

BOUNDARY WORK AMONG GROUPS, OCCUPATIONS, AND ORGANIZATIONS: FROM CARTOGRAPHY TO PROCESS

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This article reviews scholarship dealing with the notion of “boundary work,” defined as purposeful individual and collective effort to influence the social, symbolic, material, or temporal boundaries, demarcations; and distinctions affecting groups, occupations, and organizations. We identify and explore the implications of three conceptually distinct but interrelated forms of boundary work emerging from the literature. *Competitive* boundary work involves mobilizing boundaries to establish some kind of advantage over others. In contrast, *collaborative* boundary work is concerned with aligning boundaries to enable collaboration. Finally, *configurational boundary work* involves manipulating patterns of differentiation and integration among groups to ensure that certain activities are brought together, whereas others are kept apart, orienting the domains of competition and collaboration. We argue that the notion of boundary work can contribute to the development of a uniquely processual view of organizational design as open-ended, and continually becoming, an orientation with significant future potential for understanding novel forms of organizing, and for integrating agency, power dynamics, materiality, and temporality into the study of organizing.

INTRODUCTION

In line with the practice turn in organization and management theory (Nicolini, 2012; Schatzki, Knorr-Cetina, & Von Savigny, 2001), the notion of “boundary work” refers to purposeful individual and collective effort to influence the social, symbolic, material, or temporal boundaries; demarcations; and distinctions affecting groups, occupations, and organizations (Lamont & Molnár, 2002; Phillips & Lawrence, 2012). Boundary work is important because of its consequences for the dynamics of collaboration, inclusion, and exclusion that can in turn

influence work practices, learning, and effectiveness in and around organizations (Lindberg, Walter, & Raviola, 2017; Mørk, Hoholm, Maaninen-Olsson, & Aanestad, 2012; Yagi & Kleinberg, 2011; Zietsma & Lawrence, 2010). Boundary work also contributes to the maintenance or disruption of power relations among groups, organizations, and society more generally (Allen, 2000; Arndt & Bigelow, 2005; Barrett, Oborn, Orlikowski, & Yates, 2012; Bucher, Chreim, Langley, & Reay, 2016).

The notion of “boundary work” was originally coined by Gieryn (1983) to describe the discursive strategies used by scientists to demarcate science from nonscience. Although initially slow to develop, in the last decade, scholarship adopting the notion of

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“boundary work” has burgeoned,² with researchers applying it to multiple levels of analysis (individual, group, organizational, occupational, and institutional), using multiple conceptions of the notion of “work” (discursive, or practice-based), and developing a range of typologies to describe this work, its triggers, and its consequences. Yet, so far, an integrated synthesis of this literature is missing.

The purpose of this review is therefore (1) to clarify the distinctive contribution of the notion of boundary work to organization theory; (2) to distinguish different types of boundary work, their triggers, and consequences; and (3) to build on and reach beyond existing scholarship to suggest directions for future research. We argue based on this review that the notion of boundary work can contribute to improving the way we address difference, conflict, collaboration, and integration in organizations. The notion of boundary work can also contribute to the development of a uniquely processual view of organizational design, with significant potential for understanding novel forms of organizing, and for integrating agency, power dynamics, materiality, and temporality into the study of organizing (Weick, 1979).

We begin by specifying the nature of the boundary work concept, distinguishing it from related concepts and phenomena, and explaining the scope and methodology for our review. We then introduce three conceptually distinct but interrelated forms of boundary work emerging from our review that we label “competitive boundary work,” “collaborative boundary work,”³ and “configurational boundary work.” In the main body of the article, we explore and assess the literature dealing specifically with these forms and draw out key insights and opportunities for future development. We follow this with a broader discussion of the potential for integrating the insights from the three bodies of literature, as well as for developing the notion of boundary work in new directions.

SCOPE AND METHODOLOGY

To develop this article, we began by searching for articles and books using the notion of “boundary work” in their abstract, title, or keywords in Google Scholar, the Web-of-Science and a selection of top

management journals.⁴ To be included, articles and other texts had to deal with issues relevant to organization and management theory. Distilling usage from the existing literature and as sketched earlier, we define boundary work here as purposeful individual and collective effort to influence the social, symbolic, material, and temporal boundaries; demarcations; and distinctions affecting groups, occupations, and organizations. This definition offers a processual constructivist view of boundaries as in flux, as continually becoming (Langley & Tsoukas, 2017) and as subject to human agency, something that is not always reflected in other related concepts (e.g., boundary spanning and boundary objects), where the preexistence of boundaries as fixed elements of structure tends to be assumed.

Note here that the reference in our definition to “symbolic” and “social” boundaries is inspired by Lamont and Molnár’s (2002) discussion of the nature of boundaries in the social sciences. “Symbolic boundaries” are socially constructed interpretive distinctions concerning concepts (e.g., distinctions between what is or is not scientific, legal, or ethical) which may or may not be embodied in distinctions among social groups. In many cases however, symbolic distinctions also come to be attached to social boundaries, including certain people and excluding others, as in the case of professions or occupations. Other authors have added different types of boundaries to the mix. For example, Hernes (2004) adds reference to physical boundaries, incorporating the notion of spatial separation, and thus the role of materiality that we have thus also included in our definition. Other authors introduced the notion of “temporal boundaries,” (Bucher & Langley, 2016; Orlikowski, 2002; Stjerne & Svejnova, 2016) concerned with specific time periods, suggesting a need to include this in the definition as well.

Our definition helped us specify the scope of relevant literature in two directions: first, in terms of the level of analysis (collective rather than individual) and, second, in terms of the notion of work as involving ongoing activities or sets of practices. In our initial review, we noted that several scholars use the notion of “boundary work” to refer specifically to

² More than 70% of the articles included in our study were published in or after 2008.

³ The term “collaborative boundary work” was first coined to our knowledge by Quick and Feldman (2014).

