Epistemic uncertainty:
How preprints can reconfigure organizational theorizing

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Abstract

Due to the structural transformation of the scientific public sphere, organizational researchers now frequently come into contact with preprints—scholarly texts that are intended for peer review but have not yet been submitted for or completed this evaluation process. Although reflexive organizational research has long been interested in the relationships between scholarly media and practices of theorizing, preprints have thus far been dismissed as a media genre that is not relevant for these activities. We challenge this view by showing that preprints can be highly relevant for theorizing because they possess the unique property of *epistemic uncertainty*. When researchers encounter a preprint, they cannot infer from the media genre itself whether or not their peers would consider the content of this specific preprint to be a legitimate contribution to theoretical debates. Using three core activities of organizational researchers—conceptualizing, grant writing, and reviewing—as illustrative examples, we show that how preprints reconfigure these practices of theorizing depends on whether researchers consider epistemic uncertainty as a threat or a resource. Thus, being sensitive to the generative potential of incomplete scholarly media contributes to our understanding of how theorizing changes in digitally networked environments. Finally, we discuss new challenges for organizational researchers when their preprints are encountered not only by their peers but also by audiences outside of academia.

Organizational research has a long-standing interest in the structures, processes, and practices through which its theories emerge, travel, change, or fade (e.g. Battilana, Anteby, & Sengul, 2010; Clegg, Pina e Cunha, & Berti, 2022; Haveman, Mahoney, & Mannix, 2021; Vogel, 2012). Within this ongoing project of "reflexive theorizing" (Cutcher, Hardy, Riach, & Thomas, 2020, p. 1), one line of work is concerned with the medial dimension of theorizing. Thus far, most attention in this line of work has been devoted to peer-reviewed journals as a media genre. Here, some studies zoom in and examine how the status of article types (Spoelstra, 2017), the length of articles (Hensel, 2022), the surface structure of articles (Strang & Siler, 2017), or the textual modality of articles (Manning, 2024; Wood, 2015; Wood, Salovaara, & Marti, 2018) are entwined with theoretical concepts and debates in organizational research. Other studies zoom out and examine journals as part of a broader media system. For example, they describe how journal rankings and citation metrics (Osterloh & Frey, 2015; Willmott, 2011), social media metrics (Thananusak & Ansari, 2019), or the business model of for-profit, academic publishing corporations (Beverungen, Böhm, & Land, 2012) shape the trajectories of theoretical concepts or entire schools of thought. By zooming out, some studies have also looked beyond peer-reviewed journals and examined the role that more peripheral media genres such as popularization journals (Birkinshaw, Lecuona, & Barwise, 2016; Schulz & Nicolai, 2015) or predatory journals (Dobusch & Heimstädt, 2019; Harzing & Adler, 2016) can play for organizational theory.

With this study we contribute to a deeper understanding of the relationship between such (seemingly) peripheral media genres and organizational theorizing, by examining the role of preprints. We define preprints as scholarly texts that are intended for peer review but have not yet been submitted for or completed this evaluation process. As a media genre, preprints can be traced back as far as to the 1920s (Cobb, 2017). However, it is only due to a more recent structural transformation of the scientific public sphere that researchers frequently encounter preprints in their daily work (Dobusch & Heimstädt, 2024). In particular, today's

salience of preprints can be attributed to at least three interrelated developments. First, the number of preprint servers has increased greatly in recent years, allowing researchers from across disciplines to conveniently publish their preprints on the Internet (Chiarelli, Johnson, Pinfield, & Richens, 2019). Second, the relevance of social media platforms for academics has increased as well, allowing researchers to share links to their published preprints with a large and heterogeneous audience (Bauer, Heimstädt, Franzreb, & Schimmler, 2023). Third, a growing norm of openness and transparency in academia makes researchers more comfortable with sharing preliminary research results (Leone, Mantere, & Faraj, 2021; Pratt, Kaplan, & Whittington, 2020).

However, preprints are an interesting object of study not only because of their growing prevalence in the everyday work of researchers. Rather, it is particularly important to study preprints because they differ from other increasingly popular genres of scholarly media, such as blogs or podcasts. What sets preprints apart from these other media genres is a characteristic which we, building on Bauer et al. (2023), refer to as *epistemic uncertainty*. Preprints as a media genre are characterized by epistemic uncertainty, which means that researchers who encounter a preprint cannot infer from the media genre itself whether or not their peers would consider the content of this specific preprint to be a legitimate contribution to theoretical debates. Preprints thus differ from other media genres that are characterized by epistemic certainty. For example, organizational researchers generally consider peer-reviewed journal articles to be legitimate contributions to the scientific debate. At the same time, organizational researchers do generally not consider blog posts to make such contributions. The media genre of preprints thus carries a promise: that in a future in which the peer-review process has been completed, epistemic uncertainty will have been transformed into certainty. However, this also means that researchers who encounter preprints in the present must deal with the uncertainty of whether these texts will be recognized in the future as legitimate contributions to theory or not. Due to the growing number of preprint servers, the increasing role

of social media platforms for researchers, and the emerging norm of transparency and openness in science, it is not only preprints but also their epistemic uncertainty that organizational researchers encounter and need to deal with more and more often.

