A John E. Sawyer Seminar on the Comparative Study of Cultures to be Conducted at Rice University

Platforms of Knowledge in a Wide Web of Worlds: Production, Participation, and Politics

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I. Rationale and Significance

Be it in the form of a Coursera, Historypin, or Wikipedia, platforms have been defined either as the “hardware and software framework that supports other programs” or as “a system that can be programmed and therefore customized by outside developers—users—and in that way, adapted to countless needs and niches that the platform's original developers could not have possibly contemplated, much less had time to accommodate.”¹ In essence, web platforms are programmable by third parties and must connect to other platforms through Application Programming Interfaces (APIs), which are at the heart of “ecosystems” that consist of mutually dependent communities of developers and users, all working symbiotically with the platform.² Since their inception in the 1970s, APIs have spurred the creation of new industries yet they have also threatened the existence of others. A whole slew of applications is, for example, now possible because of the Google Maps platform yet social media platforms might well put an end to the newspaper, magazine or cable news industries as we knew them. In its more recent reliance on vast arrays of servers, ubiquitous computing, and the enormity of the World Wide Web, such a general-purpose technology now promises not only large-scale change, but also significant losses, especially if left unscrutinized.

Across university campuses, API based platforms bring together creators, developers, contributors, users, sponsors, and eventually manipulators in cyber-environments where knowledge can be taught, learned, disseminated, geo-located, crowd-sourced, archived, text-mined, spied-upon, etc., all thanks to the over two decade long history of the World Wide Web. The recent exponential increase in scale may slowly be turning the cyber-world of web platforms into a new Tower of Babel where various cultures speaking diverse idioms rely on similar core technologies to build a mega-platform of shared knowledge. While in the Babel story, the tower’s ambitiousness comes at the cost of miscommunication—which presumably provokes the invention of translators—the World Wide Web banks on “HTML” and related technologies as a universal form of communication able, on the one hand, to overcome time and space yet able, on the other hand, to abolish the role of intermediaries. With all the promise that e-learning, self-publishing, and other platforms bring about, it is potentially at the cost of significant losses, be it the loss of cultural and professional agents or the loss of peripheral information when the analog is translated into the digital.

The very binary design of APIs requires both the participation of an increasing number of developers and users as well as the inevitable elimination of intermediaries, go-betweens, or agents, on the other (e.g., eBay can only function in a world where buyers and sellers come together and thus eliminates the auctioneers). Hence the Tower of Babel scenario of an ambitious world where news streams in live via social media, where money is exchanged on one’s phone, where students teach each other, where patients treat themselves, and where we can all build our own houses, all without journalists, bankers, professors, doctors, or architects.

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The rationale for the Seminar is, therefore, straightforward: If web platforms are indeed transforming the ways in which we communicate, find information, make purchases, and conduct research, they ought to be studied closely, especially when hard-won expertise is lost altogether — or, at the very least, lost in translation. By enabling teachers, students and researchers to discover, analyze, and share information, collaborate without regard to barriers of space and time, and publish their work widely, such knowledge platforms uphold the fundamental academic mission to promote the discovery and dissemination of knowledge, yet they also raise questions about what counts as expertise, who controls access to information, whether quantification and metrics are being valued over humanistic knowledge and wisdom, the incursion of neoliberal ideologies that shift power from educational institutions to profit-seeking companies, and the loss of academic autonomy and diversity. Given the speed with which web platforms are now being created, the Seminar is both timely and significant. As George Siemens warns, “Whoever has the platform sets the rules and controls the game. Diversity will be pushed to the margins…”

Coinciding with the 25th anniversary of the World Wide Web’s public debut in 1991, the 2015-16 Platforms of Knowledge in a Wide Web of Worlds seminar plans to incubate a multi-disciplinary broadly humanistic collaboration among interested tech innovators, visiting scholars, faculty and students in order to explore, critique, and experience web platforms as well as shape an intellectually diverse yet humanistically rigorous research community. Ultimately, Seminar participants will produce an edited collection of essays on the issues surrounding the production of, participation in, and politics around participatory platforms of knowledge. This endeavor will require a close exploration of consequences caused by the increasing reliance on these platforms; including the trend towards open access, changing conceptions of privacy and intellectual property, new ways of assessing scholarly productivity, and the development of interdisciplinary laboratory models of the humanities classroom, among others. It will also make use of the very platforms under discussion to develop multifaceted interpretations of the changing face of academia. Although, in some sense, all Internet platforms involve managing information (whether medical records, commercial transactions, or bureaucratic process), this Seminar will primarily focus on those that explicitly involve knowledge creation and transmission, that is, those that support education, collaborative research, public engagement in knowledge production, and publishing.

