

Why academics under-share research data: A social relational theory

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Abstract

Despite their professed enthusiasm for open science, faculty researchers have been documented as not freely sharing their data; instead, if sharing data at all, they take a minimal approach. A robust research agenda in LIS has documented the data under-sharing practices in which they engage, and the motivations they profess. Using theoretical frameworks from sociology to complement research in LIS, this article examines the broader context in which researchers are situated, theorizing the social relational dynamics in academia that influence faculty decisions and practices relating to data sharing. We advance a theory that suggests that the academy has entered a period of transition, and faculty resistance to data sharing through foot-dragging is one response to shifting power dynamics. If the theory is borne out empirically, proponents of open access will need to find a way to encourage open academic research practices without undermining the social value of academic researchers.

1 | INTRODUCTION

Theory in information behavior and information practices has the potential to support not only the study of information needs, seeking, and use, but also an understanding of the practices surrounding participation in the sociocultural information space. Building on the notion of the productive worker (via Karl Marx) and Pierre Bourdieu's ideas of symbolic capital, we provide a framework for understanding the phenomenon of data under-sharing by academics. Despite a number of studies investigating motivation and practices of individuals pertaining to their data sharing practices (e.g., in the words of Zhang et al., 2023, their "data behavior") to our knowledge, no account of the broader social and relational context of academia has been brought to bear on

understanding data sharing practices. In this gap, we develop a theory of key social and relational dynamics in academia from which we derive propositions about how they inform data sharing practices. Our approach suggests that mandated participation in data sharing processes can backfire, resulting in lack of compliance by researchers and other indirect yet subversive practices of resistance.

1.1 | Approach to this study

The starting point for our theoretical account of data under-sharing practices is Marx's idea of the *productive worker*. The productive worker refers to the worker within the capitalist structure who is "useful" by virtue of

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creating profit for those who control the means of production (in this case the scholarly production apparatus that includes universities and their data repositories). If a worker contributes to surplus value, or profit beyond what it costs to create the “product” of their labor, that worker is a productive worker. The concept of the productive worker is useful for approaching the practice of data under-sharing because advances in technology enable knowledge workers to exceed the costs of production. In other words, given the ability of technology to provide access to the commodified by products of knowledge (e.g., datasets, publications, etc.), the productivity of knowledge workers increases.

The trouble for productive workers arises, argues Marx, because as they create more product, data, or knowledge, the productive worker becomes attractive as a target for exploitation—especially because they shoulder the added burden of learning and adapting to new technology while doing so (Fuchs, 2019). The productive worker has no choice but to shoulder this added burden because their labor is both *collective* and *aggregate*. Productive workers are *collective* in that they are part of a larger apparatus (e.g., the institutions and disciplines in which they are embedded) and are successful by virtue of their participation in the greater whole. Productive workers are *aggregate* in that maintaining their position within the collectivity requires that they constantly add new skills and responsibilities for no additional compensation. Together, in the landscape of the academy, these two necessary attributes of the worker translate into increasing burdens for (1) cooperation (e.g., sharing data or *releasing data*; Sakai et al., 2023) and (2) production (scholarly output) for the supposed benefit of the collective. Collectivity is required to fully engage in the discourse of the academy through cooperation, and aggregation is required to meet the growing demands for engagement with technology (which is but one example) in order to be successfully “productive.” These added demands quickly become the baseline expectation within the academy, and continue to grow unsustainably year-over-year. However, instead of simply contributing to the public good, these institutional demands carry the additional mandates of private industry. Private industry invades the ethos of the academy and insists upon its own strategic and neoliberal ends, which are passed on to the productive worker (e.g., data collection and industry-aligned research) adding to the emotional and cognitive load the productive worker. This carries through additional demands and deadlines beyond those of the academy, sublimated through the promise of greater social and material benefit to the productive worker. This promise may never be fulfilled, or may be fulfilled at the expense of the productive worker's mental

and physical health or at the expense of other research interests and intellectual engagement the productive worker might otherwise pursue.

This article develops a social relational theory of academia in order to bring Marx's general insights about the experience of the productive worker into conversation with work on information-related aspects of data sharing and under-sharing. The effort yields new possibilities for understanding faculty data under-sharing that, if borne out empirically have several implications for data sharing mandates and support.

2 | THE UNREALIZED ENTHUSIASM FOR OPENNESS

Although academic researchers broadly express enthusiasm for open science and report the intention to make their data accessible (Chawinga & Zinn, 2019; Cragin et al., 2010; Scaramozzino et al., 2012; Zhu, 2020), over time their practices do not match their claims (Chawinga & Zinn, 2019; Nelson, 2009). The literature has thoroughly documented this mismatch over time, finding low repository-based data sharing by academic researchers (e.g., Chawinga & Zinn, 2019; Hodonu-Wusu et al., 2020; Tenopir et al., 2011) and revealing that if academics make their data accessible, they tend to use less robust means that, unlike repositories, intrinsically limit access to the data they share (Wiley Market Research, 2017). In short, despite their professed enthusiasm for open science, numerous mandates, and the repository systems available to them, academic researchers continue to *under-share* their research data.