⁴ These journals were *Administrative Science Quarterly*, *Academy of Management Journal*, *Academy of Management Review*, *Academy of Management Annals*, *Organization Science*, *Organization Studies*, *Organization*, *Human Relations*, *Journal of Management Studies*, *Journal of Management Inquiry*, and *Strategic Organization*.

intraindividual boundaries (e.g., work-home life role demarcation) (Ashforth, Kreiner, & Fugate, 2000; Nippert-Eng, 1995/2008). Given our interest in boundary work at the collective level, we decided to exclude this body of work for the purposes of this review because the processes in play are quite different, deserving separate attention.

We also note that there are some adjacent concepts, such as boundary spanning and boundary objects, that are often studied without any reference to “boundary work” *per se*. On close analysis, a subset of these studies do in fact address practices of boundary work as we have defined them without using this specific term, and we have therefore analyzed some significant examples under the heading “adjacent literature” in our review. However, most studies referring to such adjacent concepts were considered outside the scope of the review because they do not view boundaries as subject to human agency. For example, most studies on “boundary spanning” generally take for granted the existence of well-defined and immutable boundaries, and focus on “actions to establish linkages and manage interactions with parties in the external environment,” where the external environment is seen as lying beyond those boundaries (Marrone, 2010: 914). By contrast, studies mobilizing the notion of “boundary work” problematize boundaries by conceptualizing their creation, maintenance, blurring, and transformation as the target of purposeful action. Because the different bodies of literature are not entirely disjoint, in the review that follows, we do pay some attention to adjacent literatures to ensure coverage of relevant concepts and ideas. Nevertheless, our investigation of the literature and previous reviews on related topics suggests that there is a unique and important body of scholarship drawing on the notion of boundary work as we have defined it that has not previously been the subject of a major synthesis.

With these delimitations, there remain 160 relevant articles in the corpus. These studies deal with boundary work in relation to social, symbolic, material, and temporal boundaries affecting groups, occupations, and organizations. As a first step in analyzing our corpus, we selected and read in depth 15 articles from our initial search, chosen because they appeared influential and were published in management and organization journals. As an author team, we then discussed similarities and differences between the articles and identified seven emergent themes that would enable us to richly analyze the entire corpus. These themes were then used to code




each article from the corpus in a one-page table. Five of the themes we used were empirically based (the site of boundaries, who is involved, triggers, activities of boundary work, and consequences). The other two codes focused on theoretical grounding and methodologies, respectively. As we coded, we began to notice that articles focused on three somewhat different empirical phenomena, depending on who the boundary workers were, their positioning with respect to boundaries in the making, and the implied purpose of boundary work. These empirical differences were also associated with the use of somewhat different theoretical lenses. We therefore decided to orient our analysis around the three categories labeled competitive, collaborative, and configurational boundary work as indicated earlier.

In a second step, we classified the coded articles into the three categories. Each article was reread and discussed by at least three authors. Given the large number of articles examined overall, it was not possible to be exhaustive within the text of this review. We therefore selected the most relevant articles for each category for more detailed discussion in the current article. The criteria at this stage included coverage of seminal work, the inclusion of articles using different theoretical perspectives and contexts, and the centrality of the themes studied to the field of management and organization studies. The selected articles are summarized in Appendices 1–3 in the supplementary materials. We focused specifically on 29 articles illustrating competitive boundary work, 25 articles illustrating collaborative boundary work, and 18 illustrating configurational boundary work.

As a third step, we constructed subcategories of each main category, focusing on how different types of boundary work are performed. We then assessed the contributions of each category to the study of boundary work and identified future research directions. In Table 1, we summarize the three types of boundary work used to structure the overall review.

The first and largest category labeled “competitive boundary work” (or work *for* boundaries) groups together studies that focus on how people construct, defend, or extend boundaries to distinguish themselves from others, by defining an exclusive territory (e.g., such as a profession) that appears to confer some kind of advantage. We use the label “competitive” to refer to the self-oriented nature of this kind of boundary work, which construes boundaries or distinctions as mechanisms for acquiring resources or reproducing power, social position, and status for those who engage in it (Bourdieu, 1977).

TABLE 1
Three Types of Boundary Work

	Competitive Boundary Work	Collaborative Boundary Work	Configurational Boundary Work
Schematic representation			
Agents, positions, and purposes	People raising boundaries around themselves to protect territory and exclude others	People realigning the boundaries separating them to enable collaboration	People designing boundaries to orient configurations of differentiation and integration among groups
Historical and theoretical roots	Social studies of science (Gieryn, 1983); Practice theory (Bourdieu, 1977)	Negotiated order theory (Strauss, 1978); Practice theory (Bourdieu, 1977)	Boundary theories (Lamont & Molnár, 2002); Boundary organizations (Guston, 2001)
Adjacent perspectives	Professions, occupations (Abbott, 1988, 1995)	Boundary spanning (Levina & Vaast, 2005); Boundary objects (Carlile, 2002, 2004)	Framing and spaces from social movement theory (Benford & Snow, 2000)
Modes of boundary work	Working for boundaries: Defending Contesting Creating	Working at boundaries: Negotiating Embodying Downplaying	Working through boundaries: Arranging Buffering Coalescing
Consequences of boundary work	Creation, maintenance, or disruption of power relations between groups	Collaboration, learning, and coordination among different groups	Reconfiguration of patterns of collaboration and competition among groups

The second category labeled “collaborative boundary work” (or work *at* boundaries) considers how people draw on, negotiate, blur, or realign boundaries in interaction with others to collaborate, to coordinate, or to get everyday work done (Strauss, 1978). This category of studies recognizes that boundaries may contribute to facilitating coordination, while concurrently requiring people to engage in practices to connect or productively align their differences.

The third and final category shifts the locus of agency to a higher level. What we call “configurational boundary work” (or work *through* boundaries) considers how people work from outside existing boundaries to design, organize, or rearrange the sets of boundaries influencing others’ behaviors. This category focuses on how patterns of differentiation and integration among sets of people within or around organizations may be reconfigured to ensure that certain activities are brought together within bounded spaces, whereas others are at least temporarily kept apart, for producing particular kinds of collective action.