II. Cases to be Studied and Perspectives

The Seminar will examine the proliferation of digital knowledge platforms from a variety of perspectives in order to understand their impact on culture and academia. These perspectives will include interpreting the legal code governing knowledge platforms, analyzing their technological underpinnings, exploring their ethical implications, understanding their cultural history and significance, theorizing the production and consumption of knowledge through digital platforms, and examining the social groups that control, contribute to, and use these platforms.

We will consider platforms according to their functions, developer and user communities, core
technologies, approach to openness, underlying business models, and frameworks for
participation. Among the cases to be studied are the following:

- **E-learning platforms**: In 2012, Audrey Watters named the “platforming” of education a
  key educational technology trend, pointing to the rise of startups and non-profits focused
  on data interchange and interoperability in education and cautioning that education risks
  handing control over to private companies. While learning management systems such as
  Sakai and Blackboard may make it easier to distribute course materials, administer
  quizzes, support class mailing lists, and keep students informed about their grades, such
  systems have come under significant critique for focusing more on management than
  learning. Moreover, with the rise of learning analytics, which uses data from learning
  management systems and other sources to monitor student learning and identify
  opportunities for improvement, new concerns are emerging about privacy, reductive
  approaches to education, misinterpretation of data, and the costs of implementation. To
  resist corporate “solutions” to the complexities of learning, the “edupunk” movement
  urges a “Do It Yourself,” open, community-driven approach to learning using blogs, wikis
  and other open tools. Universities are using massive open online course (MOOC)
  platforms such as edX and Coursera to provide broad access to education, raise their
  profiles and develop insights into how people learn. Yet MOOCs stir up concern about
  diminishing face-to-face learning, faculty autonomy, public education, and lack of access
to computers and/or internet.

- **Publishing platforms**: University presses face significant challenges as a result of
  shrinking library budgets, declining university support, and the shift from print to digital.
  To confront such challenges, one study calls for a collective effort to develop a platform
  “that would serve as a catalyst for collaboration and shared capital investment in
  university-based publishing.”4 Even as many humanities scholars seek publishing
  contracts in order to achieve tenure or promotion, they lament long lag times, small
  audiences, and the limitations of print. With the emergence of web-based publishing
  platforms, scholars are experimenting with publishing models that speed the circulation
  of research, make possible open peer review and discussion, and incorporate rich media.
  For example, Scalar, an open source authoring and publishing platform developed by
  the Alliance for Networking Visual Culture, supports collaborative authoring, reader
  discussions, multiple navigation paths, and a range of embedded media formats
  (including in partnership with archives). Many open publishing projects face challenges
  in motivating and rewarding author contributions, performing quality control and
  validation, and finding viable sustainability models. As open access mandates gain
  steam, enabled in part by dissemination of scholarly work through digital platforms,
  academics are protesting that academic freedom is being violated. Faculty also tend to
  resist such platforms largely due to tenure and promotions concerns. Seminar
  participants and visiting scholars will consider the implications of digital publishing

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platforms for shaping, disseminating, and discussing knowledge, examining their underlying assumptions about how academic knowledge is produced and validated, technical frameworks, and approaches to intellectual property.

- **Collaborative research platforms/cyberinfrastructure**: As scientific research becomes more and more collaborative, collaborative research platforms have emerged to facilitate and provide tools for data sharing, to maintain communication within research teams, and to manage knowledge. For example, NanoHUB provides a collaborative research platform for nanotechnology research, offering access to simulation tools, data, educational resources, collaboration space, and dynamic publishing capabilities. Efforts, such as Project Bamboo, to create cyberinfrastructure platforms in the humanities have run into challenges such as defining a clear focus, building and sustaining community, and managing collaboration. Cyberinfrastructure platforms raise key questions: What motivates researchers to contribute to such platforms? How can these platforms be sustained? How might such platforms work in other disciplines less inclined toward collaboration?