A discipline's research culture may play a role, with some disciplines deterring individual researchers from making their data accessible (Tenopir et al., 2011; Wallis et al., 2013). Conversely, some academic research communities have longstanding research cultures that embrace sharing data—e.g., physics, computer science, molecular biology, geology, environmental biology (Bishop et al., 2019; Faniel & Zimmerman, 2011; Kennan et al., 2013). Researchers in these and other sharing-intensive disciplines report that data-sharing technologies have further strengthened those cultures (Pham-Kanter et al., 2014; Zinner et al., 2016). There are considerations within certain research cultures (e.g., education, behavioral science), such as the confidentiality of participants or agreed-upon relational dynamics (e.g., narrative methodologies, Youth Participatory Action Research), that may make researchers wary of sharing granular data, or sharing data in a way that would be useful to other researchers except in a more general way. Overly-general datasets may subsequently be less useful to communities,

and therefore undermine the proposed necessity of open science in the first place. But many disciplines have not developed sharing cultures at all. Lack of sharing, and also potentially lack of reuse (e.g., Borgman, 2015; Borgman et al., 2019) seem to typify approaches in a number of disciplines unless specifically incentivized (MacFarlane, 2022). In fact, across disciplines, researchers bound by funder or journal data accessibility mandates are surprisingly non-compliant about depositing in repositories (Wiley Market Research, 2017). It is these non-sharing disciplines in particular that we consider here.

Data under-sharing has been documented as being common (e.g., MacFarlane, 2022), despite requirements by funders and publishers. Considerable research offers compelling explanations for under-sharing, pointing to a number of disincentives for making data openly available—for instance, the additional time required to curate accessible data, the risk of having a project scooped, and the potential for having data misinterpreted or misused all are mentioned by researchers (Chawinga & Zinn, 2019; Cragin et al., 2010; Kim, 2017; Tedersoo et al., 2021; Tenopir et al., 2011; Wiley Market Research, 2017; Zenk-Möltgen et al., 2018; Zhu, 2020). There is more to the problem of under-sharing than just the time it takes or access to expertise. Further, there are ethical and strategic concerns that create a conundrum for researchers (Borgman, 2012, 2015; Chawinga & Zinn, 2019). Human subjects data, for instance, can only be shared in a limited way and raises ethical concerns about data sensitivity (Nosek et al., 2015). Researchers' anxieties and concerns (justified or not) about errors in their research data or potential critiques of their interpretation of results can also become impediments to sharing (Wallis et al., 2013). These accounts usefully highlight a disconnect between the requirements of data sharing and researchers' tangible interests given the academic reward structure. However, as this article suggests, approaching this disconnect within the wider sociological context of academia suggests that the conditions contributing to under-sharing may also be more complicated and widespread than they at first appear.

2.1 | Contextualizing under-sharing

The theoretical framework developed in this article offers a more holistic, contextualized explanation of under-sharing for future testing. Our theory has two pillars: Bourdieu's (1988) account of academia is a *field*, or domain of human activity with a distinctive internal social order; and the general sociological claim that the

order of academia, as a field, is undergoing a neoliberal transition (Macfarlane, 2019; Ward, 2012). Neoliberalism is a market-based order that assumes that mechanisms that produce more profit for academic institutions will invariably result in better research, pedagogy and social outcomes. Neoliberalism renders knowledge work freely available for monetization because under neoliberal logics, profit always coincides with the “greater good” (Mirowski, 2018; cf., Levin & Leonelli, 2017). Openness in the sense of widely, freely accessible research outputs derives from academia's neoliberal logic, and picks up the late-capitalist inclination to exploit resources without regard to sustainability (Macfarlane, 2019; Ward, 2012). It further derives from academia's transition to neoliberal structures in which faculty researchers, as knowledge workers, are becoming relatively disempowered as class but are rewarded as individuals for aligning themselves with entrepreneurial practices such as open science collaboration. And yet, as Bourdieu suggests, pursuit of these awards will further disempower faculty as a class. We argue that this can fuel a dynamic in which technologies of open science such as data repositories can become a symbolic site of faculty resentment. In turn, repositories may become targets for “everyday” forms of resistance by faculty (Scott, 1985) to the redistribution of social power and authority within the academic field. One way such resistance may be enacted is through subconscious *foot-dragging*, in which academic researchers react to neoliberal production mandates by avoiding, delaying, and deferring accessibility to free data for commercialization—that is, by under-sharing data.

Theoretically, this social relational approach suggests that data under-sharing behaviors may be rooted in more than just the impact of tangible professional considerations expressed by individuals and documented in the LIS literature. It suggests that data under-sharing may also be a form of information behavior that is bound up with a quiet struggle for power and control over the future of academia as a field of human activity. While that the structural logic of neoliberalism determines, to some extent, the opportunities for collaboration within higher education, research, and publishing, the capitalist global culture is a countervailing force that potentially overcomes the utopian promise of open science and open data (Clarke, 2005; Peters, 2022). In other words, the utopian ideal of open data perhaps misses the lived reality of scholars working in their fields, and thus prescribes an action without accounting for the obstacles that stand in the way of completing that action successfully (i.e., sharing data across all communities and disciplines). Identifying and understanding those obstacles is a goal of this research.