For each of the three streams of literature reviewed, we begin by tracing its historical roots. We then examine the main modes of boundary work emerging in this particular stream. This is followed by an assessment of key contributions and limitations. Here, we

identify the main insights of the studies reviewed in each stream and then raise a series of more critical concerns and emergent opportunities under two main subheadings: one focusing on the nature and dynamics of this type of boundary work (*i.e.*, its central tendencies) and the other on variations, more specifically on what we know and do not know about the contingencies and consequences of this type of boundary work. This analysis will set the scene for our later discussion, where we examine how the three streams of literature and the different types of boundary work they describe intersect and interact, and we point to some overarching directions for future development.

COMPETITIVE BOUNDARY WORK: WORKING FOR BOUNDARIES

“Competitive boundary work” (or work *for* boundaries) focuses on how people defend, contest, and create boundaries to distinguish themselves from others to achieve some kind of advantage. Boundary relations here are often constructed as a dichotomy that assigns superior legitimacy and power to the favored side while excluding the other. This is manifested, for example, in studies of how scientists do boundary work to distinguish themselves from nonscientists (Garud, Gehman, & Karunakaran,

2014; Gieryn, 1983; Murray, 2010), how groups or organizations do boundary work to define legitimate membership and exclude others (Ashuri & Barllan, 2016; Edlinger, 2015; Mikes, 2011; Santos & Eisenhardt, 2005), and how professions do boundary work to defend, extend, or maintain their jurisdictions (Allen, 2000; Bach, Kessler, & Heron, 2012; Burri, 2008; Hazgui & Gendron, 2015). The self-defined boundaries of inclusion are in a sense paradoxical because inclusion cannot be defined without its opposite (the “other”), with the result that others may well push back, potentially leading to boundary struggles or contests (Bucher et al., 2016; Ezzamel & Burns, 2005; Lefsrud & Meyer, 2012).

Historical Roots and Adjacent Literatures

Grounded in the social studies of science, Gieryn’s (1983) oft-cited work clearly lies at the foundation of this stream. Drawing on classic texts by both individual scientists (e.g., John Tyndale) and scientific institutions (the National Academy of Science), Gieryn (1983) argued that the rhetorical demarcation of science from nonscience (achieved, for example, by discursively emphasizing ideological elements such as rigor, objectivity, and reliance on causal principles) allowed scientists to defend their intellectual territory and to maintain their position of expertise, authority, and credibility against the competing claims of religion, engineering, and the so-called pseudosciences (such as phrenology). Gieryn (1983: 781) thus highlighted the fluid and negotiated character of the concept of science: “‘Science’ is no single thing: its boundaries are drawn and redrawn in flexible, historically changing and sometimes ambiguous ways.” Indeed, he used the term boundary work⁵ precisely to emphasize the ongoing rhetorical and discursive drawing of distinctions, denying the possibility that science could be defined once and for all, but appreciating the powerful situated effects of such discursive demarcations.

Gieryn (1983: 792) further argued that “the utility of boundary work is not limited to demarcations of science from non-science.” Indeed, he contributed to seeding the stream of scholarship discussed in this section by suggesting that the concept could be seen as a generic feature of professionalization, associated with *expanding* authority into other domains, *monopolizing* professional authority by excluding

rivals or outsiders, and *protecting* professional autonomy. In doing so, Gieryn’s work also connects with adjacent literatures on the system of professions spawned by Abbott’s (1988, 1995) classic work, and, in particular, with contributions focusing on jurisdictional battles, or what Anteby et al. (2016) call “doing jurisdictions.” Indeed, the phenomenon described in such contributions often *is* boundary work as defined here, even if that label is not explicitly used. For that reason, we have included selected articles from this adjacent literature stream in our analysis where appropriate (see Appendix 1).

Finally, another relevant theoretical perspective for studying competitive boundary relations is Bourdieu’s (1977, 1984) theory of practice. His notion of “fields of practices” refers in particular to bounded and socially constructed social, historical, and material contexts where certain types of practices are favored and where status distinctions emerge as a function of individuals’ access to economic, cultural, social, and symbolic forms of capital specific to a given field. We now explore the insights emerging overall from the “competitive boundary work” literature.

Modes of Competitive Boundary Work

We identified three broad categories of studies focusing on competitive boundary work, depending on the particular situations and agent positions considered: *defending*, *contesting*, and *creating boundaries* (for detailed coded examples, see Appendix 1 in the supplementary materials). We elaborate on each of these categories in turn.

Defending Boundaries. We include in this category studies focusing on the boundary work of established groups defending, and sometimes also extending, their domains. In these studies, the work examined mainly unfolds around one boundary which is made visible through a dichotomy, e.g., between scientists and nonscientists (Garud et al., 2014; Gieryn, 1983, 1996) or between a privileged occupational group and others in its environment (Burri, 2008; Hazgui & Gendron, 2015; Martin, Currie, & Finn, 2009). Boundary work of this type is ongoing but often made particularly salient by some trigger or external threat (e.g., a government policy, a crisis, and a new technology, see Appendix 1). Thus, most studies deal with how to protect or restore something that has been challenged. However, these studies pay little attention to the boundary work of the challengers (addressed in the second category in the following paragraph).

⁵ Gieryn (1983, footnote on p. 781) mentions that the term “boundary work” was suggested to him by Steve Woolgar in 1981.

