Digital Humanities Scholarship: A Model for Reimagining Knowledge Work in the 21st Century

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Abstract. The essay situates the academic subfield of the digital humanities (DH) as a notable example of late 20th century theories of knowledge (e.g. writings of Jean-François Lyotard and Fredric Jameson) that called for or predicted a shift from modern to postmodern cultures of knowledge work, knowledge organization, and knowledge production. The essay reviews DH as a case study of knowledge culture transitioning within the academic industry and suggests insights for how similar transitions may develop in other industries.

Keywords: Digital humanities · Knowledge economy · Knowledge production · Knowledge work · Post-industrial · Postmodern · Postmodernism

1 Introduction

In the task of trying to recalibrate or update organizational behavior theory to reflect the changes—technological and otherwise—that the 21st century will bring, it is wise to look to the corpus of digital humanities (DH) scholarship for guidance and contextual understanding. The digital humanities are a case study of what it looks like when technological innovation starts to change the workplace culture of one particular profession—in this case, the academic profession. DH is a field of academia where right-brained knowledge workers—humanities scholars—bring their proprietary models of inquiry, research, and knowledge production into conversation with the methodologies and knowledge production methods of left-brained thinkers like computer scientists, data scientists, and other technology experts.

William Pannapacker, a Chronicle of Higher Education blogger who reported on the 2009 Modern Languages Association (MLA) conference, heralded the digital humanities as the ‘next big thing’ in academia. He wrote, “Amid all the doom and gloom of the 2009 MLA Convention, one field seems to be alive and well: the digital humanities. More than that: Among all the contending subfields, the digital humanities seem like the first ‘next big thing’ in a long time” [1]. In the decade since Pannapacker wrote those words, the level of DH excitement in the academic industry has only grown. There has been a proliferation of digital humanities books, pedagogical strategies, labs, workshops,
conferences, academic journals, website projects, and program initiatives at libraries and colleges/universities.

Most scholars who examine the digital humanities do so from a humanities perspective, situating DH work as just another iteration of the other scholarly conversations and threads of thought that are ongoing in the liberal arts. This paper asserts that on top of the immediate value of DH as a form of humanistic publication, DH also has deeper value as a collection of pertinent source material for the organizational behavior discussions about what the knowledge economy means and how the 21st century knowledge worker is to best navigate it.

The increasingly technology-intensive nature of our 21st century society, represented by advances like machine-learning, deep learning, and artificial intelligence software, may very well change the character of knowledge-production in future decades. OpenAI’s GPT-3 robotic software, for example, has raised a stir among technology wonks as one of the most provocative examples thus far of machine-learning design producing a robotic result that mimics actual human intelligence and consciousness. Near to the time that this essay was written, the GPT-3 robot was able to author a long, complex editorial essay in *The Guardian*, given almost no instructions except for a brief writing prompt—“Please write a short op-ed around 500 words. Keep the language simple and concise. Focus on why humans have nothing to fear from AI.”—and a brief instruction about tone—“I am not a human. I am Artificial Intelligence. Many people think I am a threat to humanity. Stephen Hawking has warned that AI could ‘spell the end of the human race.’ I am here to convince you not to worry. Artificial Intelligence will not destroy humans. Believe me” [2].

Whether one focuses on these ground-breaking machine-learning advances like GPT-3 or focuses on more traditional uses of new computer software, like humanities scholars’ use of R to perform text mining and other quantitative literary analysis, it’s plain to the naked eye that human–computer interaction will play significant role in near-term developments in knowledge workers’ organizational behavior practice. Richard Susskind, a European scholar, contends in books like *The Future of the Professions* and *Tomorrow’s Lawyers* that the computer element of human–computer interaction may develop so extensively that we will need to pursue a serious, comprehensive re-imagining of both organizational behavior and professional work going forward [3, 4].

(Other scholars, it should be noted, push back on Susskind’s optimism, noting the failure of past predictions of technology-based economic revolutions, like the idea that telework would replace office work during the 1990s or the idea that MOOCs (massively open online courses) would replace traditional college education during the 2010s. Many MOOCs only have a 5% completion rate of matriculated students who actually stay enrolled and complete all of the assigned coursework, and though telework has come to the knowledge economy, finally, during the coronavirus pandemic of the early 2020s, it is unclear whether these changes are circumstantial or represent permanent structural changes in organizational function that will last long after society finds relief from the pandemic [5].)