3 | WHY ACADEMICS DO(N'T) SHARE DATA

Accessible data is consonant with the foundational values of knowledge-making in academia. Across disciplines, academic researchers report that they support data accessibility (e.g., Zhu, 2020). Funders, publishers, and academic institutions have increasingly formalized this ethos through policies and processes that require or at least urge academics to make their research data as widely accessible, findable, and useable as possible to third party scholars (Garvey et al., 2016; White, 2020; Wilkinson et al., 2016; Zenk-Möltgen et al., 2018). Accounts of data under-sharing highlight the tangible obstacles and material disincentives of data sharing for individual researchers. What remains unclear, however, is why or how these obstacles and incentives are weightier or more pressing to academics than the fulfilling the academic commitment to the collective pursuit of knowledge for the common good through open science practices like depositing their research data in accessible repositories (Borgman et al., 2019; Chawinga & Zinn, 2019; Kim, 2017; Kim & Adler, 2015; Tenopir et al., 2011; Wiley Market Research, 2017).

To make it easier for researchers to comply with data-sharing mandates, “research institutions, universities, publishers, libraries,” and others that Borgman (2015) calls in the aggregate “middle range” data policy stakeholders (p. 38) have developed data repositories of various sorts to host deposited research data. These sites support scholarly communication, allowing open data to be searched, downloaded, and preserved indefinitely. Data repositories are unique in their ability to deliver widescale data accessibility and engagement among users (Erway, 2013; NII, 2014; Singh et al., 2018). These data-sharing repositories, however, remain underutilized (Devriendt et al., 2022).

Investments in making data sharing more convenient for researchers have not been completely for naught. Data sharing overall is on the rise (Khan et al., 2023; Wiley Market Research, 2017; Zenk-Möltgen et al., 2018). And yet the increase that has been documented is minimal and hardly signals transformation toward ubiquitous data sharing practices. Low data sharing and non-compliance is interesting especially since researchers plainly claim to support data sharing and intend to share their data (Tenopir et al., 2011). And in some ways, their behavior supports those claims. For instance, as Kim (2017) suggests, faculty do share data but in a restricted way and upon request through *personal communication* technologies; not all articles, however, arrive at these findings with some finding authors ignoring requests (Gabelica et al., 2019). Researchers tend to be data gifters

(or *data suppliers*; Cragin et al., 2010, p. 4032), choosing the recipients of their gifts (Gabelica et al., 2022) and mediating the transaction themselves, with the potential for continued involvement in its analysis or interpretation (Zhu, 2020). Research has focused on aspects of sharing relating to social aspects such as trust (Kim, 2022; Zhi et al., 2023). Gifting does not yield uniformly consistent access to data, however (Tedersoo et al., 2021). Notably, each of the technologies used to gift data are limited; these forms of data sharing are restrictive and provisional; they also have the potential to ensure privacy (Cragin et al., 2010). As recently as 2014, Guindon found that a number of faculty are using CD/DVD or their private computer's hard drive, or paper, for their long-term archiving needs, implying that, for these researchers, data shared as a gift is largely ephemeral. Unfettered open data may have the potential to undermine the management of collegial and professional relationships as mediated through ad hoc distribution of the data-as-gift.

4 | A SOCIAL-RELATIONAL APPROACH TO FACULTY'S DATA UNDER-SHARING

Faculty researchers' data-sharing behavior hinges importantly on their tangible interests as individuals. Social context affects those interests and behaviors. Research on information behavior (such as data sharing) recognizes the importance of social context for shaping information interests and behavior (cf., Dervin, 2003; Wilson, 2000, p. 52) but analytically it tends to treat social context surrounding data sharing through tangible factors like institutional policies that factor into decisions about whether and how to share their data (cf., Kim & Adler, 2015; Zenk-Möltgen et al., 2018). Adopting Bourdieu's social constructivist framework, we conceptualize social context *as a field* of structured social relations that *produce* individuals, meaning their social identities (who they understand themselves to be), interests, and their behavioral dispositions (Hermanowicz, 2011). Applied to academic researchers, the suggestion is that how they are positioned relative to other classes of actors in the field of academia (e.g., administrators, students, third party stakeholders, etc.) constitutes their role and sense of self, which in turn disposes them toward certain identity-affirming interests and responses to information problems—such, as detailed below, a tendency to under-share research data while supporting open science.

In *Homo Academicus*, Bourdieu (1988) develops his influential account of academia as a field. For Bourdieu, all the social world is organized into relatively discrete fields of practice, such as academia, art, law, and so

on. Like all fields, academia is argued to be structured hierarchically, positioning the varied classes of actors and institutions that carry out its functions (faculty, students, universities, libraries, publishers, etc.) according to their relative distribution of power: that is, the types and amounts of *capital*, among them. There are four types of capital: economic (material possessions), cultural (mannerisms), social (social connections), and symbolic (prestige/reputation) (Bourdieu, 2002).¹ Different fields value these forms differently. In academia, “the main currency for the academic is not power [social capital], as it is for the politician, or wealth [material capital], as it is for the businessman, but reputation” (Becher, 1989, p. 52). The hierarchy of academia is structured by *symbolic capital*, and the faculty class dominate access to it. The effect is to subjectify the faculty member as a socially superordinate class within an intellectual structure. Though neoliberal structures cut across academia in ways that simultaneously subordinate the faculty class (discussed below), the superordinate position in relation to symbolic capital still importantly defines and constrains aspects including who faculty are and what they can do.