The remainder of this paper is structured as follows. We begin by providing a short history of the preprint as a genre of scholarly media and its growing popularity in the field of organizational research. We thereafter develop a more comprehensive conceptualization of epistemic uncertainty—the characteristic that sets the medium of preprints apart from other central and peripheral media genres in organizational research. We then use three core activities of organizational researchers—conceptualizing, grant writing, and reviewing—as illustrative examples to show that how preprints reconfigure these practices of theorizing depends on whether researchers treat epistemic uncertainty as a threat or a resource. We conclude with a discussion of the role of incomplete media in organizational theorizing and the new responsibilities that arise for organizational researchers once preprints travel beyond the confines of academia.

Preprints in Organizational Research

Over the past few decades, the once broad range of scholarly media genres through which theoretical contributions to organizational theories are made has narrowed (Pfeffer, 2007; Ringel, 2024). Today, there is a widespread conviction in large parts of the research field that theoretical contributions are made first and foremost through peer-reviewed articles in well-ranked English-language journals (Augier, March, & Sullivan, 2005; Bousseba & Tienari, 2021; Strang & Siler, 2017). The growing importance of preprints as journal articles in-the-making thus goes hand in hand with the rise of the peer-reviewed journal article as an “important currency of standing” (Augier & March, 2011, p. 180) in organizational research. Several other genres of scholarly media can also be found around the peer review process (see Table 1). For the remainder of our argument, it is important to distinguish preprints from these adjacent

genres. *Postprints* or *accepted versions* are texts that have successfully gone through the review process but have not yet been formatted for the journal. *Proofs* have been formatted but not yet proofread by the author. The *publisher's version* or *version of record* is the version of the text that has been published in the journal.

----- Insert Table 1 about here -----

Although for most researchers, preprints have only gained considerable importance in recent years, the history of preprints goes back a long way. Historical sources mention communities for the exchange of unpublished scholarly texts as early as the 1920s. Here, however, the exchange was limited to small groups, often members of a scientific institution or a small professional association (Cobb, 2017, p. 2). The systematization of this exchange did not begin until the middle of the 20th century. More specifically, some consider 1961 to be the starting point in the history of preprints as a recognized genre of scholarly media (Cobb, 2017; Confrey, 1996). In that year, the National Institute of Health (NIH) in the United States established a system called Information Exchange Groups (IEGs). The idea of IEGs was developed by an NIH administrator to support the biomedical research community. Researchers could send their unpublished texts to the NIH. There they were physically reproduced and then mailed to all researchers who were registered members of the IEG. Within a few years, several thematic IEGs were formed. By the year 1965, 3663 researchers from 46 countries were registered, and 2561 texts—more than half of them preprints according to our definition—were mailed to them. In 1966, however, several major scientific publishers began to strongly criticize the IEGs, and within a short time enrolled the editorial boards in their campaign against preprints as well. The publishers argued that IEGs were an unwarranted government intrusion into commercial publishing. The editorial boards of journals such as Nature and Science joined in, arguing that IEGs undermined confidence in peer-reviewed research. The preprint exchange system finally ended when several major

journals adopted a policy that they would not accept manuscripts for publication that had already been circulated by an IEG.

The practice of sharing preprints resurfaced with the advent of the Internet. In the early 1990s, arXiv was established as the first preprint server, and allowed researchers from engineering and the natural sciences to share their unpublished manuscripts online (Ginsparg, 2021; Reyes-Galindo, 2016). Throughout the 1990s and 2000s only a few more academic communities started using preprint servers (Acord & Harley, 2012; Chiarelli et al., 2019). However, over the last decade the number of preprint servers has increased greatly, and the practice of sharing preprints has become more widely accepted across academic fields. In 2019 there were more than 60 preprint servers and an even higher but hard to quantify number of preprint repositories, such as Zenodo (Chiarelli et al., 2019). When a preprint is submitted to a preprint server, voluntary administrators screen the new submission and reject the manuscript, if it violates formatting requirements or clearly falls outside of the server's disciplinary scope (Ginsparg, 2021). Preprints that pass this screening become openly accessible on the platform. Preprint repositories oftentimes have no such formal screening process in place.