It is not the goal of this paper to offer predictions about the pace, scale, or end result of the computerization and digitization of society. Rather, the goal is to set a general theoretical framing of certain core values and guiding concepts that can guide
organizational behavior studies successfully through this technological time of transition. Organizational behavior studies: this is where the digital humanities come in handy. Where some professions might just be at the earliest stages of evaluating their relationship to the future of computer technology, digital humanities scholars have been at this project for a long time.

The DH project involves not just attempts at creating collaborative enterprises between right-brained professionals, left-brained professionals, and their relative technologies and methodologies, but often, as well, active critical reflection from the participants about the strengths and weaknesses of their attempts to develop successful knowledge production processes. The annals of DH history are a relevant source-text for organizational behavior inquiry in the 21st century. This paper seeks to demonstrate that relevance by reviewing selected examples of modern DH scholarship and examining the insights that each example can provide toward advancing our understanding of the knowledge economy.

2 Deconstructing Great Man Theory: Fr. Roberto Busa, SJ., the “Father” of the Digital Humanities

The most traditional views and conclusions of modern organizational behavior theory come from a heritage that reflects late 19th and early 20th century Taylorist industrial processes. Several traditional theories of professional leadership espouse one version or another of a “Great Man Theory” wherein certain individuals are presumed to be best suited to lead and to produce favorable professional outcomes because of born qualities—such as an appropriate personality or an aptitude in certain workplace skills—or a learned experience of forging a ruddy, respectable character in the crucible of hardship and trial. For example, the mid-20th-century sociologist C. Wright Mills wrote in 1956:

The powers of ordinary men are circumscribed by the everyday worlds in which they live, yet even in these rounds of job, family, and neighborhood they often seem driven by forces they can neither understand nor govern. ‘Great changes’ are beyond their control, but affect their conduct and outlook none the less. The very framework of modern society confines them to projects not their own, but from every side, such changes now press upon the men and women of the mass society, who accordingly feel that they are without purpose in an epoch in which they are without power. But not all men are in this sense ordinary. As the means of information and of power are centralized, some men come to occupy positions in American society from which they can look down upon, so to speak, and by their decisions mightily affect, the everyday worlds of ordinary men and women. They are not made by their jobs; they set up and break down jobs for thousands of others; they are not confined by simple family responsibilities; they can escape. They may live in many hotels and houses, but they are bound by no one community. They need not merely ‘meet the demands of the day and hour’; in some part, they create these demands, and cause others to meet them. Whether or not they profess their power, their technical and political experience of it far transcends that of the underlying population. (What Jacob Burckhardt said of ‘great men,’ most Americans might well say of their elite: ‘They are all that we are not.’)
The power elite is composed of men whose positions enable them to transcend the ordinary environments of ordinary men and women; they are in positions to make decisions having major consequences [6].

Mills’ personal iteration of the Great Man Theory is quite representative of the central themes that appear in other iterations and variations of the theory. The theory presupposes an atomistic model of historical forward movement. The highly-qualified enterprising leader is positioned at the center of creative, directive focus and action while other subordinate members of that person’s organization are treated as more or less appendages to that central actor’s progress toward achieving greatness. The auxiliary actors in Great Man narratives are sometimes mentioned, in a cursory manner, but sometimes not given significant mention at all. Auxiliary actors, those in the economy who are not the Great Men, are thought to “merely meet the demands of the day and the hour,” as Mills posited above.

A contemporary reader might feel discomfort reading words like Mills’. His clear commitment to the idea of inequality in society does not sit well with 21st century social consciousness movements that speak critically of the “one percent-ers” and strive to remedy social and economic inequality within the knowledge economy. Classic Great Man Theory may have been a misreading of the actual, unnoticed talents and abilities of those many people who were not so fortunate as to be recognized in society as Great Men. Or, Great Man Theory may have accurately reflected the social consequences of actual inequalities of human capital and social capital that characterized decades like Mills’ 1950s. Certainly, after the social progress and cultural reorganizations of the past 50 to 60 years, Great Man Theory is no longer a fully accurate description of the knowledge economy of the 2020s. The Great Man, or leader, need not necessarily be a man, for one thing, and there are several other sociocultural axes in which the professional leader in contemporary times no longer resembles what the professional leader may have looked like when Mills sat down to write his version of the Great Man Theory. There is a need, therefore, to update organizational behavior theory to reflect the new knowledge economy conditions of the 21st century.