As superordinate, the faculty class enjoy a degree of legitimacy that authorizes them effectively to govern the rest of the field.² In this sense, to be socially superordinate is to exercise authoritative political powerful. As Bourdieu explains, the professoriate serves as “nobility” in the field and “the guardians of its ...symbolic capital” (Mendoza et al., 2012, p. 562). Other classes of agents and institutions within academia are stratified in relation to each other according to norms promulgated and propagated by the authoritative faculty class. Within the faculty class academic workers are hierarchically organized by norms about valued knowledge production: graduate students, non-tenure track faculty, and adjuncts. Below academic workers in the academic hierarchy are other classes of agents and institutions within academia. The less directly connected actors and institutions are to research, teaching, and publishing, the less prestigious they are within academia.

From this conception of academia as a social relational field follows an account of how behavior can be motivated. Key is that an actor's positionality within a field—whether a superordinate faculty member or subordinate non-academic staff—is more than a designation “donned” at work. Rather, as Bourdieu describes it, positionality is a lived experience in and through which actors come to enact/embody *habitus*: Their designated role in the field's underlying worldview. *Habitus* manifests as deeply internalized, non-conscious dispositions, schemas and ways of knowing what the world is and one's place in it (Bourdieu & Wacquant, 2002). In this way, *habitus* constitutes an agent's social identities,

interests, and actions. These follow from and conform to the logic of their role in performing the field's underlying worldview (Deer, 2003; Mendoza et al., 2012).

For members of the faculty class (especially those in the most superordinate positions), being faculty means implicitly knowing themselves as at the very core of academia's logic (Clegg, 2008; Costa, 2015; Rosewell & Ashwin, 2019). The dominance of faculty in academia is merely the social expression of the “natural fact” that faculty, more than any other actor or institution, authentically perform the collective pursuit of knowledge creation for the common good. From this social identity logically follows the justification for such longstanding academic practices as faculty self-governance and academic freedom (Mendoza et al., 2012). In short, to be faculty, is to know oneself as part of a “naturally” superordinate class of academic actors and to be *disposed to*—that is, to embody, non-consciously—activities that express and reproduce that reality. It is, in other words, to have a non-conscious interest in domination over access to symbolic capital within the academic field (Radimská, 2002).

5 | THE SOCIAL LOGIC OF DATA SHARING BEHAVIORS IN THE ACADEMY

This account of the traditional social logic of academia offers a perspective on the data sharing behavior of academic researchers that goes beyond an individual's concerns about data curation, data misuse, and other tangible professional opportunity costs. Through this social relational lens, faculty data sharing behavior is also shaped by the faculty *habitus*, which disposes academic researchers toward actions that reinforce faculty domination over access to symbolic capital. Although as individuals, faculty researchers may be able to grow their personal stock of symbolic capital by sharing data (for instance, through recognition, or collaborations that increase productivity), the *habitus* of traditional academic order disposes faculty against sharing too broadly or indiscriminately.

By this logic, sharing through third party platforms attenuates the possibility of connection between data creator and user (Ferryman, 2017), which is not desirable for faculty seeking symbolic capital. A lack of connection makes regulating access impossible. One potential consequence is “a new class of research person... research parasites,” who take over from the legitimate “frontline” knowledge producers, without granting due recognition or prestige to the data creators (cf., Borgman et al., 2019; Longo & Drazen, 2016). Openly sharing data, in other

words, risks unregulated upward mobility for subordinate actors (Ferretti & Pereira, 2021), potentially further destabilizing the already upended social order. In short, there is a social logic that can explain data under-sharing, at least in part. Other logics certainly factor in as well. For instance, the neoliberal logic, as we argue below, entails its own social order that increasingly dominates and challenges Bourdieu's traditional social logic of academia as described here. Additionally, within academia, institutions and disciplines have their own local orders, with distinctive social logics and material incentives that push and pull data sharing behavior in different directions. To make sense of the interaction effects of multiple orders and incentive structures on data sharing behavior, however, requires first understanding each of their logics on their own terms.

Extrapolating from the traditional social logic of academia, for instance, offers a different perspective on the longstanding practice of data gifting in academia (Wallis et al., 2013).³ The order's founding worldview, of academia as a collective pursuit of knowledge for common good, means that academic researchers should not hoard data. *Some* sharing of data is crucial to the field's order, and data sharing can be a source of symbolic capital for the data creator. Data gifting accomplishes these functions without comprising status of the faculty class. Data gifters use limited systems that create opportunities for reciprocal relations with the user. Creators thus have opportunities to vet users, manage gifted data, and to stipulate expectations for acknowledgement and reward (cf., Crane, 1972; Ferryman, 2017). Approached through the social logic of traditional academic order, data gifting is an efficacious solution to the problem of regulating access to symbolic capital, and so perpetuating the conditions that sustain dominance of the faculty class in academia. In fact, read through the traditional social logic of academia, the real puzzle about data sharing behavior is not under-sharing but why faculty researchers would ever voluntarily share openly, or more, why they support open science at all.⁴ Open science, after all, directly challenges the unique authority of the professoriate to guide the collective pursuit of knowledge. We argue that an answer lies in the changing social logic and power relations of academia as a field.

