Joyce and the Graveyard of Digital Empires

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The example of Shakespeare looms large in the discipline of book history in English, largely because Shakespeare’s plays present specific problems—the “bad” quartos, the absence of manuscripts, and so on—that book historians have found useful in working out their theories. His plays are “good to think with.”¹ My interest is in a similar dynamic that shaped the theoretical formulations of scholars working in the early decades of the digital humanities: the example of James Joyce. *Ulysses*, in particular, was seen as an example of hypertext *avant la lettre*, and Joyce’s works were made the focus of many pioneering DH projects, such as the *James Joyce Text Machine*, 2000–2001, “a collection of machine-readable primary texts, critical commentaries, and related indexes and concordances” (qtd. in Landow and Delany, 195), and *Ulysses in Hypermedia*, 2001, a project that “grows out of and explores the possible connections between *Ulysses* and hypertext by presenting Joyce’s book in an electronic media format” (Groden, “Introduction,” 360).

Not all of these projects were successful, which is to say that not all of them came to fruition or sustained themselves for later scholarly use. In fact, *Ulysses* has become something of a graveyard of empires for DH projects, in the sense that the novel’s history with the digital humanities between 1970 and about 2000 is more notable for inspiring ambitious ventures that faltered and failed than for producing projects that survived. Even so, for many scholars working to convert the theoretical concepts of new media into principles for scholarly work, Joyce, like Shakespeare, proved good to think with. Studying Joyce can therefore help us understand a surprising amount about the history of the digital humanities. This chapter examines some representative artifacts from the graveyard of Joycean digital empires as a way of inquiring into the thinking and conceptual models of the literary scholars whose projects, in a critical wave that peaked in the nineties and early aughts, pioneered what would become known as the digital humanities.

What can we learn from the fate of these projects—particularly, their failure to thrive—in the changing technological and social environments that defined the late
age of print and the early age of the web? As I discuss, the prominent role that Joyce once enjoyed in new media studies reflected a compatible (if never unified) suite of approaches to media theory that came into full bloom in the heyday of hypertext theory between the 1970s and early 2000s. For media and textual scholars as divergent as Ted Nelson, George Landow, and Michael Groden, the formal navigation of links seemed to be the most revolutionary feature that would transform digital reading environments, and the creation of multimedia editions emerged as the ultimate challenge of media scholarship. In terms of both the architecture of hypertext and the creation of digital editions, Joyce offered a model and an illustrious ally.

These same approaches were subsequently subject to a downtrend in the light of what Andreas Kitzmann called, in 2006, “the apparent decline of hypertext, especially in terms of its uses as a vehicle for creative (literary) expression and as a platform for theorizing the nature of reading/writing and the concomitant roles of the reader/writer” (98). In recent years, the media-theoretical implications of hypertext and of the digital edition as the means to create an ideal or archetypal imagining of the text have diminished as new challenges associated with a rapidly growing set of textual platforms, tools, practices, and communities online have emerged. Indeed, in the realm of the web—what hypertext theorist Robert Coover once called a “noisy, restless, opportunistic, superficial, e-commerce driven, chaotic realm, dominated by hacks, pitchmen and pretenders, in which the quiet voice of literature cannot easily be heard” (Kitzmann 98)—many other tools and topics now clamor for our attention. Moreover, as digital humanists and book historians design new platforms for exploring textual materials, they have come to emphasize the role of agents around the digital text, such as publishers, librarians, and technicians, as much as the text itself (quoted in Kitzmann 2006, 98).

Still, the story of how and why Joyce served as a trellis for hypertext and hypermedia theory, providing guidance and support for the new field—via prior critical frameworks associated with Joyce and via Joyce-authored texts that served as exemplars and training grounds—can provide new insights into the intellectual history of the discipline. It can help explain how early scholars in the digital humanities created a usable past for themselves from book history and textual studies and clarify why many of their projects are no longer available for readers to access. The lessons of these projects remain relevant to our efforts to design sustainable projects in the digital humanities so that our present interpretive communities will be available to speak to the unknown interpretive communities of the future.2

The Gutenberg Elegies

Starting in the 1960s, after the 1962 publication of Marshall McLuhan’s The Gutenberg Galaxy, James Joyce began to acquire prominence as a common resource for scholars working across the domains of hypertext theory, media studies, corpus analysis, and the design of digital reading interfaces. Joyce served the needs of these
scholars, whose work constituted the collective staging ground for what would later become the digital humanities, in part because he is a literary writer and many early scholars of new media had literary backgrounds. For these scholars, the Joyce connection was highly legible, and for their departments, it was advantageous: finding literary genealogies for emerging media formats like hypertext had the benefit of promoting subject areas in which literature departments already had expertise. Such genealogies still carry direct implications for university practice today, even if the set of disciplines that participate in these discussions has widened. For example, when Jerome McGann, writing in the 2010s, describes the book as a machine, or when George Landow, writing in the 1990s, describes hypertext as a book, they are contributing—in different decades and with different theoretical emphases, but in one common practical respect—to a strategic disciplinary tradition by which scholars of literature have sought to establish a disciplinary claim to the digital medium by framing it as an extension of earlier, literary, formats.3