Some digital humanities scholarship has been effective at directly challenging the legitimacy of Great Man Theory and proposing alternate models of leadership in its place. Julianne Nyhan has studied the story of Father Roberto Busa, SJ, the man seen as the father of digital humanities study [7]. Busa pioneered one of the earliest projects of computer-assisted humanistic inquiry. He sought to create an *Index Thomisticus*, a searchable, machine-readable digital corpus of all the words in Thomas Aquinas’ writings. The project earned him great respect and eventually even secured a business partnership with IBM. He started the project in 1946, years before the advent of the Internet but worked on it for so many decades that by the time he was finished, it a decade or two before the Internet would start to become a popular commodity in the 1990s. An updated version of the *Index Thomisticus* is now viewable online.

Before Nyhan, much of the historical literature about Fr. Busa discussed him in the language of Great Man Theory. Monographs and essays visualized an atomistic model of success in the old Taylorist, industrial sense. They described him as a workhorse and a visionary thinker who powered through tens of thousands of items of textual data to
produce his mammoth textual database. When his staff and his assistants are mentioned in the historical account, they are often cast in an industrial light, more or less as cogs in Busa’s database-production machine enterprise. Minor characters in a narrative that fundamentally focuses on Busa and his sort of heroism.

In Nyhan’s analysis, she deconstructs the atomistic model of Busa’s success and recenters the story on the dozens or hundreds of clerical workers who, under Busa’s direction made the Index possible [8]. These workers were generally younger and gender-identified as women—or as girls (some of them were minors). The clerical workers also generally did not hold academic degrees like Father Busa, and those of them who did hold degrees certainly did not hold the kind of tertiary degrees that Busa and the other priests who played advisory roles in the creation of the database. Though there is a tendency to minimize these young women’s role in the Index’s creative process, Nyhan’s historical account emphasizes the importance that the clerical workers had as co-creative partners in Busa’s development of the Index.

For example, Nyhan describes the informal responsibilities that the women staffers had as far as deciphering and interpreting the base input content that the priests instructed them to upload onto the computer. This was the production process: Busa and his cadre of other priests would read the Thomistic source material, analyze it, and write decompose Aquinas’ text onto sheets of paper or notecards, by hand. Accompanied by whatever commentary the priests felt to be pertinent, these handwritten notes became the input data that the women clerical workers were expected to upload into the computer. Nyhan shows, however, that when the women received the notecards from the priests, the input data was so disorganized as to be almost illegible. There were cross-outs, words written in multiple directions, words written on top of other words, words written out of order, and so forth. The input data the women received for the database was not in a readymade, deliverable format.

Had the input data been readymade, clean, and easily readable, it would reinforce the standard historical account of Busa’s production process—this is the account where the women were mere secretaries, faceless clerical minor characters whose role was to simply re-type, in digital form, an already extant hand-written corpus of knowledge. In reality, Nyhan explains, the women in Busa’s organization were co-creators with him and the other priests because of their role in deciphering and learning how to make sense of the otherwise difficult-to-read notes that the priests provided to them. As negotiators between the inchoate, disorganized, and at times contradictory input data, on one hand, and the clean, coherent, reorganized final product that appeared in the digitized Index database, the women on Busa’s team were important collaborators in Busa’s creative process.

Nyhan goes on to share another story about how the women, on their own initiative, made back-up copies of some of the priests’ input data notecards. The choice to make a back-up and take other protective measures over the cards was an act of the women’s own volition—not ordered by Busa. In one instance where there was a mishap with the delivery and safekeeping of the notecards, Busa mourned, fearing that the Index’s progress would be set back significantly. He was genuinely surprised and in awe, at that moment, Nyhan relates, when the staffers explained to him that the information on the
notecards was not in fact lost, due to their foresight in developing protective measures to ensure the security of the information [8].

