12 March 2018

Re: Support for the 1201 Exemption for Software Preservation

I'm writing to support a broad DMCA exemption that is important to research in my field, digital media.

To explain my perspective, I study creative computing and develop computational art and poetry. My studies include consideration of the "high art" of recognized poets, the work of well-known computer scientists, and popular and underground work which is not well recognized. My own computer-generated books of poetry include *#!*, the collaboration *2×6, Autopia,* and *The Truelist.* My more than fifty digital projects are *The Deletionist* and *Sea and Spar Between,* both collaborations. My MIT Press books, collaborative and individual, are: *The New Media Reader, Twisty Little Passages, Racing the Beam, 10 PRINT CHR$(205.5+RND(1)); : GOTO 10,* and *Exploratory Programming for the Arts and Humanities,* and *The Future.* I am professor of digital media at MIT and live in New York and Boston.

The points I would like to make are, first, that whether my field is called new media, digital media, computational media, or something else – those of us in it use several terms for the field – it involves an important effort to understand how new computing technologies relate to and engage with our culture. Second, we need to have access to specific digital media artifacts, specific pieces of software, not just papers that describe them, not just screenshots of their interfaces. Third and last, the advent of general-purpose electronic computing is so new on a historical scale that we cannot immediately tell what work is valuable and important to study.

In this short statement I will simply justify my first claim with reference to two phenomena. One is the rise of substantial academic research focused on computation and culture but using methods that are drawn from the humanities, arts, social science, and computing. Activity in this area has been sustained for decades, with important results. The book I co-edited with Noah Wardrip-Fruin, *The New Media Reader,* was published in 2003 and helped to provide resources for undergraduate and graduate study in this area. It was widely adopted; research in the area has been is now sometimes conducted in departments specific to digital media, sometimes undertaken by individual researchers or research groups coming from a variety of disciplinary or interdisciplinary perspectives. Besides pointing to this active research, there are obvious ways that software and digital systems have direct implications in culture and society, for instance, the way that social
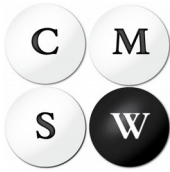
network systems such as Twitter or Facebook, essentially started to support banter between users and not to displace or deliver journalism, have been implicated in "fake news," siloing and filter bubbling to restrict user's perspectives, and other communication effects that have severe political consequences. A more positive development that involves stand-alone software is the recent advent of games known as artgames or altgames, and the many of these that call attention to social and political issues, including the implications of computing. One of these is Paolo Pedercini's *Phone Story*, which makes evident how cell phones relate to slave labor and the mining of rare earth elements, employee suicide in factories, planned obsolescence, and eWaste.

With regard to my second claim, there seems to be little needed to defend it. Literature scholars need to refer to books, not just descriptions of them; for political scientists and legals scholars it is important in general to refer to the text of specific laws. Having documentation of digital media projects, or contemporary papers written about them, is better than nothing but not at all adequate for the whole enterprise of digital media studies. Access to not only working executables, but source now, is especially important now that new scholarly approaches have emerged (Critical Code Studies, Platform Studies, Software Studies) that reveal the importance of the code level and provide ways to better understand source code in cultural contexts.

The third claim, that we cannot always know in advance what will be most important to study, is of course true of literary works and even to some extent of historical events. So it is not entirely a matter of computing being relatively new. However, there are specific examples that I can offer to illustrate how this problem has already come up in digital media studies.

Joseph Weizenbaum developed an important early computer system for natural-language processing, also considered an important early AI system. This was the ELIZA program, a general framework supporting a sort of conversation between user and computer, running the DOCTOR script, which made the program speak and respond a sort of parody of a Rogerian psychotherapist. Although this mid-1960s computational system was very simple in many ways, Weizenbaum's program was received by some users as if it were an actual person, even an actual psychotherapist. It became controversial, and eventually Weizenbaum himself denounced his program and AI in general in his book, *Computer Power and Human Reason* (1976), arguing that such systems were dehumanizing. But scholars found value in ELIZA/DOCTOR that Weizenbaum himself did not. Sherry Turkle and Ken Colby later argued that the ELIZA/DOCTOR could in fact provide therapeutic benefits, without being dehumanizing, in the same way that writing in a diary is therapeutic for some people. Janet Murray argued that as digital art, ELIZA/DOCTOR was the first effective interactive character. The program was of widespread influence, with BASIC versions of it appearing for people to type into their
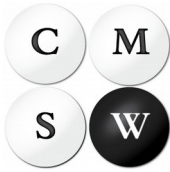
home computers and with discussion of it still happening among scholars and sometimes the broader public.

In this particular case, although Weizenbaum wrote a computer science paper about the program with technical details, it would be of clear benefit to have the source code, which has not come to light. An early LISP version is sometimes considered "original," but the program was written in MAD, Michigan Algorithm Decoder, using Weizenbaum's SLIP library. Of course, we cannot expect to rely on Weizenbaum's self-archiving efforts for ELIZA/DOCTOR, even if he thought the source code important to keep, since he denounced his project.

Along these lines, what they are not stand-alone pieces of software, few imagined that very early versions of Facebook (est. 2004) and Twitter (est. 2006) would eventually have widespread socio-political implications. It would have been hard to prepare in advance to preserve aspects of and study those systems. This is especially the case when a wide variety of earlier and later social networks, including Orkut and Ello, may have seemed just as likely to succeed at first but ended up not being nearly as important.

To focus on a specific piece of recent software, and a case where DRM is involved, *Phone Story* might have been seen as insignificant or possibly even a hoax when it first made the news, because that news was about it being banned. Apple, Inc., which maintains full control over what can be distributed on iOS because the only channel for distribution is their App Store, banned the game after only four days, making it unavailable to iPhone users. Study of this first version would be exceedingly difficult, even if it were obtained through the normal retail channel in this small window of time. Since this censorious action in late 2011, many more short games with political implications have been made, elevating the profile of these sorts of interventions and making it even more clear that they are worth study. A year after the first version's release, the *Phone Story* was released for Android phones, allowing players to actually interact with it, although not on its main target of criticism, the iPhone. Even though a version of the game is available now, how will it be possible for scholars to look closely at the two versions and see how this second edition differs from the original one?

ELIZA/DOCTOR did not have DRM, but it seems to be a strong warrant for my third claim, that we cannot know in advance what particular digital media artifacts, or even what category of digital media systems, will be of importance later on. *Phone Story*, another particular piece of software, made and legally distributed in the highly restricted environment of the App Store, was soon quashed by the company it was criticizing. While it may have seemed an offhand joke to some, it is part of Pedercini's serious, continuing work to make political statements with games, and part of a growing movement to make games more relevant to political and social issues. The path of narrow
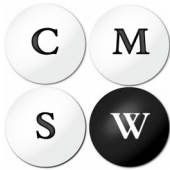
exemptions for particular types of digital works hinders the study of emerging works of this sort and study in my field more generally. A broader exemption for libraries that support scholarly research would be of great benefit, and I respectfully request you to grant the exemption that is now being considered.

Sincerely,

Nick Montfort
Professor of Digital Media