Although organizational studies did not pioneer the preprint movement, the media genre is now well established in this field. One case in point is the prevalence of organizational research on the online repository Social Sciences Research Network (SSRN). SSRN was founded in 1994 by two economists. Since then, it has become one of the most important platforms in the social and economic sciences for publishing preprints. On SSRN, preprints are sorted into thematic categories. Several of these categories span organizational research and include a substantial amount of uploaded texts, such as the "Corporate Governance Network" (45,715 texts), "Entrepreneurship Research & Policy Network" (43,331 texts), "Management Research Network" (99,592 texts), or the "Organization Series" (53,733 texts). The much younger preprint server SocArXiv (founded in 2016) also already hosts 554 preprints in its "Work, Economy, and Organizations" category. Once uploaded to a preprint

server or repository, many organizational researchers share their preprints on social networks such as X or LinkedIn. Another indication that preprints have found their way into organizational research is their inclusion in central infrastructures. Today, many editorial management systems of academic journals prompt authors to indicate whether they have published a preprint of their submitted manuscript and, if so, to include the DOI in the submission package.

In organizational research, there is a broad consensus that through digital platforms and infrastructures "what we do is more visible than ever, and this state of affairs sets our times apart from the past" (Flyverbom, 2022, p. 2). As illustrated above, however, this diagnosis applies not only to organizations as objects of inquiry, but also to organizational research itself. The outputs we produce as organizational researchers are becoming more visible than ever. In the case of preprints, as we will argue below, this sets our theorizing in the present and future apart from our theorizing in the past.

Epistemic Uncertainty of Preprints: Threat or Resource?

Preprints differ fundamentally from other genre of scholarly media with regard to their epistemic characteristics. Following Bauer et al. (2023), we argue that preprints are characterized by "epistemic uncertainty". Epistemic uncertainty refers to the fact that researchers who encounter a preprint cannot infer from the media genre itself whether or not their peers would consider the content of this specific preprint to be a legitimate contribution to theoretical debates. More specifically, epistemic uncertainty arises from a lack of information in the present about the future evaluation of an individual preprint in the peer review process (Pontille & Torny, 2015). In contrast, when a media genre is characterized by epistemic certainty, researchers can infer from the genre alone whether their peers consider a specific instance of that genre as a contribution to scholarly knowledge. For example, researchers generally consider a manuscript that has passed the peer review process of a journal to be a legitimate contribution to scientific knowledge. The certain epistemic

status of the journal article as a media genre is not affected by the possibility that an individual researcher might consider the argument or craftsmanship of an individual paper underwhelming (Osterloh & Frey, 2020). In turn, a blog post written by a credentialed researcher (e.g. holder of a PhD) is generally not considered a legitimate contribution to scientific knowledge by her peers. To say that blog posts are characterized by epistemic certainty means that there is a shared understanding among members of a scientific community that blog posts generally do not represent contributions to theoretical debates—even though an individual researcher might consider the content of a specific blog post to be of the same quality as some peer-reviewed journal articles.

The concept of epistemic uncertainty is inextricably linked to the institution of academic peer review, which brings up the need for a few more clarifications. First, the epistemic uncertainty of preprints is particularly relevant in scientific fields such as organizational research, where theory is primarily considered to be what is published in peer-reviewed academic journals (Abend, 2008; Ringel, 2024; Sandberg & Alvesson, 2021). The concept of epistemic uncertainty has therefore limited applicability to scientific fields in which peer-reviewed journal articles play a less central role. Second, submitted manuscripts change during the peer review process. The initial preprint thus only partially resembles the accepted version, whereby the extent of change can differ widely depending on the methodological orientation of the research (Strang & Siler, 2015). Even though a preprint is almost never completely congruent with an accepted version, we argue that the likelihood of changes does not affect the preprint's characteristic of epistemic uncertainty. This is because preprints are submitted to the peer-review process with the expectation that they are publishable and thus theory-worthy contributions. This expectation is also reflected in the strongly ritualized wording of decision letters, in which editors convey to the authors that their manuscript "unfortunately cannot be accepted for publication in its current form", but that the authors are invited to revise and resubmit it to the journal.

In the case of peer-reviewed journal articles, researchers can infer its certain epistemic status from the stylistic features of the medium (e.g. name and logo of the journal). In a similar vein, the stylistic features of preprints allow researchers to infer its uncertain epistemic status. We can consider preprints a relatively stable media genre, which means that within certain scientific communities the stylistic features of preprints are relatively homogenous. For the community of organizational research, the stylistic features that make a text recognizable as a preprint include the 'right' font (12pt Times New Roman), the 'right' formatting (first-order headings in bold font), the 'right' citation style (APA), or the 'right' software (Word instead of LaTeX). That a text belongs to the genre of preprints becomes particularly evident to researchers when the titlepage includes imperative watermarks such as "do not share without permission of authors". Taken together, these stylistic features evoke the impression that a manuscript is intended for peer review.

In the early days of preprints, researchers were careful to circulate their unrefereed preprints only within their close circle of colleagues. Researchers assumed that only close colleagues were able to recognize the scientific quality of the preprint even without peer review. Sharing preprints with researchers outside the close community was associated with the fear that they would not understand the preprint properly and that this would negatively affect the author's reputation (Gunnarsdottir, 2005). Along with the recent structural transformation of the scientific public sphere, how researchers handle their preprints has changed substantially. Preprint servers and social media platforms allow researchers to share their preprints easily beyond their close circle of colleagues (Bauer et al., 2023). The prospect of reputational gains from wide reception and citation seem to outweigh the fear of reputational loss.