Many of the studies focus, like Gieryn (1983), on the *discursive* means by which boundaries are defended or repaired. Drawing on documentary evidence and interview data from members of the target group, they examine the language through which proponents legitimize their position. For example, Garud et al. (2014) analyze Climategate, an incident where a computer server was hacked and climate scientists' data and private emails were spread on the internet shortly before the United Nation's Climate Change Conference in Copenhagen. The breaching of the boundaries of climate science through the diffusion of these materials gave fuel to heated discussions on the trustworthiness of climate science because these informal communications diverged from the aura of objectivity and rigor claimed by scientists. It took several formal investigations by reputable scholars to reestablish the "scientific" legitimacy of the research and the practices used to produce it, something that Garud et al. (2014) call "boundary repair work." Garud et al. (2014) also argue that rather than retreating behind their boundaries, scientists need to engage in *boundary bridging work* to connect with the public using narrative rather than scientific language, a stance that suggests the limits of hard line defensive boundary work (a theme that returns later in this section).

Another interesting set of studies using discursive methods draws on the notion of "ethical boundary work" (Hobson-West, 2012; Wainwright, Williams, Michael, Farsides, & Cribb, 2006). From this perspective, groups respond to ethical challenges associated with their work practices by constructing "an ethical space" that enables them to maintain their credibility and position. For instance, participants in these studies constructed distinctions between different forms of life such as human vs. animal (Hobson-West, 2012) or unfertilized vs. fertilized vs. impregnated embryos (Ehrich, Williams, & Farsides, 2008; Wainwright et al., 2006) to justify animal research, stem cell research, and practices associated with intravenous fertilization, respectively. They then drew on formal legal and ethical frameworks to establish themselves as belonging to the "ethical" category, in contrast to others whose practices were constructed as more questionable (e.g., farmers in the case of Hobson-West's [2012] study of animal scientists). These studies show how defensive boundary work may need to draw discursively on a variety of symbolic categories (in this case, ethical vs. non-ethical) and not just those originally associated with specific occupations.

Although the aforementioned studies focus on discursive strategies, other research has paid greater attention to *practices* of defensive boundary work. The theme of "bridging" returns in a different way in Hazgui and Gendron's (2015) study of how the French audit profession responded to new oversight regulations that threatened their independence. The accounting firms initially resisted new role boundaries by withholding information, downplaying the need for change, and casting doubt on others' competence. However, over time, they found a way to stabilize role boundaries by providing resources to the oversight body and by developing a hybrid regulatory pattern (co-regulation). Essentially, the accountants conserved their dominance through a kind of co-optation and interpenetration with the body that regulated their practices, achieved paradoxically by bridging and "blurring" their boundaries with the regulator.

The reproduction of dominance despite attempts to modulate it is in fact a common theme in the boundary work and related literatures, evident, for instance, in many accounts of attempts to involve lower status professionals in health-care delivery (Allen, 2000; Martin et al., 2009). For example, Allen (2000) described the defensive practices of nurse managers faced with policy changes involving the introduction of assistants and support staff. She showed how these managers engaged in boundary work by demarcating nursing work from other types of work. This was performed by taking charge of the implementation of new role requirements, establishing expertise, and valuing the nurses' holistic expertise and superiority vs. assistants.

A final example of a study of defensive boundary work illustrates not only the role of discourse and practices but also the role of materiality in supporting the reach of a professional group and allowing it to maintain its position. Burri's (2008) ethnographic study of the transformation of health-care imaging focuses on the emergence of technologies such as magnetic resonance imaging (MRI), computerized tomography (CT), and positron emission tomography (PET), and on how (despite a narrow base of original expertise grounded in X-rays) radiologists engaged in boundary work to claim jurisdiction over the technology and practices related to its handling. They did this by ensuring that the new machines were installed physically within radiology departments and not elsewhere (the material dimension), by claiming unique expertise in the production and interpretation of images, and by rapidly developing the ability to publish results from

their research. Essentially, they preemptively populated this adjacent domain to sustain their position in the medical hierarchy.

In sum, studies focusing on defensive boundary work emphasize the efforts of agents situated on one side of a boundary, and show how they discursively construct themselves as distinct and superior on critical dimensions, *e.g.*, scientific or not (Garud et al., 2014; Gieryn, 1983); ethical or not (Hobson-West, 2012; Wainwright et al., 2006); and competent or not (Allen, 2000; Burri, 2008; Hazgui & Gendron, 2015), while at the same time mobilizing practices that instantiate and enhance their claims, *e.g.*, by taking control (Allen, 2000; Burri, 2008), by bridging and co-opting others (Garud et al., 2014; Hazgui & Gendron, 2015; Murray, 2010), and by following normative rules and regulations (Hobson-West, 2012; Wainwright et al., 2006).

Contesting boundaries. Although the studies described previously sometimes hint at the struggles lying behind such boundary work tactics, they do not focus in depth on other parties in these struggles. The present category opens up that black box. Indeed, one of the distinctive contributions of this second category of studies is that they show how and why the boundary work tactics of competing groups may differ depending on their status (Bach et al., 2012; Bucher et al., 2016; Sanders & Harrison, 2008), or centrality with respect to a contested issue (Bucher et al., 2016; Lefsrud & Meyer, 2012), or on their positioning as “incumbents” (*i.e.*, established groups) or as “challengers” (Ezzamel & Burns, 2005; Helfen, 2015; Huising, 2014; Suddaby & Greenwood, 2005).

Bach et al. (2012), Bucher et al. (2016), and Sanders and Harrison (2008) all compare the discursive boundary work of different hierarchically stratified professional groups in the health-care field as they are faced with pressures to work more closely together. Studying nurses and health-care assistants in two hospitals, Bach et al. (2012) showed how nurses underscored the *differences* between the two groups, assigning health-care assistants a subordinate role as “helpers” who did not possess the “holistic” judgment to provide best quality of care that could be carried out only by nurses (reaffirming boundaries). By contrast, the health-care assistants called on the notion of “teamwork” and emphasized *similarities* between the two roles (blurring boundaries). Similar observations are also present in Allen’s (2000) study discussed earlier and are hinted at in Bucher et al.’s (2016) study as well.