6 | THE CHANGING SOCIAL LOGIC OF ACADEMIA

In Bourdieu's formulation, the traditional social logic of the academic order was so effective at socializing actors to the habitus because the academic field remained relatively protected from outside influences. Historically

“universities and academics within them were shielded from economic and political forces, fully supported by the state, and [enjoyed] a high degree of autonomy that allowed faculty to generate their own values and behavioral imperatives” (cf., Deer, 2003; Mendoza et al., 2012, p. 559). With the advance of neoliberalism, however, this is no longer true, especially in the West. The blurring of academia as a field with other domains of human activity marks a critical moment in which academia's habitus, or founding worldview and order, is mismatched with its objective environment (Elder-Vass, 2010).

As a result, academia is changing. Since the 1970s neoliberal marketization and a decline in government support for higher education has increasingly “diminished the power of the academic field” (Deer, 2003, p. 202) opening the field to external demands. Under pressure to adapt, universities faced a crisis that required them “to increase their interactions with agents in other fields,” enmeshing themselves “in a complex web of relationships that include(s) governmental actors as well as market actors across both national and international contexts” (Gonzales, 2015, p. 1101).

Entanglement with actors in the economic field, especially, has engendered a global refashioning of universities from sites of knowledge production into entrepreneurs in their own right (Jessop, 2017). It has also engendered a greater submission of academia to economic values and practices and a subjectification of the role of the academic along the aforementioned lines (Deer, 2003; Foucault, 1982).

7 | CHANGING APPROACHES TO THE ACADEMIC FIELD: ACADEMIC CAPITALISM AND THE SUBORDINATION OF THE FACULTY CLASS

The penetration of economic values and practices into the traditional academic field has changed “the rules of the game” of academia, gradually reconfiguring it in ways that reflect a new social relational order, known as *academic capitalism* (Grenfell & James, 2010; Lawler, 2004) structured on neoliberal logic. Whereas the traditional order is anchored to ideals about knowledge for common good that render faculty the superordinate class, academic capitalism is rooted in the particularistic interests of academia's investors. Such investors include corporate patrons, governmental funders, university donors, and other stakeholders that make up a fluid and heterogeneous “entrepreneur class” (Jessop, 2017; Vican et al., 2019). The social logic of academic capitalism instead positions actors according to their capacity to

convert knowledge work into material capital to the benefit of that class. Hence, whereas traditional academia valued actors according to the symbolic capital arising from knowledge practices like research, teaching, and publishing, academic capitalism values them according to the potential for converting their knowledge practices into profit (Mirowski, 2018).

The emergence of academic capitalism has reconfigured academia in a variety of ways. It has spawned the growth of a managerial class within and outside universities—including various science and data policy stakeholders—to identify, measure, and incentivize the most lucrative knowledge practices (Mendoza et al., 2012; Vican et al., 2019). The result has been policies that reward knowledge creation processes and outputs that are amenable to measurement and commodification—for instance, researchers who generate extramural funding, quantitative data, multiple publications, actionable outcomes, and so on (Reitz, 2017). The “metric-ization” of academia completes a long-term transformation of the relationship between academia and wider society, replacing a traditional trusteeship in which academia is entrusted to enrich society, with a system of neoliberal accountability in which academics must deliver frequent performance reports (Münch, 2020; Ruser, 2019).⁵ In short, under academic capitalism, the faculty class is increasingly subordinate not just to the academic entrepreneur class but the managerial class as well.

7.1 | Open science under academic capitalism

These dynamics, and the transition of the academic field from traditional to an academic capitalist order more generally, suggest a new perspective on academic researchers' coupling of support for open science with data under-sharing, often in defiance of the rules. First, given how dear the faculty class holds their role as creators of information, the enthusiasm *for* open science among researchers from all disciplines is revealing. It points to a homogenizing pressure of academic capitalism, as well as a partial forfeiture of control over how data is used within the neoliberal academy. In other words, academic capitalism is here to stay, so faculty have to find ways to profess compliance in this new environment. Entailed in this proposition is a critical take on open science, for it implies that open science threatens the faculty class not because it democratizes the pursuit of knowledge, but because it is frankly unconcerned with knowledge, or even science (Levin & Leonelli, 2017; Mirowski, 2018; Tyfield, 2013).

Under academic capitalism, open science appears as what Bourdieu (2003) calls an insidious expression of domination. That said, open science also potentially functions to create greater efficiencies in workflows and to enable researchers to build on previous datasets. Open science is a natural extension of the collaborative spirit of research in the academy. Given the social logic of academia, however, our concern is that open science can be seen by researchers to be a tool by which the private sector and administrators extract surplus value from their labor. When this happens, the appeal of open science is mitigated.

