to computer science research would ever appear in these new forums, but in fact that is not true in some areas. Computer history is one obvious example, but instead we look at what should be far removed from history: computer security.

In 2005, Sony was revealed to be installing a “rootkit” on its customers’ computers.

While the definition of a rootkit is outside the scope of this paper, suffice it to say that this was a shocking revelation: rootkits are properly considered to be malicious software. The primary source that broke the rootkit news? Mark Russinovich's blog (Russinovich, 2005). Recently, another rootkit used in a Sony product was made public, this time by FSecure's blog (Mika, 2007).

And there are more nonacademic, non-peer reviewed primary sources; computer security has heavy industry involvement. Security companies, large and small, produce white papers and have online encyclopedias of malicious software containing sound technical analyses. These are sources that should be, and are, cited in security research. The written output of security companies tends to be at its best and most detailed when talking about malicious threats, however. The details about how a commercial security product operates are rarely more than hinted at in vendor documents, and such details are treated by security company employees as proprietary secrets. The details of commercial products are not secret, as it turns out, but are available to security researchers in another nonacademic form: patent applications. Patent applications are "reviewed" in some sense of the word, but it is often a simple matter for an domain expert to find overlapping claims or prior art. Although clearly biased – the patent applicant has great interest in being awarded a patent – patents (available online) can also be primary sources of research material.

Computer security also has a large underground involvement, resulting in many more potential sources of information with a wide variance in quality. Some, like Aleph One's "Smashing the Stack for Fun and Profit" (Aleph One, 1996) are heavily cited in peer-reviewed academic work; this particular example appeared in *Phrack*, an underground electronic magazine (Phrack, n.d.). There are a plethora of underground, or at least non-mainstream, security conferences as well, like DEFCON (DEFCON, n.d.).

Other underground sources are challenging to a researcher not only because of interpretation problems, but because of their highly ephemeral nature. Often multiple exact copies of an underground document will exist on multiple sites, and there is no clear authoritative location to cite. "The ELF Virus Writing HOWTO" (Bartolich, 2003), for instance, is available from many different web sites.

Other times, the availability of underground sites is unstable, like VX Heavens (VX Heavens, n.d.) (a web site with information about computer viruses) and Google's cache or the Internet Archive's Wayback Machine (Wayback Machine, n.d.) become the only means of acquiring underground source material. This impermanence is a theme we return to in the next section.

One approach to dealing with the lack of academic peer review is to entice the alternative to become mainstream. A 2007 workshop called WOOT (USENIX Workshop on Offensive Technologies) provided 'a forum for high-quality peer reviewed papers for discussing tools and techniques for attack' (USENIX, n.d.), computer security material that might otherwise appear underground. The papers in the workshop program, however, were almost exclusively from universities and technology companies. We conclude from this that attempts at making the underground conform to academic peer review are ultimately doomed to failure, and a wiser strategy is to learn to handle alternative sources.

Given that there are already areas of computer science where non-peer reviewed sources are important, and the growing number of Internet sources, fighting their use is likely a losing battle and a disservice to students. Instead, it makes more sense to embrace the change, and properly train computer science students to use and interpret Internet sources like Wikipedia.

### ***B. Isn't It Romantic?***

Equally to the point in our view is the fact that these Wikipedia experiences illustrate an interesting and important dilemma in our understanding of how knowledge is produced and how learning can occur in our culture.

On the one hand, modernity is imbued through and through with the residue of a Romanticism which identifies knowledge as a deep upwelling of an internally located individuality that then manifests itself somehow as art, as science, as leadership or even divine inspiration (Heath and Boreham, 2000). This Romanticism is reflected in such disparate realms as hero worship in politics or sport, the Hollywood cult of celebrity, the winner-take-all compensation of CEOs, prohibitions against “cheating” (collaboration?) in university, the movie stereotype of the mathematical or artistic genius or of the downtrodden loner struggling to overcome all obstacles to success, even the familiar story of tormented star-crossed lovers who intuit themselves to be soul mates (David Black, 2002).

Yet on the other hand, anyone who has spent time in a high-energy particle physics setting or served on a clinical lab sciences editorial review board, to name only a couple of disciplines, knows that sole authors can be few and far between. In the real world, we typically work in groups or teams; those who work alone do so often more out of misanthropy than genius (Aycock and Buchignani, 1995). So which is it: is “knowing” an act of solitude or rather one of sociability?