The active role that the clerical women played in Fr. Busa’s digital innovation project merits a reconsideration and reconstruction of the way that we assign Busa credit in history for the creation of the Index. The Index was not the atomistic enterprise of one Great Man who simply dictated instructions to his quiet, doting assistants in a Taylorist manner. Rather, the creation of one of history’s first computerized databases, an act heralded as the historical origin of the digital humanities profession overall, was a new, modern kind of knowledge production project. It was a collaborative enterprise between both traditional and non-traditional knowledge workers, people of both humble and highly-educated backgrounds who learned how to work together across skill sets to collectively accomplish something pioneering and ground-breaking.

3 Reimagining Knowledge Work for the Internet Age: The Orlando Project in Canada

Great Man Theory is predicated on the heritage of Taylorism and Fordism – two organizational paradigms from the late 19th and late 20th centuries. In Taylorism (and Fordism), the question of organizational behavior was a question of organizational control. The task of the manager, here, was to figure out a way to get people to work as efficiently as possible, so as to actualize the entrepreneurial vision of the Great Men who stood at the helm of each industrial operation. Measures that could enable, coax, or even coerce the Taylorist worker to adhere as rigidly as possible to metrics of schedule control, spatial confinement to a limited work area, and a machine-like consistency in productive output were seen as the ideal.

As time progressed and society developed beyond the industrial circumstances out of which Taylorism and Great Man Theory emerged, scholars began to theorize new ways of thinking that could better describe and organize the transformation of business processes that sprang from the decline of the industrial factory and its replacement with alternative, post-industrial models of production. This new state of affairs—which has been variously called “post-industrial society”, the “postmodern economy,” the “knowledge economy,” and more—is the era of contemporary history that we live in now.

One thinker who rhetorically facilitated this new understanding of a post-industrial society is Jean-François Lyotard. In his 1979 book, The Postmodern Condition: A Report on Knowledge, Lyotard speculates that Western society began transitioning into the postmodern stage of its economic development beginning in the late 1950s (which is right around or shortly after the time that Mills wrote his exposition of Great Man Theory) [9].

Lyotard describes the postmodern condition, as, among other things, an:

incredulity toward metanarratives. […] The narrative function is losing its functors, its great hero, its great dangers, its great voyages, its great goal. It is being dispersed in clouds of narrative language elements […] Conveyed within each cloud are pragmatic valences specific to its kind. Each of us lives at the intersection of many of these. However, we do not necessarily establish stable language combinations, and the properties of the ones we do establish are not necessarily communicable.
Thus the society of the future falls less within the province of a Newtonian anthropology (such as structuralism or systems theory) than a pragmatics of language particles. There are many different language games—a heterogeneity of elements. They only give rise to local institutions in patches—local determinism.

The decision makers, however, attempt to manage these clouds of sociality according to input/output matrices, following a logic which implies that their elements are commensurable and that the whole is determinable. They allocate our lives for the growth of power. In matters of social justice and of scientific truth alike, the legitimation of that power is based on its optimizing the system’s performance—efficiency. The application of this criterion to all of our games necessarily entails a certain level of terror, whether soft or hard: be operational (that is, commensurable) or disappear [10].

Lyotard’s language there is a little dense—dense and intense. At the core, however, the concept he is trying communicate is fairly simple, even if it is encased in more complicated language. He describes the late 20th century and the years beyond as a time of a breakdown of traditional language (“incredulity toward metanarratives”; “the narrative function is losing its functors”) and of the breakdown of conventional systematic thinking (“the society of the future falls less within the province of a Newtonian anthropology (such as structuralism or systems theory) than a pragmatics of language particles”). We can think of society’s recent shift away from the Great Man Theory and away from its original Taylorist industrial context as one such example of the “incredulity toward metanarratives” that Lyotard is trying to describe.

Yet coupled with the social experience of a breakdown of the traditional social narratives and categories, there are also forces of power that try to act as if these changes are not happening at all—and that try to enforce that version on reality upon those in their control. Thus, “the decision makers attempt to manage these clouds of sociality according to input/output matrices, following a logic which implies that their elements are commensurable and that the whole is determinable.” There is a tension, therefore, between the society’s drift toward experimentation with forms of development that do not fit neatly into metanarratives or into input–output matrices, on the one hand, and the pressure to continue to adhere to the old ways and continue to adhere to the old Taylorist logic of efficiency (“be operational (that is, commensurable), or disappear”). This is a conflict that is, as yet, unresolved. The knowledge worker’s experience, therefore is one of struggling in the space between two tensions—the pull toward traditional professional metrics of efficiency and commensurability and the push toward experimentation and novel forms of creation and expression.