But if literariness were the only cause for Joyce’s elevation into the digital media theory canon, any literary author might have served in his place. As was true of Shakespeare for textual scholars, Joyce’s Ulysses presented a particularly attractive suite of formal features for early media theorists. In its privileging of the nonlinear and the nonsequential; its exploration of alternative narratives within the main narrative; its abundance of connections and cross-references, of associative linkages between widely spaced blocks of text; its apparent foregrounding of the activity of the reader, both in scenes of reading staged within the narrative and in the burden Joyce places on the reader to contextualize details and connect disparate passages; its presentation of esoteric material that positively demands annotation; and its appeal to a multitude of sensory and media forms, suggesting the possibility that the novel might be more faithfully realized as a Gesamtkunstwerk—in all of these ways, Ulysses seemed, to many scholars working in the final decades of the twentieth century, to model key attributes of digital textuality at large and hypertext in particular.4

Joyce served as the chosen ancestor for hypertext theory because his work offered a specifically literary predecessor for hypertext itself. Hypertext had a reputation—indeed, still has the reputation—of being a path that pointed from new media back to the old media of print.5 In other words, hypertext belonged to media theorists’ sense of the architecture of texts even before the rise of the web. Ted Nelson, who coined the term hypertext in 1962, defined it as “non-sequential writing—text that branches and allows choices to the reader, best read at an interactive screen. As popularly conceived, this is a series of text chunks connected by links which offer the reader different pathways” (Nelson, 0/2). The structure of a hypertext, both in Nelson’s vision, which he articulated most fully in his 1960 design for a hypermedia system, Xanadu, and in Vannevar Bush’s earlier designs for another hypermedia system, the Memex, is a network of documents made up of two constituent parts: links and nodes.6 Today, the link–node model is especially prominent in the discourse around social networks, which have long since surpassed hypertext as a site
of critical excitement. But for Nelson and Bush, the structure of nodes and links seemed important largely because of how it could transform textual architectures, and for the new media theorists who adopted the concept for their work, it pointed the way to models of reading and writing that could still be discussed within canonical frameworks of textuality.

In 1992, George Landow, a scholar of literature at Brown, published *Hyper-text*, which would become a landmark book on hypertext theory. Like Nelson, he defines hypertext in terms of nodes joined by links; and like Nelson, he emphasizes the opportunity this structure presents to lead the reader along branching rather than linear paths. He also stresses that hypertext is fundamentally an information structure for which computers serve as a useful, but not obligatory, platform and that it therefore preserves many of the pleasures and principles of “page-bound text” (81), including the following abilities: to follow intratextual references to other locations within the text; to follow intertextual references to other texts (in this connection, Landow quotes Michel Foucault as saying the “frontiers of a book are never clear-cut” because “it is caught up in a system of references to other books, other texts, other sentences; it is a node within a network”); and to read the text as nonlinear (“or, more properly, as multilinear or multisequential”) if the reader so desires (3–4). The difference is that hypertext builds these paths into the physical architecture of the text, whereas page-bound texts do not; nonetheless, Landow later writes, “Any work of literature—which for the sake of argument and economy I shall here confine in a most arbitrary way to mean ‘high’ literature of the sort we read and teach in universities—offers an instance of implicit hypertext in nonelectronic form” (*Hypertext 3.0*, 55).

In point of fact, Landow uses Joyce regularly in his work as an example of analog hypertext. For example, he points to the “Nausicaa” episode of *Ulysses* as an example of “implicit hypertext,” since it points outward constantly to lyrics, novels, advertisements, and so forth, which, although outside the boundaries of the central text, nevertheless bear heavily on its meaning (*Hypertext*, 55). For Landow, “Nausicaa” helps illustrate two important consequences of his general theory: first, that the work of navigating and sequencing hypertexts lies, to a degree not seen elsewhere, in the hands of readers, who find themselves obliged to fill gaps and make connections; and second, that the links that connect different nodes—here, the extratextual references—are associative, rather than linear and hierarchical. As in the case of computational hypertexts, in which “a text becomes a node when it is electronically placed in relation to other materials,” it is a web of relation that ultimately constitutes “Nausicaa” (Slatin 162).