- **Crowdsourced knowledge platforms**: Crowdsourcing platforms enable the public to contribute to the production of knowledge, whether by identifying galaxies (Galaxy Zoo), studying folding proteins (FoldIT), gathering information about birds (eBirds), transcribing a philosopher’s manuscripts (Transcribe Bentham), or editing encyclopedia entries (Wikipedia). Even as they allow basic scholarly work to be accomplished on a much larger scale, such projects raise fundamental questions about the nature of expertise and authority, the incentives and rewards for participation, and how to manage large-scale collaboration.

### III. Thematic Threads

All **thematic threads** pertinent to this seminar can be grouped under the rubrics of production, participation, and politics (See specific topics in Appendix B). For example, the production of platforms, specifically in academia, promotes collaboration, interdisciplinarity, freely-accessible information, and laboratory-like classrooms structures. Many of these side products of platforms are positive, allowing students hands-on research experience and scholars exposure to a broader audience. Their **production** can also allow the investigation of new research questions not feasible for a lone researcher without the technical tools to ask, much less explore. While these positive aspects of production have been widely, and justifiably, praised, this shifting emphasis toward the development of technologically based research production also raises several issues that merit investigation.

Simply by searching the Web, accessing a reading on a course management system, or “liking” a Facebook post, we **participate** on an Internet platform at some level. Indeed, Internet participation assumes a bewildering array of forms: “It’s not even clear what to call participation today: consuming, collaborating, voting, protesting, belonging, friending, exploiting, liking,
lobbying, volunteering, working, laboring, relaxing, or adding? Do we ‘consume’ Google searches or Facebook Ads or do we ‘collaboratively create’ them through our wisdom as a crowd?5 Whether we participate actively or passively, our data feeds the Internet, providing insights into what we buy, who we know, how we feel, and what we think. How people participate online is conditioned by who owns the platform, the terms of engagement, core technologies, and the platform’s purposes. The Internet has been hailed for enabling open participation, making everyone a creator and publisher, unconstrained by the middleman. Through Internet platforms, authors can interact with their audiences, researchers can both access and share data, large research projects can invite contributions to distribute labor and engage the public, and instructors can make available course content. But even as authors seek to engage audiences using new publishing platforms, they often struggle to find participants. Researchers worry about giving too much of their valuable data away and not being recognized and rewarded for their contributions. Participation raises the specter of surveillance, exploitation, and being marketed to. As people feed data to machines, it becomes easier to use metrics such as learning analytics and research productivity measures to monitor and pigeonhole them. Further, online platforms may strengthen cultural hegemony and provide an environment for racism, sexism, and other forms of discrimination.

The **politics** involved in the “seigniorial” gaze, of a monarch or the State, have historically relied on various forms of spatial organizations in order to both collect information and control populations. As Michel Foucault famously pointed out, this was certainly true in times of pestilence when a 17th-century town was segmented and its inhabitants fixed in place, supervised, constantly located, examined, and distributed among the living, the sick, or the dead. Visibility became a trap and a spatial choreography of power eventually became illustrated in Jeremy Bentham’s panopticon where the very invisibility of the overseer guaranteed order, whether this overseer is a curious child, a scholar of human nature, or even a voyeur taking pleasure in spying. While the panopticon enhanced axial, yet unidirectional, visibility, it also imposed lateral invisibility in order to prevent plotting among convicts, contagion among patients, cheating among schoolchildren, and coalitions among workers. Regardless, space was shown as able to provide privileged positions from which the exercise of power could not only be more economic and effective, but also could serve to intensify social forces, i.e., to increase production, spread education, and cure plagues. While such a model for the exercise of power relied on an actual architectural structure, it was certainly destined to spread in a diffused, multiple, and polyvalent way throughout the social body. Fast forward to the recent Snowden affair and it turns out that the State did just that with the National Security Agency’s hyper-surveillance program, the scale of which far exceeds what Bentham could have possibly imagined. If Bentham’s Panopticon required a particular spatial platform for it to function, NSA’s hyper-panopticism functions in a cyber-space populated by web platforms where millions, if not billions, of people, leave behind collectible traces that can be monitored.