The studies by Sanders and Harrison (2008) (on four professional groups working in a unit for heart

failure patients), and Bucher et al. (2016) (on the reaction of five professional associations to proposals for interprofessional collaboration) show, however, that it is not always the highest status groups that tend to emphasize most strongly technical superiority in their discourse. Rather, the discursive boundary work of these groups (doctors, in these cases) tends to normalize their position as natural leaders, without showing the need to justify this position explicitly or with rational arguments. In other words, their superiority seems assumed or taken for granted in their discourse. By contrast, middle and lower status groups, seen as challengers, were much more inclined to make explicit and detailed arguments about their competence and qualifications. Although they do not explicitly refer to “boundary work” *per se*, Suddaby and Greenwood’s (2005) findings about the rhetorical strategies of incumbent law firms facing challenger accounting firms engaging in multidisciplinary practices are similar. Overall, there seems to be a clear tendency for dominant groups to assume the natural rectitude of current boundaries and to begin at least by relying on their power and position to shrug off the claims of others.

Bechky (2003) further shows how boundaries might be contested not only discursively but also through artifacts. In a study of a semiconductor manufacturing firm, she shows how mastery of engineering drawings as recognized symbols of knowledge, authority, and legitimacy enabled engineers to preserve favorable occupational boundaries with two “lesser” occupational groups (technicians and assemblers), whereas technicians’ and assemblers’ control over other artifacts (machines produced in part from the drawings) provided them with some leverage to challenge the engineers’ dominance, although not always successfully.

The question arises, however, as to how boundary contestation may play out over longer periods of time as practices of dominant groups are challenged. Among studies in this category, three examples offer insight into this question. Ezzamel and Burns (2005) examined the introduction of the concept of economic value added (EVA) in a large retail company. This triggered competition between the purveyors of EVA from the finance department and buyers and merchandisers (B&M) in another department, clearly the more powerful group. By blaming finance for a lack of understanding and largely ignoring or undermining their work, the B&M group were “successful” in protecting their domain, and EVA was abandoned. However, B&M managers nevertheless

internalized some ideas from finance, making their boundaries less distinct, a finding that recalls Hazgui and Gendron's (2015) study of auditors discussed earlier.

Although these studies illustrate the failure of challengers, other studies unveil how the politics of boundary work over time can allow power reversals. For example, Helfen's (2015) long-term study of the legalization contest for employment agency work in Germany provides an example of how field settlements between incumbents and challengers may change over time. Incumbents dominating the field are shown to be activating, upholding, and reinforcing boundaries to maintain the field's order (*i.e.*, engaging in what might be called "boundary maintenance work"), whereas challengers strove to redraw and symbolically weaken boundaries (discursively and through images) to change the field from within. Challengers also built ties to actors in other fields, thus connecting to outside developments and forming successful coalitions for change. Although not explicitly mobilizing the notion of boundary work, Huising's (2014) study of how managers attempted to implement greater control over researchers' safety procedures describes very similar practices. More specifically, new managers and laboratory coordinators were able to overcome the passive resistance of specialists who previously held sway by creating a coalition with the researchers, eventually reducing their powerful role and enhancing the role of the coordinators.

A final theme relevant to boundary contestation concerns the potential for intersectionality, in which different types of boundaries become intertwined. We see hints of this in Bach et al.'s (2012) study of health-care assistants, where gender-related concerns for care served to add value to their role as compared with nurses who distanced themselves from such tasks in their quest for status. More explicitly, Johansson and Lundgren (2015) show how boundary work at a supermarket was performed through the intersection of physical, social, and mental (or symbolic) boundaries. Physical boundary work had to do with the gendered division of workers both organizationally and architecturally to a specific workspace. Mental and social boundary work reinforced gender distinctions, even though gender was never used as an explicit reference in decision-making. Similarly, Persson's (2010) study in the Swedish armed forces notes the difficulty of disentangling core (combat) and support (civilian) distinctions from gender distinctions even when these no longer converged, with negative effects on the

status accorded to women even when they held similar positions to men. Finally, Arndt and Bigelow (2005) show how the association between gender and occupational boundaries may emerge over time. The authors draw on archival data to trace the emergence of a new profession—the hospital administrator—showing how boundary work paved the way for the masculinization of a previously female occupation. In the early 1900s, most hospital superintendents were female nurses. However, as a business logic penetrated the health-care field, men came to be seen as appropriate heads of hospitals.

In sum, the studies in this category reveal some of the friction generated by the boundary work of different interacting groups. Although higher status or incumbent groups tend to rhetorically construct their differences and superiority as natural and unquestionable, other groups try to blur boundaries, and go to greater lengths to explicitly justify and promote their positions. The studies presented previously suggest, however, that the ability of challengers or lower status groups to significantly influence the boundaries they share with others may depend less on rational argument and more on their ability to build relationships and compromise (Ezzamel & Burns, 2005) or to construct coalitions with others to achieve change (Helfen, 2015; Huising, 2014).

Creating boundaries. The final category of competitive boundary work deals with newer or weaker groups, creating boundaries and spaces for themselves. For example, newly popular management concepts may trigger boundary work as emerging occupational groups associated with these trends move to legitimize new roles (Edlinger, 2015; Mikes, 2011; Reay, Golden-Biddle, & Germann, 2006). Also, new or alternative organizations may struggle to establish their positions, either in terms of who is or is not included (Ashuri & Bar-Ilan, 2016) or in terms of how they relate to others in their environment (Farias, 2017; Greenman, 2011; Santos & Eisenhardt, 2005).