In this exemplary use of Joyce as a text for media criticism, Landow was drawing on what had already become a modest tradition. Marshall McLuhan claimed that *The Gutenberg Galaxy* started out as a plan for a book with the title “The Road to *Finnegans Wake*” (Theall, “Beyond the Orality/Literacy Dichotomy,” 1). His reasons for choosing that particular work as a reference are obvious; *Finnegans Wake* is a book intensely aware of new forms of communication such as film and radio,
and its sentences metamorphose through imitations of radio noise, cinematic projection, and the visual bedlam of television. To put it another way, *Finnegans Wake* is a book about the life of the book in a world of multimedia—the same concept that McLuhan sought to describe in *Gutenberg*.

McLuhan’s works were essential reading in MIT’s Media Lab in the 1960s and 1970s, where researchers were working to design a more perfect medium that would combine the visual, the auditory, and the tactile, like communication in McLuhan’s “tribal and collective ‘global village’” (Theall, *The Virtual McLuhan*, 180). McLuhan’s vision for media profoundly informed the early ideas of cyberspace that those researchers developed, and McLuhan drew inspiration for his vision, or at least a symbol of his notion that aesthetic intuition precedes technological application, from his reading of Joyce. For an empire builder such as McLuhan, Joyce’s work could present, within the constraints of the printed text, a program for a new medium meant to explode the possibilities of the printed text.

It is not surprising, then, that so many early works on the potential of hypertext and cyberspace, from MIT and elsewhere, cite Joyce as a forerunner: for example, a 1992 essay by Donald Theall subtitled “James Joyce and the Pre-History of Cyberspace”; a 1997 essay by David Gold that calls *Ulysses* “the perfect hypertext subject” (quoted in Theall, “A Retrospective Sort of Arrangement”); a journal of *Hypermedia Joyce Studies*, founded in 1994; and books on Joyce and cyberculture (Tofts and McKeich), Joyce and hypermedia (Armand), and “the Joyce era of technology” (Theall, *Beyond the Word*) that make the connection explicit. Again and again, these works reinforce the idea that the web will extend and amplify the methods of typographical culture: the information technology of the codex, which Joyce brings to its last, best bloom, prepares us for “the hypertextual poetics of nodal screens” (Tofts). The tradition of using Joyce as a model to predict the future of media overlaps with the tradition of using the codex form as a model to predict the future of media: technology researchers who took inspiration from McLuhan, who in turn took inspiration from Joyce, of necessity drew on McLuhan’s understanding of Joyce in bibliographic terms, while literature scholars found Joyce a useful tool for theoretical work that scholars in other disciplines might have called “the colonializing intent of literary scholars” over digital media (Punday, xi).

*The Technologizing of the Word*

If one is going to imagine digital media as an extension of the Gutenberg Galaxy, it helps to have a Gutenberg Bible to provide a formative textual model. Among Joyce’s works, *Ulysses* was a popular target for early efforts to create a hypertext edition of a literary text, including projects by Heyward Ehrlich, Michael Groden, Marlena Corcoran, and Donald Theall. In general, the critical apparatuses surrounding these projects argue for an affinity between the structure of *Ulysses* and the structure of hypertext; by extension, *Ulysses* appears as an ideal subject for hypertextualization. Yet in 2007, when Mark Marino surveyed these efforts in an article titled
“Ulysses on Web 2.0,” he determined that few of these early editions still existed, in any concrete form, for readers to access.\textsuperscript{14} In many cases, even those that had moved beyond the design phase left no products for current readers to access, beyond sample passages that demonstrate the viability of the projects in principle. Unintentionally, the works of Joyce became a graveyard for early work in the digital humanities. In one sense, this graveyard represents the fall of the “golden age” of hypertext. In a larger sense, however, it reflects a suite of values and attitudes that later waves of digital scholarship would directly challenge: in particular, an approach to digital architectures that took print architectures as its primary blueprint; a formalist preoccupation with abstract affordances; a focus on the artifact rather than the agents around the artifact; and, although the importance of this point would only become clear over time, an insufficiently urgent approach to sustainability issues surrounding digital texts.

One example of these early projects is the \textit{James Joyce Text Machine} (JJTM), developed by the Rutgers literary historian Heyward Ehrlich and published online in 2001. In the “Preface,” published at the same time—and which is available for readers to view, although the larger hypertext novel it describes is not—he notes, “Despite several projects [to develop a digital \textit{Ulysses}] which have [already] been undertaken, an actual completed electronic hypertext of the work has yet to appear.” The JJTM puts hypertext tools, such as HTML, Cascading Style Sheets, and JavaScript, to the task of displaying variant texts and critical notes in the space of the screen. Like many such projects, it was developed only to the level of a prototype, using a sample text: in this case a passage from “Calypso,” the episode of \textit{Ulysses} that introduces the novel’s protagonist Leopold Bloom.