To better understand how preprints can reconfigure practices of theorizing in organizational research, we first showed that today organization scholars are more likely than before to encounter preprints in their everyday work. We then argued that epistemic uncertainty, as a key characteristic of preprints, forges a link between medium and theory. For

the final part of our answer, we draw on an insight from sociological research on economic uncertainty: actors confronted with uncertainty do not necessarily have to consider it as a "threat to be eliminated," but can also "value it as a resource" (Esposito, 2015, p. 91). More specifically for our case, researchers encountering a preprint may perceive its epistemic uncertainty as a threat or as a resource—a distinction that in turn determines how they incorporate the preprint into their theorizing. By focusing on the threat/resource distinction, we leave aside the question of which cognitive, intuitive, or heuristic strategies individual scholars use to subjectively determine the quality of a preprint (e.g. gut feeling, author status, close reading). Rather, the distinction allows us to examine how it affects the work of researchers when they do or do not take a leap of faith regarding the scientific quality of a preprint.

Theorizing with Preprints

For some time now, the social sciences have been interested not only in "theory as a thing" but also in "theorizing as a practice" (Krause, 2016, p. 23; Swedberg, 2014). A growing interest in theorizing, as a bundle of activities through which theory emerges, can also be observed in the reflexive program of organizational research (Cornelissen, Höllerer, Boxenbaum, Faraj, & Gehman, 2024; Cornelissen, Höllerer, & Seidl, 2021; Cunliffe, 2022; Weick, 1995; Zundel & Kokkalis, 2010). For our study on the use of preprints in organizational research, we also follow this practice-view on theory as theorizing. In what follows we examine as illustrative examples three typical activities of organizational theorizing—conceptualizing, grant writing, reviewing—and show how these activities can get reconfigured depending on whether researchers consider the epistemic uncertainty of preprints as a threat or as a resource (see Table 2).

----- Insert Table 2 about here -----

Conceptualizing

Among the many activities of theorizing, conceptualizing occupies a particularly prominent position. Cornelissen et al. (2021, p. 3) even refer to conceptualizing as “theory writ large” because they see it as the unifying component of different “styles of theorizing” (p. 9), such as propositional, configurational, or processual theorizing. When conceptualizing, researchers make a decision about what the phenomenon they study is more generally a case of. For example, if researchers have studied the work of doctors in a hospital, they can choose whether they conceptualize this phenomenon as a case of ‘professional work’, ‘occupational work’, or ‘knowledge work’. When conceptualizing, researchers can draw on various sources to identify, compare, and select suitable theoretical concepts. For example, they can use existing concepts from peer-reviewed journal articles or develop new concepts through their own reasoning. With the increasing prevalence of preprints, this media genre is also becoming a relevant source of theoretical concepts.

It is increasingly likely that during the conceptualization process, researchers will come across preprints that are in some way related to the phenomenon they are studying. Such encounters pose a problem for researchers. On the one hand, they want to use a concept that best captures what is theoretically interesting about their phenomenon (Barley, 2006). Preprints have the potential to contain interesting concepts because they are still unknown to most readers and could therefore open up new and intriguing perspectives (Davis, 1971). On the other hand, researchers want to avoid reviewers criticizing the conceptualization—a central element of a journal article—on the basis of an inadmissible reference. If researchers come across an intriguing preprint while conceptualizing but view its epistemic uncertainty as a threat, they have at least two options for avoiding potential criticism. First, they can search for similar concepts in peer-reviewed journal articles that they could use instead. Second, they can discard this theoretical avenue to make sense of their empirical material altogether and look for concepts in an entirely different literature. Based on the example above, this would mean that researchers would completely abandon the literature of expert work and

analyze their phenomenon (i.e. doctors at work) as a case of healthcare management.

The alternative pathway is that researchers can see and use epistemic uncertainty as a resource. For example, they can indulge themselves in a useful fiction and act *as if* the preprint is already part of a larger theoretical discourse or vocabulary (Ortmann, 2004). The authors thus use the epistemic uncertainty of the preprint as a resource and make a bet on the future. If the cited preprint passes the review process successfully, the theoretical concept gets legitimized retroactively. However, if the cited preprint is rejected and thus remains in the status of epistemic uncertainty for the time being, this is unlikely to have an effect on the published paper citing the preprint. On the contrary, if a peer-reviewed article cites a preprint, this could increase the chances of the preprint successfully passing the peer review process, as reviewers and editors would learn of this citation and could consider it a sign of the preprint's academic quality.