Edlinger's (2015) study of employer brand managers and Mikes (2011) study of risk managers in banks both consider the boundary work of new occupational groups establishing positions for themselves within organizations. In some cases, the practices identified seem quite similar to those associated with defensive boundary work. For example, Edlinger's (2015) employer brand managers are seen to engage in practices of creating, controlling, promoting, protecting, and policing the "ideal employer brand"—essentially, communicating that

only *their* representations of the employer brand have legitimacy, although they are clearly struggling to make this stick with other internal groups. Similarly, some risk managers (but not others) attempt to create an independent and distinct expert function focusing on “control via measurement” (Mikes, 2011), thus *expanding and demarcating* the territory of mathematical risk control, while protecting the risk function’s autonomy. However, the author also shows how risk managers in another group of banks adopted an alternative style of risk control based on human judgment and soft instrumentation to anticipate risk, *expanding the boundaries* of the risk universe beyond formal modeling by *creating forums* for planning and strategic decision-making. Interestingly, Mikes (2011) suggests that the hard boundary-drawing of the first group of risk managers may protect their expertise, but limit strategic influence. By contrast, maintaining more porous boundaries seemed to increase the potential for influence on strategic decision-making.

The two alternative boundary-creating strategies identified by Mikes (2011) illustrate tradeoffs newer or weaker groups may need to make between what we might call “purifying” and “bridging” (see earlier discussion). Indeed, whereas the employer brand managers in her study seemed mainly focused on “purity,” Edlinger (2015) also notes how they rely greatly on the support of top management to pursue their work, suggesting that “bridging” (at least to more powerful groups) was important too. Similarly, the nurse practitioners in Reay et al.’s (2006) study developed their legitimacy by fitting their roles into a complex system, while working to demonstrate their value, emphasizing bridging and incremental acceptance rather than hard and fast boundary demarcation, enabling them to position themselves in the health-care terrain.

The work of creating boundaries has also been studied at the organizational level. For example, Santos and Eisenhardt (2005) show how entrepreneurs may use “soft-power” boundary work strategies to dominate new markets. They found that technological entrepreneurs relied on three processes: claiming, demarcating, and controlling the market. Claiming the market included discursive identity-based moves aimed at equating themselves with a new market category. Demarcating included building alliances and co-opting powerful players. Controlling the market included acquisitions that eliminated competitors and blocked the entry of others. Entrepreneurs who engaged aggressively and persistently in these three

boundary moves were more successful in capturing a new market category and establishing themselves as leaders than those who did not (Santos & Eisenhardt, 2005).

Other studies reveal how social and cultural pre-occupations may intervene more strongly in organizational boundary work. Greenman (2011) shows how entrepreneurs in the cultural sector drew on their artistic occupational identity to delimit what their ventures would engage in, imprinting a particular style on their firms, something that is close to Santos and Eisenhardt’s (2005) notion of “claiming,” and that was used to display legitimacy and build commitment to the venture. Yet, such commitments could also limit the wider market penetration of these ventures.

The roles of social or noncommercial commitments in boundary work are even more evident in two other studies. In a study of a housing co-operative, Ashuri and Bar-Ilan (2016) show how “flat organizations” can work to filter potential participants by using internet-based platforms that can validate the identity, social awareness, and commitment of potential recruits. Farias’ (2017) study deals with a noncapitalist community, where members are struggling with being embedded in a capitalist system, while at the same time resisting it. The study focuses on boundary work associated with money, which members disdain but at the same time need to survive. Farias identifies the unstable and porous dynamics of boundary work in which members engage in “distancing” and “reappropriating” practices. “Distancing” includes allowing only a few members to handle money and do so outside the commune, whereas “re-appropriating” implies shifting the meaning of money as “good” or “bad” depending on how it is used (e.g., for the community or for individual benefit). These studies show the delicate boundary work that marginalized groups need to engage in to sustain their difference in the context of a dominant culture and practices.

In sum, we see here two overarching patterns in creative boundary work. On the one hand, groups aim to position themselves as valuable in a wider domain, seeking legitimacy with dominant actors or organizations. Their work to establish distinctiveness is thus almost always tempered and/or combined with strategies of bridging or connection with powerful others to help build their influence (Edlinger, 2015; Mikes, 2011; Santos & Eisenhardt, 2005). On the other hand, there are other groups and organizations whose social mission involves some degree of opposition to dominant strands of society (Ashuri & Bar-Ilan, 2016; Farias, 2017). This involves

trying to minimize or attenuate connections rather than embracing them.

Competitive Boundary Work: Assessment and Limitations

Based on our review of the competitive boundary work literature, we see that the concept has developed well beyond Gieryn's (1983) initial work that focused mainly on discursive and defensive demarcations, to include research on everyday practices and to incorporate activities of contesting and creating boundaries. Such boundary work includes not only established agents/groups but also new agents and those in weaker positions, who characteristically place more emphasis on boundary blurring to signal their proximity to rather than distance from privileged others, unless their identity is explicitly tied to opposing the mainstream.

Indeed, somewhat surprisingly, we found that competitive boundary work often involves blurring and bridging in combination with demarcation. This contrasts with Gieryn's (1983) and Abbott's (1988) original work, which conceived boundaries as mechanisms that clarify differences and establish divisions. From this original perspective, successful boundary work results in the creation of impermeable boundaries. However, several studies point to the importance of connection across boundaries. For example, Garud et al. (2014) suggested that boundary bridging was needed to restore the credibility of climate science, whereas Mikes' (2011) show how risk managers benefited from leaving porous boundaries between the risk function and strategic managers. The paradoxical tensions and tradeoffs between isolation and connection seem deeply embedded in the streams of work discussed here. Although all groups, occupations, and organizations studied seem oriented toward developing and conserving their power and legitimacy, they may draw to varying degrees on alliances and connections to achieve this.

We now raise some more critical concerns and emergent opportunities of this stream of work under two headings, one dealing with central tendencies (the nature and dynamics of competitive boundary work) and the other with variations (contingencies and consequences).

Emergent opportunities: the nature and dynamics of competitive boundary work. A first insight that deserves further development is the idea that because all boundaries exist in relation to others, defending and maintaining one boundary may also

involve or affect other boundaries. Accordingly, a fruitful direction for further research is the study of the intersectionality of different kinds of boundaries and the ripple effects among them (Arndt & Bigelow, 2005; Hobson-West, 2012; Persson, 2010; Wainwright et al., 2006).