This design actualizes many of the major aspects of hypertext theory: the ability to “link all the versions or variants of a particular text,” as well as to other locations within a text; the ability to use cross-references as trails to additional texts or to other locations within the text; the ability, on the part of the user, to move in a nonsequential order; and a corresponding preoccupation, on the part of the designer, with the effect that moving in a nonsequential order will have on traditional narrative elements such as suspense (Landow, \textit{Hypertext 3.0}, 101). It, too, describes \textit{Ulysses} as an “incipient hypertext” and uses that formal affinity (focusing, in this case, on the “network of internal and external referents” that the novel presents for the reader to follow) as a reason to use Joyce’s novel for an exemplary hypertext project.\textsuperscript{15} During its creation, the project had a high profile, its progress chronicled in reports at major Joyce conferences.\textsuperscript{16}

But the most ambitious of the early efforts to give \textit{Ulysses} a public IP address and a name was Michael Groden’s “\textit{Ulysses in Hypermedia}.” As with the JJTM, a major goal of the project was to physically instantiate the reader’s path through Joyce’s thick network of referents; as with the JJTM, an underlying aim was to solve novel problems in hypertext editing and, by extension, to address some of the more interesting formal issues in humanities computing by solving for Joyce. Begun in the mid-1990s, his project had the end goal of presenting “11,000 pages
of manuscripts and some 5,000 pages of commentary on the manuscripts” (Marino, 477). The contents of the edition, when complete, would include the novel itself; manuscript pages; scholarly annotations; a list or perhaps a full archive of secondary critical works; source texts like *The Odyssey*; tools for students; maps, photographs, video, and audio, including a full audiobook; and “space for users to add their own comments and links.” The project had as auspicious a beginning as any might hope for: the University of Pennsylvania Press, in partnership with the CD-ROM company Voyager, agreed in advance to publish the edition. The Joyce estate granted permission to use three chapters of *Ulysses* to develop a preliminary model. As of 1998, Groden reported, some one hundred Joyce scholars and fifteen “hypertext experts” from scholarship, publishing, and the arts had signed on to help contribute to the project (“Perplex in the Pen,” 241).

Historically, digital approaches to *Ulysses* have tended to converge with contemporaneous trends in technology and their social impact. In the case of “*Ulysses* in Hypermedia,” the critical discourse that surrounded the project was typical of critical approaches to hypertext at that time in emphasizing (following the remediating critical tradition that we have been tracing) that the heritage of hypertext could be traced directly back to text. As he reported, Groden approached the work of building a prototype foremost as a problem of unbinding the book (“Perplex in the Pen,” 240–41). A text in book form has basic constraints—the number of pages, the cost of printing, the capabilities of the print medium—that limit the number and kinds of glosses that an editor has to deal with. A digital hypertext can extend its glosses infinitely, which means that the hypertext editor must find ways to control and rationalize the potential chaos. The actual incompleteness of hypertext reifies the notional incompleteness of Joyce’s novel as a problem of design, so that the procedures of exegesis that readers bring to the print edition now become interior and primary structural elements, built into the interstices of the body of the text.

“*Ulysses* in Hypermedia” is perhaps the most prominent example of a lost digital edition of Joyce. Great though its ambitions were, in the end, nothing came of the project except for a handful of articles and a CD-ROM prototype of a sample episode (produced in 1996) that is no longer available for access. (Starting in 1996, Groden began exhibiting the prototype of “James Joyce’s *Ulysses* in Hypermedia” at conferences; in 2002, his project merged with a digital manuscript project at SUNY Buffalo called “Digital *Ulysses*: An Annotated Hypertext and Manuscript Archive.” In 2003, the editors of “Digital *Ulysses*” published a model version of the “Proteus” episode on the Web. Ultimately, however, the Joyce estate refused the editors permission to make use of the rest of Joyce’s texts. Consequently, “Digital *Ulysses*” closed shop in January 2004.) The fact that the 1996 prototype is no longer in existence illustrates a property of digital objects that scholars have only recently placed in the foreground of their work: usually, they need an audience to survive. Simply to build the tools they work with, digital humanists usually need to work with technology professionals; large-scale projects often use students to input data
or perform similar labor; and such projects, once finished, require continual tech
support and maintenance. These are issues that loom large in recent conversations
about sustainability, which often give as much attention to user research and finan-
cial issues as they do to technological issues (see Prescott, for example). As Susan
Brown et al. note, more than is the case for a printed book, a digital project needs
ongoing support, preferably from an audience that clamors for its upkeep as much
as from boutique funding. Thus it seems imperative that we design DH projects
with a conscious eye to fostering ongoing user activity.

The Future of the Book

As a general rule, the tradition of genetic criticism has looked down on the ten-
dency of poststructuralist critics, even as they argue that textual meaning is inher-
ently unstable, to build those arguments on texts that they treat as stable, fixed, and
isolated from historical context (see, for example, Groden, “Ulysses,” 57). But the
arrival of genetic critics into the field of digital editorial theory did not immedi-
ately change the assumption that the digital text, destabilized though its structure
might be, would exist outside of social and material factors that might weigh on its
sustainability, even in the case of digital texts that aimed to highlight the social and
material existence of literary texts through a proliferation of drafts.