The narrative of open science to advance knowledge transparency and authenticity through participation disguises how open science works in practice, to push free academic outputs to entrepreneurs, like big pharma and online “platform capitalists,” for monetization and private profit (Mirowski, 2018). Admonishments, incentives, and requirements to participate in open science by making research outputs and data accessible all help intensify the homogenizing pressures on researchers. Academic capitalist knowledge standards “reconfigure the institutions and the nature of knowledge”; at the same time, the failure of academic managers to develop tangible rewards for researcher compliance reveals researchers' replaceability (Mirowski, 2018, p. 172).

That academic researchers nonetheless so widely align themselves with open science—against the logic of the traditional academic habitus, their own social identity as knowledge leaders, and in the absence of any meaningful reward—suggests that the faculty class is beginning to internalize the habitus of its diminished social position. In professing to support open science, academic researchers embody the discourse that legitimates their demotion from knowledge leaders to knowledge laborers and enlist themselves as unwitting stewards of the transition to academic capitalism. In Marx's construct, they reiterate their productive potential by glomming on to the lexicon of “productive” knowledge worker.

And yet, the fact that diverse academic researchers across disciplines also tend not to openly share data—in spite of their growing habituation to the commodification of academic knowledge and often even when required by policies and guidelines—suggests that the transition to academic capitalist order is not complete. Importantly, periods of incomplete transition are ripe for resistance.

8 | DATA UNDER-SHARING AS FACULTY CLASS RESISTANCE

Bourdiesian scholars argue that transitions to new social relational orders are consolidated, or complete,

when the subordinate classes internalize their new habitus and social identity so thoroughly that they habitually, non-consciously enact practices that are reproductive of their subordinate position (Grenfell & James, 2004). Subjectification then takes place to cement the subordinate class in their social and historical context (Foucault, 1982; Valero et al., 2018). However, the process by which such deep internalization is realized is “protracted and multisided,” sometimes enjoining simultaneous submission and resistance by classes that have incompletely internalized the new habitus (Collyer, 2015; Costa, 2015).

These insights offer a useful frame for thinking about how, as noted earlier, faculty researchers, are aligned with and submit to the discourse of open science, but also under-share research data, even when doing so risks punishment. The suggestion is that the faculty class has partially but not fully internalized its new habitus and order. Alignment with open science, it follows, reflects internalization of academic capitalism, while data under-sharing reflects resistance to it.

The suggestion that data under-sharing is a form of resistance draws on James C. Scott’s notion of “everyday resistance”: a type of resistance that is motivated subconsciously and enacted *non-consciously* as a way of expressing agency against social “demotion,” or domination. It is a way of saying, “we’re not just your dopes.” Everyday resistance is a weapon of the weak, performed by the (relatively) disempowered in response to bold expressions of domination, such as those revealed in the contradictions between the logic of a field and its actual practice (Moukarbel, 2009). The logic of academic capitalism, for instance, promises upward mobility in exchange for commodifiable knowledge products and yet faculty that openly share data freely are offered no such reward. Contradictions between the promise of neoliberalism and the lived reality concretize the subordinate’s disempowerment, especially for those that, like faculty, find themselves in a diminished position. We suggest data repositories are one concretization of the relative disempowerment of the faculty class. They symbolically encode the rising power of academic managers and the declining power of researchers. They amplify an adversarial relationship between the faculty class and data stakeholders.

While most types of contentious action are ostentatious—rebellions, political protests—everyday resistance is subtle: it is wielded through “non-actions” such as feigned ignorance of rules or foot-dragging to delay compliance with the rules. Under-sharing might be the result of feigned ignorance but in instances where open data sharing is required by funder, institutional, or journal mandates, it is more likely to be foot-dragging. In either case, these acts of everyday resistance entail no direct symbolic confrontation with authority or with elite

norms, nor do they require coordination, planning, or consciousness, individual or collective (Moukarbel, 2009; Scott, 1985).

Not all researchers will be non-consciously disposed toward everyday resistance since not all (or have been) equally identified with or socialized to the traditional social logic of academia. For example, graduate students may lack the experience to understand the full implications of participating in data sharing, and both graduate students and adjuncts lack full access to academic institutional structures, while non tenure track faculty lack the stability of tenure track progress, as well as the ultimate protection of tenure itself. The concretization of disempowerment in data repositories may here again amplify adversarial relationships, but this time within the faculty class between those in relatively secure economic and social positions who have the “luxury” of foot-dragging and those in non-tenure track positions, adjuncts, and student workers who are not at liberty to resist because they may lack security, experience, or full access to institutional structures (e.g., unions, faculty senate).

And yet, acts of everyday resistance can send important messages to dominant classes. Under-sharing, especially where there are expectations to deposit in an openly accessible repository, cannot be disregarded for long. To do so would be to allow the resistant practice to interrupt or derail the consolidation of the order. In this way, the social relational model of academia-in-transition suggests that researchers engage in data under-sharing, in part, *because* of the risks of non-compliance and in response to their own uncomfortable support for open science.