Another direction for future work involves the consideration of competitive boundary work strategies over longer periods of time, given that most extant studies focus on positioning at particular moments. The few studies that have attempted this demonstrate how a longitudinal orientation may produce interesting and novel findings. Helfen's (2015) study of boundary work in the German employment agency industry over 55 years is a good example. The long time frame enables the co-evolution in boundary work strategies of opposing groups to be observed, and to detect shifting strategies and power relations, something that may not be visible in shorter term studies, where it often seems that boundary work largely reproduces the status quo (see also Hazgui & Gendron, 2015; Murray, 2010 for other longitudinal examples).

Most of the studies of competitive boundary work also tend to focus on moments when boundaries are made particularly salient by specific triggers such as new technologies, regulatory changes, direct challenges from other groups, or expansive aspirations. This may sometimes give the impression that competitive boundary work is mainly episodic. However, this may turn out to be an optical effect because relatively few of the studies discussed in this section examine routine boundary work in the absence of major triggers. Bechky's (2003) study of how engineers preserved their boundaries in everyday interactions being a notable exception. More studies will need to explore the ongoing competitive boundary work of incumbent groups and the nature and processes through which background concerns with boundary maintenance in the face of potential challenges are sustained and dealt with.

Finally, this body of work has given relatively limited attention to the role of materiality, with the exception of Burri's (2008) analysis of how radiologists used physical space to consolidate their jurisdiction over other imaging technologies and Bechky's (2003) study of artifacts as "representations of occupational jurisdiction." This is another area where further research would be warranted. It seems likely that material and technological artifacts as well as physical spaces (or what Garud et al. (2014) have called the "boundary infrastructure") might serve as allies or hindrances in competitive boundary work in other

settings, and that changing technologies might serve to shift these competitive dynamics. We begin to see more evidence of this in some of the studies reviewed under the heading of “collaborative boundary work.”

Emergent opportunities: contingencies and variations in competitive boundary work. To date, studies on competitive boundary work have mainly focused on *describing* discursive strategies and practices of boundary work, developing a rich set of typologies of how this is performed without explicitly addressing whether all practices are equally effective in establishing and sustaining positions of power, legitimacy, and privilege. Indeed, given the processual nature of this research, there has been relatively little overt emphasis or interest in studying the implications of variance. Nevertheless, interesting insights on this issue may be derived from existing literature in two ways: (a) by focusing on who tends to “win” and how they do so in studies of boundary contestation and (b) by paying particular attention to the few studies where comparative designs have been used.

In terms of the first, some intriguing patterns emerge from the accumulation of a variety of different case studies. For example, the boundary work strategies of high status groups tend to differ from those of lower status groups in terms of emphasis on naturalizing clear boundaries vs. attempting to blur them (Bach et al., 2012; Bucher et al., 2016; Sanders & Harrison, 2008). Boundary work also tends to favor incumbents and boundary relations generally tend to be reproduced over time in favor of dominant groups (Allen, 2000; Bucher et al., 2016; Sanders & Harrison, 2008). Yet, lower status or challenger groups may be able to “win” or at least overcome their disadvantages through boundary work strategies that involve establishing alliances and coalitions (Helfen, 2015; Huising, 2014). However, the design of most of these studies does not enable us to compare the effectiveness of these strategies with other possibilities. Only two of the studies mentioned in our review adopted such a comparative design (Mikes, 2011; Santos & Eisenhardt, 2005), both however, confirming the superiority of boundary work strategies based on alliances over those based on isolation in establishing an influential position.

Another variance-type question is whether competitive boundary work between groups might play out differently in hierarchical settings where formal authority plays a role, as compared with more loosely structured settings. For example, an organization’s top managers might act to legitimate the boundary claims of certain groups over others (e.g.,

as in the case of Edlinger’s (2015) employer brand managers or Huising’s (2014) laboratory coordinators) and regulatory authorities may intervene to impose boundary relations (e.g., as in Helfen’s (2015) study of agency work). Yet, the political dynamics by which formal authority is brought to bear on such boundary disputes is not as simple as resolution by fiat, even in these cases. This suggests that research on competitive boundary work might more systematically theorize about the roles of powerful third parties who are not directly implicated in boundary settlements but who can influence them significantly.

Overall, this suggests that there is room not only to consider boundary work practices over longer periods of time but also to develop more systematic comparative designs to assess the relative effectiveness of boundary work strategies in enhancing the positions of different groups.

COLLABORATIVE BOUNDARY WORK: WORKING AT BOUNDARIES

The second main category of studies labeled “collaborative boundary work” focuses on practices through which groups, occupations, and organizations work *at* boundaries to develop and sustain patterns of collaboration and coordination in settings where groups cannot achieve collective goals alone. The practices of collaborative boundary work emerge as people work in interoccupational teams, produce services, and construct interorganizational collaboration. Whereas, in the previous section, we saw different groups interacting in an oppositional way, here, we see how boundaries are negotiated, aligned, accommodated and downplayed to get work done (Apesoa-Varano, 2013; Barrett et al., 2012; Bechky, 2006; Quick & Feldman, 2014).

Historical Roots and Adjacent Literatures

As we indicated, the competitive boundary work literature is deeply connected to Gieryn’s (1983) original concept and, indeed, some authors appear to restrict the notion of “boundary work” to its more “competitive” form. However, others consider the term in a much broader sense that draws out its relevance to collaboration (Faraj & Yan, 2009; Lindberg et al., 2017; Meier, 2015; Quick & Feldman, 2014; Soundararajan, Khan, & Tarba, 2018; Yagi & Kleinberg, 2011; Ybema, Vroemisse, & van Marrewijk, 2012). Indeed, a focus on collaborative boundary work reminds us that although boundaries may raise

tensions, they are also often necessary to accomplish collaborative work. Working together frequently means developing mutual understandings about who will do what. Quick and Feldman (2014), in particular, pointed out that although boundaries are often considered to be “barriers,” they can also be seen as “junctures” that may be drawn on to enable rather than inhibit collaboration. At the same time, collaborative work *at* boundaries may also require accommodation in the moment to overcome problematic boundary rigidities.