Consider, for example, Marino’s 2007 article, where he presents ideas of his own
for a digital text of Joyce—or texts, rather, since his edition would include many
genetic variations (482). Like other writings of the period that described notional
hypertext editions of Ulysses as a way of illustrating concepts about the relationship
between Joyce and new media, Marino’s article is of interest because of what it illus-
trates about the models of digital reading that were being built on Joyce’s text, as
well as the ways in which scholars who modeled the digital text were responding
to the rapidly changing environment of the web. For example, his article reaffirms
the ability of motivated scholars to make interpretations of Ulysses converge with
new digital trends, so that Joyce could seem to prefigure even trends that succeeded
or expanded on the excitements of hypertext. Marino’s proposed edition would take
advantage of the social features of Web 2.0, which enabled the active participation of
readers. This “social edition” of Ulysses would reflect, he says, the novel’s own atti-
dudes toward annotation, those that favor open dialogue and social exchange: his
interface would allow users, both expert and amateur, to contribute annotations,
and the resultant commentary would bloom in diverse voices, just as we see, in
Joyce’s novel, in the exemplary discursive spaces of the printing house, the newspa-
per office, the National Library, and, of course, the bars (490). This attitude toward
annotation cohered beautifully with the rise of “Web 2.0” (then still a contested term),
a new class of technologies that had transformed the web into a read-write platform,
allowing readers to share and comment on content. Once again, scholars arrived at
a new technological dispensation only to discover that Joyce had been there first.

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It is important to note that Marino takes for granted the presence and the participation of users. He argues that the very nature of hypertext will entice users to contribute their comments to the site: "Hypertext beckons with a siren song of technological promise, if not to complete, then to expand and fulfill" (479). This kind of focus on the abstract laws of the medium, with the technology acting, in empty space, to fulfill the telos of the text, may seem odd from a perspective that sees technology as the subject, not the source, of human behavior. In recent years, concerns with the digital artifact proper have come into conversation with discussions about the range of agents around the digital artifact that a project must also sustain: libraries that preserve artifacts, granting agencies that fund ongoing work, scholars who must push through successive appeals for funding, as well as users who must be wooed. As with recent discussions by Susan Brown and Bethany Nowviskie that emphasize the challenges of building sustainable textual platforms on the web, Marino's imagined edition illustrates how digital textuality relies as much on flesh-and-blood practices as the textuality of the material book ever did. Compared with more fundamental problems of sustainability, the actual importance of the problems that Marino describes may be seen in the fact that the edition he imagines remains a hypothetical construct, never forced to confront the reality of living users, their constraints, and their desires.

Here Comes Everybody

Today, the discipline that has come to be known as the digital humanities encompasses too much activity and incorporates too many histories to identify a single genealogy for its protean operations. The history that I have presented, which focuses on efforts to theorize and reify Ulysses as a hypertext artifact, reflects the position that hypertext theory once held in the center of media studies, when most media scholars worked out of literature departments and McLuhan presided over the discipline as a trickster-sage (a posture, the historian Donald Theall has suggested, that he adopted from Joyce's Shem the Penman; The Medium Is the Rear View Mirror, xviii ff.). The appeal to a center is no longer so easy to make.

Digital studies of Joyce and digital editions of his works did not end with the hypertext era. However, recent studies, as they have emerged from the noisy, restless digital world of the twenty-first century, differ from their predecessors in marked ways. Most notable of these differences are, first, a stronger focus on issues of sustainability, a turn that, in practice, has entailed an Eisensteinian shift from a focus on the text as an isolated object to a focus on agents around the text; and, second, a reluctance to locate the origins of the technologies they use in Joyce's writing itself. Two brilliant projects from the past few years represent these new trends and points of difference: Amanda Visconti's Infinite Ulysses, a "social edition" of Ulysses that enables users to share and annotate content from Ulysses via social media, and Jonathan Reeve's Open Critical Edition of Ulysses, which enables users to "mark up" Joyce's text using the procedures of the Text Encoding Initiative.
Visconti’s *Infinite Ulysses* began as a dissertation project at the University of Maryland. The project’s design, as an interactive edition of the text emphasizing the sharing, curating, and ranking of annotations, draws on the twenty-first-century triumph of social media platforms: users must employ their existing Facebook and Twitter accounts to engage with the text and each other. (The project’s copytext is the digital edition of *Ulysses* produced by the Modernist Versions Project, which developed open-access editions of selected modernist texts for use in the digital projects of all comers who needed copytexts.) On accessing the project’s website, the user of *Infinite Ulysses* would see a page of Joyce’s text that looked, in formatting and layout, like a page of the Groden *Ulysses*. After logging in, she could use connective-media tools from Facebook and Twitter to annotate Joyce’s text (this took the form of highlighting the text, which caused a sidebar to appear in which the user wrote an annotation), share annotations, vote on the quality of annotations, create “favorite” passages, and “bookmark” passages. She could also search or filter annotations using metrics like creator, folksonomy tag, and type of annotation. When the project’s beta stage came to a close in June 2016, after a year and a half of operation, *Infinite Ulysses* had garnered “24,000+ unique visitors and 775 unique site user accounts. Readers authored 1,168 annotations on *Ulysses* and tagged those annotations with 287 unique terms to make them filterable by theme, reader needs, and more.” By any measure, the project was a success, drawing active participation from both the scholarly community and the larger community of lay readers that Visconti hoped to attract.