However, there is another variant in which embracing the epistemic uncertainty of preprints can reconfigure the practice of conceptualizing. When authors write review papers or theory papers, preprints can not only act as a source for theoretical framings, but also as a phenomenon in its own right that is in need for such conceptual framing. We can assume that researchers are particularly inclined to use preprints as a phenomenon-to-be-conceptualized when it comes to particularly expansive and dynamic research areas. One example of this is a review article on algorithmic control in organizations (Kellogg, Valentine, & Christin, 2020) that was recently published in the *Academy of Management Annals* (AMA). The reference list of the review article includes several preprints published on preprint servers such as SSRN and arXiv, as well as references to unpublished conference papers. The fact that the review article by Kellogg and colleagues has been cited more than 1,300 times within a few years suggests that the academic credibility of a conceptualization is by no means harmed if the framed literature also includes texts with an uncertain epistemic status.

Grant writing

The German physicist Max Planck (1950) is credited with the observation that theories change “one funeral at a time” rather than through rational deliberation among academic peers. For most scientific communities today, this saying would need to be updated to “one major research grant at a time.” The influence of grants on the rise and fall of theories appears to be particularly pronounced in the field of organizational research, as theories here are promoted less by individual charismatic researchers and more by larger, resource-intensive research movements (Clegg et al., 2020; Mehrpouya & Willmott, 2018). Therefore, the second practice of theorizing we analyze in relation to preprints is grant writing.

The practice of grant writing differs significantly from the practice of writing journal articles. The particular nature of grant writing is also expressed through idiomatic terms such as *Antragslyrik* (German for “grant poetry”). In terms of their relationship to theory, the two practices differ in their temporal orientation. In organizational research, writing journal articles is strongly oriented towards the past, as their aim is often to interpret, understand, and explain empirical phenomena retrospectively. The practice of writing grant proposals, in contrast, is more oriented towards the future. In this sense, writing research proposals is somewhat similar to the production of “imagined futures” (Beckert, 2021), a practice that has been extensively studied in the field of business and economics. When writing grant proposals, researchers tell plausible stories of how a theoretical debate will look like in the future—and how the future theory will be able to address real-world problems that are already known in the present—given the fact that sufficient resources will be allocated by the grant-awarding body. As we have described above, preprints as a genre of scholarly media have a strong orientation towards the future, resulting from the fact that the peer review process is still incomplete in the present. There is thus a kind of inherent connection between the practice of grant writing and the genre of the preprint. As with the writing of journal articles, the question for researchers is whether to include preprints in their grant applications. The difference for

researchers, however, is that they can expect orientation towards the future to play a greater role in the evaluation of grant applications than it does in the peer review process of journals.

So, how can authors address a preprint's epistemic uncertainty when writing grant applications? When researchers consider the epistemic uncertainty of preprints as a threat, they will avoid citing a preprint they encounter in their proposal and assume that reviewers expect the future-orientation of the proposal to be primarily constructed from legitimate contributions to a theoretical debate. In this case, in order to align the grant proposal closely with the future of a theoretical debate, researchers would rather cite very recently published studies, such as postprints that have just been accepted by a journal, published "online first," but in most cases not even been fully formatted (see Table 1). To emphasize the future orientation of their proposal, researchers would also cite peer-reviewed literature reviews, which often include comprehensive agendas for future research within a theoretical debate.

But researchers can also consider epistemic uncertainty as a resource when writing grant applications. When researchers cite their own or others' preprints in their grant proposals, they can reach out into a more distant future when making their promise about theory development. By mobilizing the theoretical content of a preprint, they promise to develop new theory from a starting point—i.e. the preprint—which in itself is not a stabilized point of reference yet. Such a leap into the future seems particularly attractive for research funders who seek to fund "high risk, high reward" projects. An example of such a successful leap into organization theory's distant future is the case of organizational path dependence theory. In 2004 the German Research Foundation (DFG) had awarded a major grant to Freie Universität Berlin (FU) to establish a doctoral program on the theory of organizational path dependence. However, the first English language paper on organizational path dependence by FU researchers was only presented a year later at the EGOS Colloquium 2005 and circulated as a preprint thereafter for many years. When the funding had to be renewed in early 2008, the FU

researchers thus had to mobilize this preprint as a resource. Later in the year, not only was the grant renewal proposal approved, but the preprint was eventually accepted for publication in the *Academy of Management Review* (Sydow, Schreyögg, & Koch, 2009). Ten years later, this very paper was awarded the AMR Decade Award because it had received most citations over the period of ten years after its publication. The high number of citations, in turn, can partly be attributed to the publications by dozens of doctoral students who, funded by a preprint-based grant renewal, went on to further theorize organizational path dependence.