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In considering the significance of the production, participation, and politics of web platforms of knowledge, the Seminar will explore the following broad, cross-cutting topics, listed alphabetically:

- **Academic Production**: What constitutes web-based academic production? Many widely-used scholarly archives (such as the Whitman Archive) exist, but in some cases, the development of the infrastructure, rather than the research it is intended to support, is the end result. Considerable resources, both monetary and human, have gone into the development of academic knowledge platforms, and it is timely to investigate how many have yielded articles, books, or courses. Alternatively, is the production of such platforms scholarly and soundly pedagogical in and of itself?

- **Authority**: Through crowdsourcing, distributed groups of people can come together to solve complex problems and contribute their own ideas and labor toward the achievement of a larger goal. Yet crowdsourcing platforms raise profound questions about the nature of expertise, as amateur contributions may seem to be given equivalent value to expert knowledge. Sometimes the “wisdom of crowds” can become “the madness of mobs,” as when a group of Reddit users misidentified a suspect in the Boston Marathon bombing, but sometimes amateurs can make vital contributions to knowledge, such as top players of the citizen science game FoldIt, who perform better than computers in folding proteins. How might we ensure the reliability and authority of knowledge produced through crowdsourcing platforms? And how might we bring new insights to complex problems by inviting social involvement?

- **Democratization**: Because platform production is labor-intensive, most projects rely heavily on students, and many adopt a model in which faculty, staff, graduate students, and undergraduates all work together. The democratization of expertise in the laboratory-style working group has many positive benefits for students, as they are able to work alongside faculty as fellow researchers, participating in the production of tangible scholarly materials. Yet because students often are producing the bulk of the work, do such models also entail a loss of academic rigor and wisdom, or perhaps even a loss of credit to some of the students who bring more than technological skills to the project? Are more technologically skilled students privileged over other students who might have strengths in other areas of the project?

- **Funding**: Does the increasing possibility of grant money for the production of platforms shift scholarly emphasis? With more universities and individual scholars seeking grants, is humanistic research favoring not the best scholarship but rather the scholarship that will bring in the most funding? Do funding priorities negatively impact other forms of inquiry? Do the existence of grants specifically for digital projects (such as in the National Endowment for the Humanities) contribute to the demise of non-digital research, or is other research inexpensive enough that such funding shifts do not have a significant effect?
● **Globalism:** Internet platforms hold out the promise of global participation, so that anyone with Internet access can share a photo, contribute to an online conversation, or consume information from around the world. Yet this dream of global community is undermined by differences in culture, language, law, censorship, and access to technologies. Internet tools, interfaces, platforms, and protocols tend to favor the English language and Anglo-American cultural representations, and many Internet organizations are dominated by English speakers. What biases underlie Internet platforms? How might platforms be designed and operated to promote diversity and to respect local cultures?

● **Governance:** Participation on Internet platforms is conditioned by the terms of service agreement set forth by the commercial provider or by the governance policies set forth by the sponsoring organization. Terms of service agreements can make a claim on the intellectual property of participants, limit their creativity, and reduce their ability to use or share work that they produced or purchased. On the other hand, even as open platforms such as Wikipedia seek to promote civic engagement, they often set forth complex governance rules that may close off participation to the uninitiated, reinforce hierarchies and perpetuate polarization. What models of governance give participants a stake in decision-making, offer effective dispute resolution, and ensure that community needs and values are met?

● **Information security:** Paper documents can be preserved and locked up in an archive that has a stable and safe environment. While this may not be sufficient in terms of a document’s permanence and the safety of the information it holds, it is our most long lasting method to date. How durable and, by inference, how secure is the information that gets uploaded into the ‘cloud’ of a web-based platform?

● **Intellectual Property:** Who owns what? Is code text? Does a programmer have a share in the property of a web-based platform that was otherwise conceived, yet not scripted, by a professor when, inversely, a mason does claim ownership of a building designed by an architect?