Our Wikipedia experiences suggest that it is both and neither, but that this equivocation is worth exploring further in the classroom. Fraud emails are no less a product of the imagination than a sociological model of Walmart, yet both are products of a certain collective tradition in which knowledge is recognized to have been sustained and transmitted across generations or even centuries. One happens to be illegitimate while the other is scholarly, but the structures of knowledge and their conditions of production are remarkably analogous (McCarthy, 1996). We contribute to this tradition and even embellish it from time to time, but the body of knowledge peculiar to our culture – Wikipedia is case in point – remains both awkwardly intact yet constantly under construction, whether we are aware of it or not. Are we then summarily to dismiss Wikipedia as an Orwellian memory hole, or instead to exalt it as a “technology of the self” (Aycock, 1995) meant to shape ourselves to the very real burdens of modernity? Foucault’s famous phrase, *subjugated knowledges*, that appears in the title of this paper, alludes precisely to the manner in which knowledge refuses to be entirely the one or the other, continuity or interruption, institution or intuition (Foucault, 1972).

In the classroom, we reinforce this equivocation when we tell our students that they must locate their own work in the larger scholarly tradition that has preceded it, yet if they replicate that work too seamlessly, we prosecute them for plagiarism. The scientific rule of peer review is an institutionalized version of this dilemma; the NPOV rule of Wikipedia is yet another. If I ask my students to cite their references, and they consult Wikipedia to find references that may literally have been fabricated the day before, not much has been gained (Aycock, 1993b). Wikipedia’s notion of authoritative sourcing without authorial accountability is scarcely in our view a satisfactory substitute for peer review, but peer reviewers themselves are routinely acknowledged (if anonymously) as collaborators in the final product. And so it goes. We have constantly to remind ourselves that just as “Walmarting” was self-referential in Alan’s example, so is the quest for disciplinary knowledge, evinced in the historicity of John’s fraud email.

### **IV. Implications.**

In a recent work (Dron, 2007), Dron outlines the play of constraint and choice in E-Learning, with particular reference to the social networking infrastructure that is addressed by such Web 2.0 technologies as wikis, P2P file sharing, Flickr and MySpace, MMOGs and eBay. Popular volumes celebrate the revolutionary impulse of collaboration and the wisdom of crowds (Surowiecki, 2005, Tapscott and Williams, 2006). Like it or not, our students are creatures of a culture in which image and truth, experience and fantasy are difficult to disentangle (Aycock, 1993a). Does this mean that we should simply acquiesce? Not necessarily, but cultural movements must be taken seriously to achieve that teachable moment in the classroom. We cannot really expect students to adopt a more thoughtful approach to the academy's version of knowledge unless we also engage them in the dialog that addresses theirs. The late Richard Rorty's admonition to scholars that above all, we must keep the conversation going, is very much a recognition of the dilemma we have sketched above (Rorty, 1979).

What does this mean? Simply that good teachers ignore changes in technology and culture at their peril. Instead of taking a hardline stance on Wikipedia (Waters, 2007), we should be using Wikipedia as an opportunity (Aycock, 2003). It is an excellent vehicle to discuss with our students not only the use and interpretation of Internet sources, but the management of rapidly changing source material and the role of collaborative work within academic research.

## **V. Some Pedagogical Strategies.**

Here are several strategies that I (Alan) use in my courses to bring the Web into the dialog of teaching and learning:

- I require the students to introduce themselves online, including the usual – where are you from, what do you do for fun – but also ‘what is your favorite YouTube clip?’ The student must then include a link to their YouTube clip and justify it in the context of their interests and background.
- I often use ads from sources such as iFilm to illustrate cultural patterns in American society. Since ads are ubiquitous, they constitute a medium that students are familiar with, yet often taken for granted. The brevity of the ads, e.g., 30-second Super Bowl ads, presents data in a form that allows students to whet their empirical skills.
- Whenever possible, I post a YouTube clip to our own course Web site for the students to view. I choose these clips deliberately for their “edginess” in terms of the current course material. For instance, I teach a module on Islam about which my students are typically both ignorant and curious. I include a YouTube clip on Clotaire K, a French-Lebanese hip-hop artist whose protest songs provide my students a perspective that they don't get in the American news media.
- I may give my students a Wikipedia reference to a concept that we're studying – e.g., moral panic, alienation, panopticon, Neopaganism – but then ask them to use their assigned hardcopy reading or other Web-based materials to identify key elements of the concept that have been omitted or misconstrued in the Wikipedia article. This encourages students to discern what is most central or merely peripheral to an idea, and to learn how to examine different discourses and use them critically against one another.

For my (John's) part, computer science students at the senior undergraduate and even the graduate level are adept at finding material on the Internet, but are not always skilled in assessing the value of that material. References to Wikipedia are legion in written work even at this

advanced level. This is a reminder that familiarity with, and skill using, the Internet does not imply being able to filter what flows back. Furthermore, seeing this happen so late in students' academic programs suggests that these skills need to be introduced immediately upon entry to university, if not sooner. (Alan re-enters the dialog.) I agree, and typically give my students training in the assessment of Web-based materials by requiring them to use a standard rubric such as Beck (2007) to demonstrate their ability to filter Web sources of their choice accurately.

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