As we have seen, projects on Joyce in new media often reflect the most recent excitements of digital technology. The change in digital technologies that “social-reader editions” like *Infinite Ulysses* (and Marino’s notional edition) reflect is the rise of Web 2.0: a new class of technologies that has transformed the web into a read-write platform on which readers can add, share, and remix content at will. Yet the digital frameworks are not all that have changed: although *Infinite Ulysses* exploits the affordances (liking, favoriting, sharing) and interrogates the culture of what José van Dijck calls “connective media,” we find in neither *Infinite Ulysses* nor its critical apparatus (white papers, for instance) the claim that Joyce prefigured connective media (Visconti, “‘How Can You Love a Work’”). As van Dijck has shown, the rise of the connective-media ecosystem has fostered the emergence of diverse new tools, platforms, user practices, and back-end mechanisms. Amidst these novelties, hypertext may seem to have lost its revolutionary aura, which helps explain why Joyce’s elective affinity with hypertext has declined in critical discourse.25

In contrast to the earlier works I have discussed, *Infinite Ulysses* foregrounds the goal of sustainability. The major aim of the project, Visconti says, is to investigate “participatory interface design for knowledge-building,” which entails treating interface design as a branch of community building, which in turn is a necessary requirement of digital sustainability (“*Infinite Ulysses Beta*”). The reliance of digital artifacts on the labor of human agents for development, support, and preservation
is (it is now clear) a condition of digital textuality, even as it presents a challenge
to older tendencies in the humanities to privilege the labors of the solitary scholar.
Digital projects usually rely on the work of many people, often volunteers, in the
development stage; once finished, they still require human labor to provide tech
support and maintenance. *Infinite Ulysses* asks how to not only enable community
labor of this kind but also make it appealing. Though the project is on hiatus as of
June 2016 and thus can only be accessed as an “archival non-interactive version,”
Visconti explains in her notes on the project’s hiatus that she has set up the condi-
tions for the project’s maintenance as an archival version and eventual return as an
interactive version, so that it will not become another vanished digital edition of
Joyce (“Infinite Ulysses Beta”).

Similar emphases, though with different technological forms and affordances,
govern the open-source critical edition of James Joyce’s *Ulysses*, a project that opened
to users in 2017. This edition, too, has as its copytext a version of Gabler’s 1984
*Ulysses*, albeit one acquired with Gabler’s assistance rather than through the Mod-
ernist Versions Project. It is open access and open source, meaning that users can
access both the text and the underlying code free of charge. While the intervention of
*Infinite Ulysses* was to subject the reading of *Ulysses* to the affordances and practices
of social-media platforms, the intervention of this open-source critical edition is to
make the text available to editorial glossing via TEI XML semantic markup (Reeve).

Like *Infinite Ulysses*, this project places a notable focus on sustainability, in part
through attention to the activity of mediating agents in the production and cura-
tion of the text. The project’s affiliates actively campaign to attract the interest and
participation of new contributors. As well, the project has shared “the enriched
corpus of episode files and metadata” with the University of Oxford Text Archive,
an archival website that helps catalog and preserve digital literary texts for the use
of scholars (Reeve). Sharing the data produced within the project’s ambit with insti-
tutions that specialize in digital preservation, and working to bring the project to
the attention of a critical mass of users, will help facilitate the preservation of the
work—while attending to the groundedness of even virtual artifacts in “brick and
mortar” institutional and social frameworks.