Reviewing

Reading a peer-reviewed article, one can easily get the impression that the underlying work of theorizing was done by the author or team of authors alone. However, anyone who has ever steered a scientific article through the peer review process can report that reviewers and editors get involved —sometimes more, sometimes less intensively (Krlev & Spicer, 2023)—in the tug-of-war over the theoretical contribution of the article as well (Bartunek, 2021; Hirschauer, 2010). In our analysis of conceptualizing and grant writing, we focused on the authors of manuscripts and how they manage their encounters with preprints. For the activity of reviewing, we shift our focus and discuss how this practice of theorizing gets reconfigured when reviewers and editors face epistemic uncertainty. To clarify, we are not interested in full array of practices through which the reviewers and editors evaluate the scientific quality of a manuscript, but more specifically in the question how reviewers and editors act when they find out that a manuscript under review draws on preprints.

In organizational research, a reflective approach to sources is widely considered to be an important part of scientific work (Schaefer & Alvesson, 2017). However, the assumption that a careful selection of sources is a key responsibility of authors also implies that reviewers and editors should intervene in the selection of sources only to a very limited extent. Krlev and Spicer (2023, p. 1624), refer to this implicit agreement as “epistemic respect” and see it violated when reviewers assess “scholarly work on the

basis of irrelevant information such as the epistemic origins of arguments, or the ranking of journals in which the arguments were published." The decisions that reviewers and editors have to make when dealing with cited preprints, however, go beyond this normative proposal to ignore journal rankings, as it is only manuscripts published in peer-reviewed outlets that could be ranked in the first place. In other words, the question whether preprints deserve the same "epistemic respect" as peer-reviewed journal articles is a key part of their epistemic uncertainty.

If reviewers perceive the epistemic uncertainty of cited preprints as a threat, they might ask authors to move the citations to peripheral places in the manuscript (e.g. places far from where the "conceptualizing" takes place) or even to remove them from the manuscript altogether. However, asking authors to remove 'dirty' epistemic uncertainty from a manuscript raises new ethical complications beyond matters of epistemic disrespect. If authors are asked to exclude preprints from their manuscripts, they can either look for a somewhat similar theoretical concept or—much less time consuming—drop the reference to the preprint altogether and present the borrowed theoretical concept as their own invention. This response would have the diametric effect of what the preprint as a media genre was designed to do (in particular, by associating a preprint with a DOI), which is to certify authorship of an idea even though the idea has not yet been peer-reviewed.

In addition, the role of a journal editor is not what it used to be. Today, editors not only have to pay attention to the theoretical quality of peer-reviewed manuscripts, but also ought to keep a close eye on their journal's position in rankings and ratings (Baum, 2011; Osterloh & Frey, 2015, Thananusak & Ansari, 2019). From the editors' point of view, journal articles that both fully meet their own scientific standards and attract a lot of attention, i.e. are widely disseminated and cited by researchers, are particularly desirable. Editors can use the epistemic uncertainty of preprints as a resource to assess whether a manuscript on their desk will attract attention in the future. Rather than requesting the removal of cited preprints, editors can use preprint servers to check how often a preprint

has been viewed or downloaded already (for a description of this practice, see Black & Caron, 2006). If particularly popular preprints are cited, it is reasonable to assume that the peer-reviewed manuscript is attempting to join a particularly lively theoretical debate. This, in turn, may be an incentive for editors to accept or invest additional efforts into developing a manuscript. This scenario also shows that using epistemic uncertainty as a resource, needs by no means be accompanied by a contribution to the scientific common good, or at least to scientific norms and principles (e.g. selecting manuscripts for scientific quality and not just for expected attention).

Harnessing the Potential of Provisional Incompleteness

Our study speaks to the debate on the different media of theory and the medial dimension of theorizing in organizational research. Thus far, this debate has focused primarily on the characteristics of peer-reviewed journal articles as the most important medium of theory (e.g. Hensel, 2022; Spoelstra, 2017) and the business models and political economy of the science media system more broadly (e.g. Beverungen et al., 2011, Dobusch & Heimstädt, 2019). Many of these contributions correspond to what Cutcher et al. (2020, p. 8) call “iconoclastic” contributions to reflexive theorizing, that is, contributions which propose breaking with existing institutions, values, and practices. For example, Spoelstra (2017, p. 617) suggests eliminating the distinction between “normal articles” and “special papers” in journals in order to bring back lost innovation and creativity to organizational research. Other contributions of this kind, for example, call for the replacement of organized secrecy in the review process with radical transparency (Willmott, 2022), for journal articles to be told in a film-like manner (Manning, 2024), or even for films themselves to be recognized as scholarly contributions (Wood, 2015; Wood et al., 2018).

By focusing on the use of preprints, we also touch upon one of the central institutions and beliefs of organizational research: the completeness of texts and arguments (produced by the peer-review

process) as a prerequisite for their inclusion in theoretical debates. There are a few contributions to reflexive theorizing that take on an iconoclastic impetus regarding this topic, calling for the replacement of completeness with incompleteness to solve pressing problems in science. For example, some authors propose replacing the system of complete and fixed journal articles with a "parallel universe" of internet-based "dynamic publication formats" that can be continuously updated and modified (Heller, The, & Bartling, 2014, pp. 191-192). With our contribution, however, we do not want to formulate any fundamental criticism of the peer-reviewed journal article or the peer review process (Willmott, 2022). Nor do we want to generally advocate a broader repertoire of media of theory, as authors do who associate a greater variety of media with the hope of a richer understanding of organizations (Wood et al., 2018). We are not concerned with leveling differences in the capacities of different types of media to support theorizing.