9 | SUMMARIZING THE SOCIAL-RELATIONAL THEORIZATION OF DATA SHARING

In sum, the current analysis (1) exposes the error of a presumed alignment between the traditional academic order and the ethos of open science; (2) indicates that researchers’ support for open science is a function of their increasing subordination to and subjectification within academic capitalism, neoliberalism and the lived reality of institutional functions rooted in historical materialism; (3) suggests that this subordination has created an adversarial relation between the faculty class and data stakeholders evident in how data repositories, as systems, symbolically encode the rising power of academic managers and the declining power of researchers; and (4) suggests that academic researchers engage in data under-sharing, in part, *because* of the risks of non-compliance and their own support for open science and a

subconscious or conscious resistance to academic subjectification. Under-sharing can be understood at least in part as an embodied, if non-conscious, type of protest, or “everyday resistance” (Bourdieu, 1990, p. 73; Lawler, 2004; Scott, 1985) by faculty to the consolidation of academic capitalism and the power of the managerial class. In other words: Building on the theoretical framework presented here, we suggest that where academic researchers avoid using repositories as platforms for data sharing (i.e., under-share), they do so at least in part, as an act of everyday resistance (foot-dragging) to disrupt the consolidation of power in the academic entrepreneur and managerial classes.

Resistance to the consolidation of the new academic social order ultimately affects the study, practice, and policy of data sharing, open access, and open science more broadly. When academic researchers who support open science under-share by avoiding or refusing to deposit in repositories even when it is required, they effectively do more than just react to financial incentives of academia's reward structure. Wittingly or not they also symbolically (if non-consciously) resist the consolidation of the new academic social order and their relatively subordinated and diminished place within it. That data sharing behavior is rooted in social relations and struggles over power and order have practical consequence for open science advocates and data policy stakeholders.

10 | IMPLICATIONS OF THIS WORK

The validity of our proposition depends upon empirical research that is beyond the scope of this paper. However, insofar as this proposal is borne out empirically, there are a number of significant implications. First, although under-sharing research data may seem a feeble mode of resistance, it has quiet, cumulative effects that can counter the beneficial aspects of open science. However uncoordinated and non-confrontational, habituated and widespread under-sharing curtails the growth rate of openly available data, potentially slowing the progress of science and limiting opportunities to capitalize on researchers' output. In this way, foot-dragging creates friction that decelerates change.

Second, given under-sharing as a form of everyday resistance, data stakeholders are ill-advised to respond with increasingly robust data-sharing mandates. This is because everyday resistance has a reciprocal logic (Moukarbel, 2009): The more overtly a rising superordinate class acts to consolidate its authority, the more it provokes subordinate classes to everyday resistance. As acts of everyday resistance become more consistent, pervasive, and visible, they can evolve into regular

resistance: That is more intentional, more directly confrontational, and more organized as a form of contentious action. This is especially likely where everyday resistance exists alongside organized, mass-based resistance activities that also, if for different reasons, target the ascending class (Lilja et al., 2017).

In all probability, it seems unlikely that foot-dragging on formal, repository-based data sharing will cumulate to a direct protest, and perhaps it will not even hinder the progress of open science. But even then, under-sharing as an expression of foot-dragging still matters. Repositories mediate much more than data; viewed through a social relational framework they also mediate the changing order of academia as a field, and with it, what counts as legitimate academic research and knowledge producing practices. Under academic capitalism, greater social and economic capital accrues (is already accruing) to those disciplines and researchers who produce repository-friendly, commodifiable data, such as the STEM fields. Disciplines and individuals pursuing qualitative, critical, and theoretical research are increasingly stigmatized in the social order as “service disciplines.” This dynamic incentivizes faculty to pursue “datafied” research projects, effectively homogenizing knowledge production in academia. What is more, to the extent that institutional policies are designed primarily to address datafied research, they erode (however unwittingly) the intellectual freedom and “autonomy privacy” (Privacy and Information Security Initiative Steering Committee, 2013) of individual researchers.

We acknowledge that repositories are a potential site for struggle within institutional hierarchies. Directives mandating participation, however, should be resisted where possible; efforts on campuses should instead focus on making the case to faculty that open data is a worthwhile endeavor. Academics *do* benefit from the gift culture that has emerged in this space, and the growth of a field's body of knowledge is a worthy pursuit, and one that can be supported through open data, open sharing, and other collegial activities that previously might have been practiced more readily on a small scale or under the immediate oversight of individual researchers. Large-scale data sharing can be a worthy goal that is supported by trusted institutions and stakeholders such as libraries and other branches of campus research support services that understand the value of open data initiatives.

10.1 | Limitations

The sociological framework developed here proposes that under-sharing research data (e.g., avoiding repositories) is a form of resistance to the consolidation of academic capitalism. However, we have not attempted to assess the

empirical credibility of these proposals or the analytic points that follow from them, as laid out in the section above. Although theory building is an important part of the scientific method, its value lies in mobilizing empirical inquiry. Accordingly, as we discuss below, the priority for future work must be to develop an empirical research methodology that is appropriate to testing the core proposals generated by this sociological framework.