Moreover, both projects make use of Joyce’s texts without presenting them-
theselves as an outgrowth or reification of Joyce’s aesthetic. In the case of the open-
source critical edition, the use of *Ulysses* as the central text seems to derive from
a set of motivations—Reeve’s critical command of modernist literature; the asset of
the participation of important textual scholars and editors of Joyce; the opportunity
presented by the entrance, in 2012, of *Ulysses* into the public domain—that bear no
special relation to Joyce’s aesthetic, save for the fact that, like any great literary author
if perhaps a bit more so, his work is challenging and requires careful glossing. Simi-
larly, *Infinite Ulysses* takes *Ulysses* as its central text, Visconti says, because its fame
together with its difficulty could help attract a critical mass of readers to the project.
(Her own critical orientation, she says, might otherwise prompt her to choose an
author from a historically marginalized community [“Designing Digital Editions”]).
To be sure, echoes of the older era of scholarship on Joyce and technology can still be heard in our new dispensation. In a blog post, Visconti describes in passing Joyce’s novel as a hypertext while listing critical questions that may emerge from her project: “what actually happens to Joyce’s hypertext when it becomes digitally hypertextual and hyper-annotated?” But she nowhere engages that issue further; she is acknowledging a critical tradition, reminding us that a substantial body of scholarship has treated the connections between Joyce and hypertext, rather than actively pursuing it (“Designing Digital Editions”). Similarly, at a recent conference on “Joyce and the Digital Age,” I had the opportunity to ask a panel that included Reeve and other scholars about the relationship between Joyce and hypertext; the response was a matter-of-course agreement from the panelists that *Ulysses* is a form of proto-hypertext. Yet the critical analyses that have emerged from Reeve’s critical edition of *Ulysses* do not argue, in the tradition of writing about Joyce and hypertext, that Joyce’s writing constitutes an “analog” or “incipient” form of TEI. Indeed, most people who work with TEI would find the use of a single author as an analogy to explain the operations of TEI markup—Joyce, Walt Whitman, Junot Díaz, *anyone*—to be nonsensical on its face. I have never seen anyone make such an attempt in a publication, a conference talk, or even casual conversation. The marriage of new technologies and textual studies continues, but the era is over in which scholars find persuasive (or necessary) the effort to establish the origins of digital studies or legitimize its presence in English departments in the works of a great literary predecessor.

Ultimately, Joyce’s role as the conceptual end of early hypertext projects tells us as much about how their creators viewed the editorial challenge of the early electronic era as it does about Joyce’s elective affinity with new media in a more abstract sense. The creators of these projects fully believed that when they had restored Joyce to his proper form as hypertext; when they had freed his multisensory effects as hypermedia; when they had mastered his superabundant verbal and informational reserves; when they had fully theorized his concepts of reading, authoring, and annotation and reified those concepts as usable tools, then they—indeed, digital literary scholarship as a field—would fully realize the possibilities of that era’s novel media forms. From our vantage point in the present, some of the guiding principles of those early ventures—McLuhan’s pursuit of the logos of electronic technology or Landow’s notion of hypertext theory as the master narrative of new media—no longer seem like the keys to the digital kingdom that they once did. Yet the *pursuit* of Joyce remains the first great romance of a discipline still in formation.

**Notes**


2. The topic of sustainability has a rich literature in the digital humanities. See, for example, Nowviskie.
3. On the rationales by which English departments established a disciplinary claim to the field of digital studies, see, for example, Matthew Kirschenbaum, “What Is Digital Humanities and What Is It Doing in English Departments?” ADE Bulletin 150 (2010), especially pp. 59–60.

4. To be sure, Ulysses was subject to other kinds of exploration on the part of digital scholars: for example, the novel’s breaking down of hierarchy and its presentation of the world as a set of unordered items could seem, in combination with its vast scale, to place the novel in conversation with database theory.

5. As Bella Dicks et al. note, while discussions of hypertext have tended to focus on the computer, classic definitions of hypertext, for example those of Nelson and Landow, identify it by structure rather than medium. “For many of the leading hypertext theorists, though, the computer is merely an enabling technology—a platform” (44).

6. A node is a document that is linked to another document. A link is a connection between two nodes; in the digital environment, this usually takes the form of an anchor, which is created by adding an anchor element (<a>) to a text written in HTML and which triggers a jump from one node to another.

7. I am grateful to Matthew Gold for this observation.

8. He is also fond, for exemplary purposes, of the “Dark House” passage in “In Memoriam,” which is likewise strewn with references pointing to other texts (Landow, “The Rhetoric of Hypermedia,” 95).

9. A “polysemic, encyclopedic book designed to be read with the simultaneous involvement of ear and eye,” The Gutenberg Galaxy dreams of rendering an “all-inclusive, all-encompassing medium”—a concept for which media scholars would later popularize the name “virtual reality.” The affinity of this dream with McLuhan’s work is clear (Theall, “Beyond the Orality/Literacy Dichotomy,” 7). For instance, here is the full text of A. J. M. Smith’s poem, “A Taste of Space” (1967):

McLuhan put his telescope to his ear;
What a lovely smell, he said, we have here.

10. The successors who took up McLuhan’s torch, including Walter Ong and Eric Havelock, contributed to the ongoing romance between new media theory and book history (Theall, “Beyond,” 4).