Instead, our goal is to raise awareness for the special place of preprints in the repertoire of scholarly media. We have shown that incompleteness is a defining characteristic of preprints. However, unlike media such as Wikipedia (Garud, Jain, & Tuertscher, 2008) or Large Language Models (Cornelissen et al., 2024), the incompleteness of preprints may be limited in time. Preprints that successfully pass through the peer-review process thus transform—with major or more minor changes—into complete and fixed journal articles. Thus, the epistemic uncertainty of preprints does not result exclusively from their incompleteness but is constituted by the interplay of provisional incompleteness in the present and potential completeness in the future. And it is this interplay, we argue, that makes preprints a medium that can be used generatively by organizational researchers.

When researchers regard epistemic uncertainty as a threat, they try to keep it out of their own and other's texts and proposals—the front stage of theorizing. However, with the structural transformation of the scientific public sphere, researchers today can hardly avoid having encounters with preprints on the backstage of their theorizing, e.g. while procrastinating

on Researchgate or X (formerly known as Twitter). If researchers see preprints as a threat, ethically delicate situations can arise in which they incorporate the arguments from preprints into their theorizing as a form of "pre-understanding" (Alvesson & Sandberg, 2022) and without citing them in their texts.

However, if researchers view epistemic uncertainty as a resource, it can help to fertilize their own theorizing activities. For example, as described above, preprints can help to theorize phenomena that are developing particularly rapidly and are of great societal interest, such as generative AI and LLMs. Also, preprints can help to theorize in a more interdisciplinary way, for example because they enable disciplines with a rather fast peer review process (e.g. medicine) to pick up on current research from disciplines with a rather slow peer review process (e.g. organizational research). However, using preprints as a resource might also lead to more speculative and less robust theorizing. Also, treating a preprint and its later published version as equivalents might be substantially misleading—particularly in disciplines such as organizational research with often quite developmental review processes that regularly lead to substantial changes.

Preprints beyond Organizational Research

The starting point for this article was the observation that, due to the ongoing structural transformation of the scientific public sphere, preprints today play a more prominent role in the everyday work of researchers than they did a few years ago (Dobusch & Heimstädt, 2024). We then showed that the rise of this media genre, due to its particular characteristic of epistemic uncertainty, can reconfigure practices of theorizing in organizational research (Cornelissen et al., 2021; Cornelissen et al., 2024; Zundel & Kokkalis, 2010). However, a digitally networked public sphere has not only made preprints more salient among researchers but has brought preprints in contact with actors outside of the scientific community as well—something that was impossible in the days of IEGs and highly unlikely in the early days of preprint servers. The fact that their

preprints can travel beyond the boundaries of the scientific community creates new possibilities and responsibilities for researchers. In the following, we discuss these implications regarding three groups that maintain quite different relations with organizational research.

Practitioners: Many people who populate, design, and advise organizations have a great interest in up-to-date expert knowledge about the practices, processes, and problems of organizing. One route by which they can gain this knowledge is through researchers with an interest in transfer activities. However, researchers compete in this market with other providers of expert knowledge such as consultants, coaches, or management gurus (Kieser, Nicolai, & Seidl, 2015). Compared with academic researchers, these competitors have at least two advantages: First, when they create knowledge about organizations, they can fully align its language with the needs and conventions of practitioners. Organizational researchers often try to compensate for this advantage by publishing shorter and jargon-free versions of their peer-reviewed papers in bridging media such as the Harvard Business Review or The Conversation (Birkinshaw et al., 2016; Schulz & Nicolai, 2015). Second, these competitors can publish their expert knowledge much faster than organizational researchers because they do not subject their findings to a formal peer review process.

In order to keep up with these competitors in terms of speed, it can be helpful for organizational researchers to deliberately bring practitioners into contact with their preprints. In this way, organizational researchers do not have to leave the epistemic authority on current topics to consultants and gurus for several months or even years until the academic peer review process is finally completed. Guiding advice for this suggestion to organizational researchers can once again be found by looking back into the coronavirus pandemic. During that time virologists and other biomedical researchers across the world, regularly translated the statements and implications of new preprints for the general public (for example, through radio shows and podcasts). Many of these virologists

did not conceal the epistemic uncertainty of the preprints, but explicitly pointed out their provisional incompleteness.