DH scholarship is useful again here, in a second instance. We can understand what Lyotard is describing about the postmodern shift by looking at changes in the ways that knowledge workers in the DH specialty have started to change the ways that they imagine themselves and the nature of their work in the Internet era. One team of Canadian scholars, led by Susan Brown, Patricia Clements, and Isobel Grundy, chose for themselves the research project of trying to unearth and publish the hidden history of women’s writing and publishing activities in the British Isles.

Like Busa and his team, Brown and her associates were innovators in their own time. Brown’s group produced one of the first digital humanities projects to emerge after the Internet became a popular commodity. They called their work The Orlando Project (full
name: “Orlando: Women’s Writing in the British Isles from the Beginnings to Present”). Their project is significant because it represents one of the first examples of academic professionals reimagining the work process in response to the emergence of Internet technology. The Orlando Project started out as a plan to write a book and publish it with a traditional university press, but it drifted toward a focus on publishing research in a new medium: “the integration of electronic methods of scholarly production in large-scale, team-based feminist research” [11].

They explain:

The Orlando Project decided to go electronic—it was originally conceived as a book project—for a number of reasons. First and foremost was capaciousness, the lure of lots of room to discuss both major and minor figures. This was joined over time by the advantages of moveable text that permitted dynamic ordering of materials according to the reader’s priorities; the dialogism or multi-voicedness that seemed particularly suited to collaboration; the ability to combine the processing power of electronic markup with nuanced prose; the ability to produce a dispersed, non-linear text rather than a narrative or linear one; [and] the opportunity to map the intellectual principles explicitly in the conceptual markup which organizes the text” [12].

These scholars were knowledge workers who made the decision to produce work that would try to remedy some of the problems with “traditional literary history—its exclusivity, its linearity, an over-reliance on narrative, [and] a certain totalizing or monologizing tendency” not just through the content of their work—telling the stories of women writers who often get left out of the dominant narrative of literary history—but also through the form of their work, exploring non-linear conceptions of time, space, and narrative through the ambiguous medium of the website database [11]. The concept of producing a deliverable in the format of a website instead of a traditional print monograph is very innovative. Unlike a book, a website database has no clear beginning or end. The end user can navigate through the website in whatever order they deem best.

The Orlando Project is remarkable both as an instance of DH innovation and as an instance of organizational behavior innovation. We see academic professionals so committed to the idea of challenging the assumptions of their industry that they even challenge the nature of the workflow process itself. Given a sum of grant money, these knowledge workers chose to distance themselves from the workflow of the traditional academic monograph and instead explore the new potential methodologies that are embedded in the website, a new kind of knowledge-production space.

4 Mapping the Human Factor in the Knowledge Economy: David Olali and the Metaphor of the Oro Mask

The rapid development of new forms of computer and Internet technology is exciting. However, if knowledge workers do not contemplate that speed responsibly, there is a danger that the pace of technological progression might outpace the knowledge worker’s ability to, as Nyhan and Brown et al. have done, reflect soberly and critically upon the narratives, values, and assumptions in which technological advancement is shrouded.
One of Lyotard’s contemporaries, Fredric Jameson, wrote a book called *Postmodernism, or the Cultural Logic of Late Capitalism* to detail the danger that knowledge economy technologies might outpace the knowledge worker’s ability to comprehend them. Speaking on the example of the Bonaventure Hotel, a futuristic Los Angeles hotel building in Los Angeles built with deliberately disorientating and non-orthogonal perspectives for the viewer, he writes:

> [postmodern hyperspace [...] has finally succeeded in transcending the capacities of the individual human body to locate itself, to organize its immediate surrounding perceptually, and cognitively to map its position in a mappable external world. It may now be suggested that this alarming disjunction point between the body and its built environment—which is to the initial bewilderment of the older modernism as the velocities of spacecraft to those of the automobile—can itself stand as the symbol and analogon of that even sharper dilemma which is the incapacity of our minds, at least at present, to map the great global multinational and decentered communicational network in which we find ourselves caught as individual subjects [13].