11. A 2002 article by Darren Tofts, subtitled “Ulysses and the Poetics of Hypertextuality,” is a case in point. Following the lead of Nelson, who emphasized that he regarded hypertext as a “literary phenomenon,” Tofts describes hypertextuality as a poetics, a way of describing textual activity; thus texts that display hypertextuality need not have a computational basis. The texts he has in mind possess a fragmentary structure, which, though ostensibly disconnective, is in fact hyperconnective; the parts link up to each other in an overdetermined network of associations, and meaning arises, in part, through the convergence of subjects—the serendipity of links. The work of navigating and interpreting these texts lies, to a special degree, with the reader, who must reckon with a text that is not closed but open, subject to revision, interpolation, and other forms of manipulation. “On the basis of such a theory,” says Tofts, “it is clear that Ulysses is already hypertextual.”
12. For example, Espen Aarseth, in his foundational work *Cybertext* (1997), repeats the maxim that hypertextuality, as a form of textual behavior, arises not from digital technology itself, but from the very traditions of print technology. Aarseth, too, cites Joyce as a precursor of what others call hypertext and he calls “cybertext,” which he describes as a textual poetics that requires “an interactive, combinative approach to reading.” Or again, Jay David Bolter, who (with Richard Grusin) coined the term *remediation* and who uses Joyce, again, as a common example in his work, insists on the ways in which electronic text defines itself in relation to print. (Speaking in 1991, he comments that “*Ulysses* and particularly *Finnegans Wake* are themselves hypertexts that have been flattened out to fit on the printed page.”) Or again, writing in 1999, Todd Rohman and Deborah Holdstein use Joyce, for them an analog figure of digital architectures, to argue that the digital world recapitulates the structures of print. “When we note textual wanderings, narrative fragmentation, and uncertainty,” Rohman and Holdstein write, “we speak not of the Internet but of Joyce’s ‘novel,’ the death-knell to modernist formalism . . . Not unlike cyberspace, it . . . opens a variety of possibilities for readerly interaction” (252, 260).


14. Marino notes that, for “technological determinists and hypertext promoters . . . *Ulysses* has always been both the dream text and ancestor” (475).

15. On the main page, a menu presents the options of viewing the sample passage in plain text: with line numbers, with manuscript variants displayed in different colors, or with annotations in different formats, such as mouseovers or windows in the header of the page. Another option enables the user to consult the primary passage, while a pull-down menu at the footer of the page allows her, at the same time, to consult secondary resources: “Recurring Motifs,” “Schema,” “Correspondences,” and so on. (Some of these links still function; others lead only to mock-ups.)


17. Marino is quoting from Chamberlain here.

18. The project originated with Johns Hopkins University Press. When, around 1992, the publication of Landow’s *Hypertext* attracted widespread interest, Groden’s editor at the same press asked Groden if he would prepare for them a hypertext *Ulysses*. “Without
knowing much about what hypertext was,” Groden says, “I agreed” (“Perplex,” 239). As of 1997, the Voyager Company had folded.

19. For example, in a 2001 article, Groden argues that certain kinds of literary works in print and manuscript, especially experimental works that play with footnoting conventions or offer multiple pathways through texts, represent “analog” versions of hypertext, waiting only for clickable links to complete their manifest design Citation is from Bolter 2001.

20. Michael Groden, “‘James Joyce’s Ulysses in Hypermedia’: Problems of Annotation; Annotation in Print and on a Screen.” http://www.clemson.edu/caah/cedp/tech%20colloquium%202001/groden%20files/printscreen.html.


22. On definitions of completeness in print and digital environments, see Brown (“Don’t Mind the Gap”).

23. Ironically, the very diversity of communities and technological systems that would flourish on Web 2.0, and therefore of histories that would apply to it, would hasten the end of the critical refrain that traced the history of new media, usually meaning hypertext, back to Joyce.

24. In addition to Nowviskie, see, for example, Bretz, Brown, and McGregor; Brown; and Fitzpatrick.

25. Writes the media historian Joseph Turow, “At the end of the first decade of the twenty-first century, a computer user searching on the Web is unlikely to consider the enormous achievement represented by the highlighted links that beckon from the screen. In 1945, by contrast, Vannevar Bush was excited just to imagine the possibility of a hyperlink. He saw it as opening new gates to human understanding.” Joseph Turow, “Introduction: On Not Taking the Hyperlink for Granted,” in Turow and Lokman Tsui (The Hyperlinked Society, 1).

26. The scholars involved with the development of this edition include Jonathan Reeve, Hans Walter Gabler, Ronan Crowley, and Chris Forster.

27. TEI XML is a markup language that describes textual elements more fully than HTML does and enables them to be subjected to computational analysis. Editors can use this markup language to describe a textual element by appearance, literary meaning, literary function, linguistic function, and more. Scholars can then use these descriptions to analyze texts statistically via machine learning.

28. As, for example, at the conference “Joyce in the Digital Age,” Columbia University, October 1, 2017.

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