10.2 | Future work

This framework opens a range of questions about the conditions and effects of everyday resistance on open science and on information systems and user behavior more broadly. As a first step however, empirical research must be undertaken to evaluate the proposition that under-sharing is an expression of resistance via foot-dragging. This presents a challenge since the usual types of research methodologies (like surveys and interviews) focus on self-reported, individual-level phenomena (e.g., Cragin et al., 2010; Hodonu-Wusu et al., 2020; Kim, 2017; Kim & Adler, 2015; Tenopir et al., 2011; Zenk-Möltgen et al., 2018; Zhi et al., 2023; Zhu, 2020). Everyday resistance, however, entails non-conscious behaviors. Social relational dynamics, non-conscious action, and subtle and emergent effects of the sort suggested by this study require a phenomenological method—that is, one that focuses on how academic researchers *experience* their under-sharing behavior. Phenomenological inquiry focuses less on the objective factors related to the behavior (e.g., inconvenience and lack of resources) than on what the behavior *means* to its perpetrators.

Future work can build out an appropriate empirical research method by building on the work of Clifford Geertz (1973) or Scott (1985). Assuming the proposal is borne out, the same method can be used to look at the role of everyday resistance in other information behaviors relating to open science. For example, data reuse has also been limited (Cragin et al., 2010). Is this an instance of everyday resistance? The current research also reveals other potential areas of study that present rich opportunities for investigation. More closely aligned with work in information behavior and information practices, in what ways is shared data desirable to use? How might it be undesirable?

11 | CONCLUSION

The social relational theoretical framework developed in this study opens new lines of research and analysis

regarding data sharing, data repositories, and the emerging status of the faculty class. Most immediately, this study invites empirical investigation into the proposition that under-sharing is a form of resistance to the consolidation of academic capitalism. Additionally, this study draws attention to the connection between institutions, power, and social control. Given the under-sharing and support for open science as expressions of everyday resistance, data repositories appear to do more than connect individual users through data. They also mediate struggles over the social order of academia, potentially in very concrete ways. Although everyday resistance is associated with non-confrontational, non-conscious individual behaviors, when acts of everyday resistance coalesce around sites of subordination—like data repositories—it can catalyze consciousness and organized resistance (Lilja et al., 2017).

Analytically, this is significant in that it amplifies that these systems and mandates are not just about user engagement around data; they are also sites of power, struggle, and other sociological transformations. It also has practical significance. It counsels against trying to bring about transformation through more robust and expansive requirements for data sharing. This is not just because it can invite further resistance but because, as our approach suggests, normative pressures and policy dictates tend to have a homogenizing effect on research. The effect, however unwitting, is to restrict academic autonomy and freedom in ways that diminish the creative contributions that scholars can make to knowledge. The challenge is to find a way to encourage open academic research practices that does not undermine the very value of academic research.

This study also raises a number of practical considerations. For proponents of open data accessibility, this study cautions that increasingly demanding data-sharing mandates may backfire, catalyzing everyday resistance into collective, organized resistance. Librarians, for example, promote open science and open data through institutional levers; they train in professional competencies including data curation, data management, and faculty engagement. Though such efforts may be well-intentioned, they might not unequivocally be perceived as being in service of the common good by disenfranchised researchers. On the contrary, to academic researchers, libraries and librarians may appear as part of a coercive academic capitalist apparatus rather than as advocates for freedom.⁶ One core challenge for proponents of open access is to find a way to encourage open academic research practices without undermining the social value of academic researchers. As power dynamics continue to shift after the belt-tightening following the COVID-19 pandemic, information behavior may show

evidence of further resistance as expectations and power continue to shift away from the researcher.

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ENDNOTES

- ¹ There are competing interpretations about the source of symbolic capital. Some see it as accruing from the other three forms of capital to which a practitioner has access but distinctive in that is considered to legitimate the practitioner as an authority. Others understand symbolic capital as its own distinctive form of capital (Lawler, 2011). It is clear that economic, culture, and social power may reinforce or enrich one's reputation but what matters is that it is not the economic, cultural, or social power that matters in academia; it is the symbolic capital or authority that comes from knowledge making.
- ² Consider the longstanding practice of faculty self-governance. It is legitimated by the superior authority of faculty in the practices of knowledge-creation and dissemination.
- ³ Data gifting is perfectly compatible with norms of science, which reject hoarding and secrecy about one's work (Barber, 1968; Merton, 1942/1973).
- ⁴ Hence a subfield of Bourdieusian research on the outcast status and illegitimacy of academic faculty that pursue digital scholarship and other kinds of open access research (see Costa, 2015).
- ⁵ For instance, the authority of the faculty class as a whole has diminished to the point that even faculty self-governance is no longer taken as a natural feature of academic institutions (Gerber, 2014; Gonzales, 2015).
- ⁶ Not monetary, certainly, but also not in terms of prestige within their disciplines (there is potentially only for researchers the perception that sharing might ultimately work against them), nor in terms of amassing benefits that will support their ascension within the university, nor positively influence their ability to do future work or be awarded grants. The benefit to this unpaid labor is naught, and it is carried out at the expense of faculty time and the cost of giving away their intellectual property.

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