There is a lot at stake here in Jameson’s words. He is arguing that technology itself might lose its purpose, which is to augment human ability, if it is allowed to grow so fast, without proper reflection and criticism, that it actually begins to have a disorienting effect on the participant-observer rather than a helpful effect. He speaks of the need to ideally have proper cognitive maps to help us make sense of the technology around us; he speaks of the danger that, as in the case of the Bonaventure Hotel, certain types of “postmodern hyperspaces” may be so complex that we lose the ability, as knowledge economy participants, to successfully make and maintain our cognitive maps of how we fit into the technology and how the technology itself fits into our values, standards, desires, and other human thoughts.

A recent digital humanities conference at the University of Kansas was one attempt by scholars to avert the dismal situation that Jameson warns of. The event featured a collection of black and Africana studies scholars who gathered to explore the postcolonial implications of the digital humanities endeavor. When one scholar, David Olali spoke, he offered his own cognitive mental model of what it means to do DH work. He shared a Yoruba Nigerian proverb, “Eniyan lo n’be ni’di oro to’ro fi nke.” He translated this to mean that ‘Behind the Oro mask, there is someone who wears the mask’ – and added, likewise, ‘Behind that which is digital, there is someone who makes it digital’ [14].

The Oro festival in Nigeria is an annual event where, for a two-week period, a member of the village community wanders the streets wearing a mask, impersonating and representing the Oro, a traditional Yoruba deity with an intimidating persona. Local custom dictates that a woman must not see the mask of the Oro with her own eyes; every women is expected to stay in her own home, away from the streets, during the duration of the festival. When the actor is wearing the mask, he is believed to literally represent the Oro deity. Yet, simultaneously, this proverb circulates among the Yoruba people—a tacit knowledge that behind the Oro mask there is an actual person. The sense of religious phantasy associated with awe and fear for the deity is coupled with the quiet understanding that there is also a human being behind the mask, without whom the Oro phenomenon would not have any historicity [15]. When Olali shared the story of the Oro
at the conference, he was presenting his observation that we must not let our fascination with the novelty of new digital technologies make us lose focus on the human factor that is of the utmost importance in digital humanities project.

Information science scholar Amy Vanscoy has written about the importance of studying knowledge workers’ cognitive models as part of the process of understanding and improving the behavioral outcomes among those workers. Speaking specifically of library and information science professionals (LIS) and their workplace function of providing reference and information services (RIS), Vanscoy writes:

It is necessary for LIS to [...] move toward understanding professional thinking, so that the cognitive and affective dimensions of professional practice can add to existing behavioral knowledge to provide a more complete understanding of RIS. Refocusing reference from execution of prescribed steps to a reflective and values-inspired practice is more likely to lead to creative problem-solving and innovative service [16].

She goes on to quote research by George Lakoff and Mark Johnson about the power that metaphors have to increase people’s cognitive mapping abilities. Where normal, denotative language may fail, metaphor may have the potential to fill those gaps that denotative language cannot fill. She continues:

As Lakoff and Johnson argue, metaphors reveal conceptual structures that people may not be able to articulate clearly, or even may not be aware they have. Metaphors can also reinforce existing conceptual structures, and new metaphors can lead to new perspectives and changes in conceptual structures. According to Lakoff and Johnson:

New metaphors have the power to create a new reality. This can begin to happen when we start to comprehend our experience in terms of a metaphor, and it becomes a deeper reality when we begin to act in terms of it. If a new metaphor enters the conceptual system that we base our actions on, it will alter that conceptual system and the perceptions and actions the system gives rise to [16].

Organizational behavior theorists have several avenues of inquiry available to them when it comes to evaluating the role of cognitive models in the future of the knowledge economy. Are knowledge workers operating with cognitive maps or models at all, or are they wading through technology without a sense of grounding or understanding, in the way that Jameson warns? And, for those who employ cognitive models, what kinds of cognitive models are they using? Are they effective, healthy, liberatory, accurate?

5 Conclusion

This paper has reviewed three examples of digital humanities scholarship and thought in an effort to demonstrate the relevance of digital humanities scholarship to the project of updating organizational behavior theory to reflect 21st century concerns. Though academia is but one profession, the lessons and examples recorded in the annals of DH history serve as a model and a guiding framework for other professions to potentially use as they explore their own questions about the knowledge worker’s relationship to self, others, and technology in and increasingly complex knowledge economy.
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