Parasites: Another group particularly attracted to preprints are "institutional parasites" who exploit and sustain the scientific system in the short term, but through their deviant behaviour undermine it in the long term (Rintamäki, Parker, & Spicer, 2024). One example of such parasites are policymakers who strategically exploit the epistemic uncertainty of preprints in order to assert their own power interests. During the coronavirus pandemic, the municipal government of Mexico City provided the deworming drug Ivermectin free of charge to citizens who tested positive for the virus. When criticism of the scientific basis of this measure arose, the government justified their actions by referring to a preprint – which, as it turned out, some of its own employees had authored and uploaded to a preprint server (Sheridan, 2022). The scientific community subsequently criticized both the scientific quality of the preprint and its use as an instrument of retroactively framing a political decision as evidence-based. In light of this controversy, the preprint server's administrators, members of the scientific community, decided to remove the preprint from the server. The actions of the municipal government of Mexico City may have supported science in the short term and superficially (by claiming to ground policymaking in scientific evidence) but would have harmed it in the long term if the administrators of the preprint server and critical journalists had not intervened.

This example shows that through the openness of preprint servers, not just academic researchers but other actors as well can use epistemic uncertainty as a resource. The goals of these actors, for example institutional parasites, do not necessarily have to coincide with the goals and values of the scientific community. This example further shows that the popularity of preprints implies a certain loss of control for researchers. The epistemic uncertainty of preprints makes it possible for non-scientific actors to claim that the content of a preprint is a legitimate scientific contribution. Whether or not these claims are successful is also influenced by the underlying infrastructures, for example when the administrators of

a preprint server decide to delete a preprint. This example demonstrates that it is particularly important for the scientific community to retain control over these infrastructures (see also Heimstädt & Friesike, 2021). Only if a preprint server is in the hands of the scientific community can it decide whether a preprint should be included or deleted according to purely scientific criteria as opposed to business-oriented criteria such as downloads or views.

Allies: A third group comprises actors who embrace, lean on and sometimes even defend science, while being not part of the scientific community themselves. In a study of social media groups during the coronavirus pandemic, Berr (2024) refers to the members of these groups as “allies of expertise”. She describes how members, most of whom are not trained scientists, use the groups to exchange information about scientific research. The purpose of this exchange is to prepare for disputes with other social media users, whom they view as “enemies” of science (2024, p. 20). In Berr’s study, it becomes clear that preprints play an important role in the allies’ discussions, but that the epistemic status of preprints is only sometimes recognized as uncertain.

Another example of such actors comes from economic research. In 2010, Harvard economists Carmen Reinhart and Kenneth Rogoff published a preprint of a study on national debt levels. Many policy makers—allies of economic science—have relied heavily on this preprint and used it to legitimize austerity policies in the US and Europe. However, this portrayal and use of a preprint as reliable scientific evidence fell apart when Thomas Herndon, a doctoral student at the time, asked the authors for the underlying data set, which was initially not available, reanalyzed the data, and uncovered fundamental errors in the statistical calculations (Herndon, Ash, & Pollin, 2014). In this case, policymakers assumed the role of allies of expertise when they referenced the preprint in the belief that they were practicing science-based policymaking.

These two examples illustrate the specific nature of allies as consumers of preprints: They have a great interest in preprints, as the media genre promise them very up-to-date and therefore valuable

‘ammunition’ against their opponents. At the same time, the allies of expertise—in contrast to the parasites—are not fully aware of or closely attentive to the difference between preprints and other types of scholarly texts (see Table 1). From their point of view, the preprints they encounter are characterized by epistemic certainty, precisely because they do not recognize or acknowledge their epistemic differences from peer-reviewed articles. For scholars, this means that they have to reckon not only with an intentional misuse of the preprint genre, e.g. by parasites, but also with a well-intentioned misreading of the genre and its epistemic status by allies of expertise.

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Table 1: Types of scholarly manuscripts

Type	*Definition*
Preprint	Manuscript that is intended for peer review but that has not yet been submitted for, or completed peer review
Postprint	Manuscript that is accepted after peer review but that has not yet finally been copyedited, typeset, and formatted
Proof	Accepted manuscript that is copyedited, typeset, and formatted—prior to last (minor) changes by the authors
Version of record	Fully copyedited, typeset, and formatted manuscript that is published through the journal website

Table 2: Practices of theorizing and their reconfiguration through preprints

Theorizing practices	*Description*	*Epistemic uncertainty as a resource*	*Epistemic uncertainty as a threat*
Conceptualizing	Framing the topic with a specific analytical concept	Using an analytical concept from a preprint that offers a great fit with the topic	Using a less-fitting analytical concept from a peer-reviewed source
Grant writing	Telling compelling stories about how a theoretical debate could be advanced through additional funding	Using preprints to leap into the distant future of a theoretical debate	Using peer-reviewed sources (e.g. postprints, research agendas) to peek into the near future of a theoretical debate
Reviewing	Shaping the theoretical	Using performance	Marginalizing or even excluding

	argument of a manuscript in deliberation between authors, reviewers, and editors.	metrics of cited preprints as heuristic for future interest in a manuscript	preprints from the reference list