● **Interdisciplinarity:** When teams comprising humanists, librarians, and computer scientists, for example, work together, new kinds of research are certainly possible and new collaborative forms of inquiry emerge. But does the necessary interdisciplinarity of platform production emphasize a shallow but broad mode of research? In training students to work in interdisciplinary environments, are they gaining valuable skills, or is their attention spread too thinly?
• **Labor:** Proponents of networked collaboration such as Clay Shirky and Yochai Benkler argue that the Internet unleashes the ability for people to contribute to projects that serve the common good. Yet others worry that Internet participants are being exploited, as they contribute to Internet platforms for little or no compensation. What are the costs of “free”? As Trebor Scholz argues, “The social web appears to be free for us to use, but there are hefty social costs; oligarchs capture and financialize our productive expression and take flight with our data. We, the ‘users,’ are sold as the product. The loss of our privacy, with all its psychological and political consequences, buys us the convenience of ‘free,’ innovative services.” Nevertheless, as Scholz acknowledges, some types of Internet participation foster creativity (such as fan fiction), community (such as online support groups), and social change (such as the Arab Spring movements). In academia, tenure and promotion processes often do not reward contributions to online platforms, even if the researcher is reaching thousands of readers through a blog, contributing to an important scholarly conversation through an open peer review process, or sharing data that leads to future research. How might we identify and shape models of Internet participation that recognize and reward labor?

• **Mobility:** Increasingly Internet participation takes place on mobile devices. Particularly for those without desktop computers and standard Internet access, mobile devices can allow them to conduct trade, gain access to valuable information, respond quickly to disasters, and connect to the world. Mobile platforms enable researchers to collect data remotely, whether at archaeological digs or during geological fieldwork. While mobile platforms bring the convenience of constant access to the Internet, their incursion into all aspects of life can lead to divided attention (with disastrous and at times even deadly consequences) and superficial engagement.

• **Monopoly:** Web-based platforms increasingly belong to particular milieus owned by specific corporations. For example, the simple act of selecting a particular cellular phone sets one up to navigate in the worlds of Google or Apple apps, which predetermine specific research or productivity platforms. Does this eventually lead to a form of gigantism that monopolizes vast groups within a single platform?

• **Openness:** Open access and sharing of knowledge and skills are philosophical underpinnings of many web platforms. This allows for easier production of other digital projects, as teams do not have to reinvent structures, rewrite codes, and rethink approaches with every new endeavor. Yet if everything is open, who owns what, and does it matter? And is this a bigger issue in countries that practice capitalism than in countries that follow other economic philosophies? How can universities properly assess original contributions to the production of new platforms when projects themselves are increasingly networked?
• **Privacy:** Considering that the digital traces and time-stamped metadata left behind when users interact with a web-based platform are susceptible to being mined by third parties, all sorts of ethical questions can be raised in terms of the right to privacy and the potential abuses of power. Mobile platforms, alone, raise privacy concerns, as the device captures information about where we are and with whom we have communicated, which can be exploited by companies and governmental organizations. How, therefore, might we protect privacy while taking advantage of the ability to always be connected?

• **Polyglottism:** Interdisciplinarity also entails a certain polyglottism. Faculty producing such platforms must become versant in technical, programming, and metadata languages and priorities, for example. Rather than focusing on their strengths, faculty are required to learn at least at a surface level fields far outside their realm of expertise. While their research might benefit greatly from this extension of their knowledge, it might also stagnate as they shift their time and focus on learning other skills necessary for the development of digital research infrastructures.

• **Scale:** Web-based platforms facilitate a quantitative, and exponential, jump in scale in terms of the amount of the information that a single person is now able to handle. Are there consequences to this scalar shift with regard to memory and a need to develop rigorous practices for distant (versus close) reading?

• **Translation:** While the Tower of Babel may have provoked the dissolution of a single language shared by all, the World Wide Web, in a way, attempts to revert the process by creating a shared “HTML” language into which all can be translated. Any form of translation, however, occurs at the cost of some loss when such things as deliberate typographic alignments, semantic slippages, or even irony itself, are often sacrificed by the very process that translates them from one idiom to another. While this may certainly have an equivalent in the way Optical Character Recognition transforms books into digital text, for instance, what else is lost in translation when analog material becomes available online via web-based platforms?