The theoretical stream that has most inspired studies of collaborative boundary work is the negotiated order perspective which emphasizes that social order is performed through ongoing negotiations between the particular people involved in everyday interactions (Strauss, 1978; Strauss, Schatzman, Ehrlich, Bucher, & Sabshin, 1963). For Strauss (1978: 11), negotiation is a way of “getting things accomplished” or “making them continue to work”; it is through this negotiation work that social order, including *de facto* divisions of labor (in the form of more or less porous boundaries), emerges. Thus, negotiation in this literature does not always imply explicit one-off bargaining and involves instead emergent everyday give and take, oriented by the broader structural context of formal rules, technologies, roles, and resources, but never completely determined by them (Allen, 1997).

There are also some adjacent literatures that do not refer explicitly to “boundary work” using this specific term, but that take an interest in understanding the practices through which groups address boundaries to accomplish collaborative tasks. The boundary spanning literature, for example, focuses on the way in which people work across existing boundaries. However, the vast majority of this literature takes a functionalist rather than a practice perspective on boundaries and assumes boundaries to be fixed in advance rather than socially constructed through practice. It generally takes boundary spanning to be a black-boxed “variable” or “role” that is examined as varying in intensity and form (e.g., internal vs. external) depending on specific antecedents, and that may also be a predictor of outcomes (Aldrich & Herker, 1977; Marrone, 2010; Rosenkopf & Nerkar, 2001; Tushman, 1977). Because this broader literature generally does not focus on the actual “work” of boundary negotiation, we have not included it in this review. That said, there are a limited number of important contributions in the boundary spanning literature that do take a practice perspective and view boundaries as reconstructed through the very practices by which collaboration is

negotiated (e.g., Kaplan, Milde, & Cowan, 2017; Levina & Vaast, 2005). Because we consider these to be valuable for understanding boundary work, we have included a selected group of these articles in this review.

Similarly, another concept that has relevance to collaborative boundary work is the notion of “boundary object.” The concept was originally introduced by Star and Griesemer (1989) to describe an object or artifact that bridges different knowledge communities, enabling them to communicate meaning across boundaries even when they do not share common expertise. Carlile (2002, 2004) further developed the notion that different kinds of boundary objects or “representations” of knowledge might be required to traverse different types of knowledge boundaries. Selected contributions to this literature that are relevant to collaborative boundary work because they draw explicitly on a practice perspective and view boundaries, not as fixed, but as socially constructed through interaction, are therefore also included in this review (see Appendix 2 in the supplementary materials for a coded analysis of the articles discussed here).

Modes of Collaborative Boundary Work

Three subcategories of collaborative boundary work were identified in this review that we label *negotiating*, *embodying*, and *downplaying boundaries*. We elaborate on each of these categories in turn.

Negotiating boundaries. Among the studies on collaborative boundary work, by far, the largest group falls within this subcategory, in which studies conceptualize collaboration as made possible by processes of boundary negotiation. These studies thus often draw directly on negotiated order theory or other frameworks (e.g., actor-network theory or the notion of “trading zones”) (Galison, 1999; Latour, 2005) that imply give and take as boundaries emerge and are reformed in and through interaction, sometimes in the course of everyday work (Allen, 1997; Apesoa-Varano, 2013; Bechky, 2006; Kellogg, Orlikowski, & Yates, 2006; Liberati, 2017), and sometimes in reaction to specific triggers such as new technology or new work practices (Barrett et al., 2012; Håland, 2012; Lindberg et al., 2017; Rodriguez, 2015; Sage, Justesen, Dainty, Tryggestad, & Mouritsen, 2016).

As mentioned, these studies emphasize the productive role of socially constructed boundaries and boundary work in pragmatically agreeing on the

work that needs to be done. At the same time, studies of everyday work reveal, for instance, how formally understood roles and jurisdictional boundaries may be blurred or reinterpreted as they are enacted in practice in situations where collaborators are dependent on each other to accomplish their tasks. For example, in their studies of occupational groups in health care, Allen (1997), Apesoa-Varano (2013), and Liberati (2017) show how some professionals (nurses or health-care assistants) step in and do the work of others (doctors or nurses, respectively) when needed to ensure adequate patient care, resulting in little overt conflict or strain—and indeed, a process of ongoing boundary blurring and accommodation (Allen, 1997). Liberati (2017) further found that the extent of boundary-blurring varied depending on features of the context (patient acuity, awareness, and clinical approach), with some settings showing clearer separation of roles and others involving highly fluid blurring.

Such studies of everyday collaborative boundary work negotiated in the moment are particularly rich and revealing because they show exactly how boundary work is accomplished in specific interactions and practices in the workplace, *e.g.*, through activities or conversations among occupational groups (Allen, 1997; Apesoa-Varano, 2013; Liberati, 2017; Rodriguez, 2015). Similarly, Bechky's (2006) study of film crews shows how repeated practices of friendly thanking, admonishing, and joking serve to signal and enact role boundaries on the film set, ensuring that people understand what to do when and how. This form of emergent collaborative boundary work is grounded in and reproduces general understandings of the role structure for filmmaking that are reenacted in other projects, although never in identical ways.

Kellogg et al.'s (2006) study of boundary relations among four groups in a fast-moving internet advertising agency offers a somewhat different perspective on negotiated boundary work, manifested in what the authors call a "trading zone" (Galison, 1999). Here, groups collaborate through the public display of their work, its representation (notably in PowerPoint), and through the progressive assembly or juxtaposition and redesign of their diverse contributions into a collage that eventually becomes the product delivered to customers. Here, the dynamic role of emerging artifacts in the collaboration recalls but enriches the relatively static notion of "boundary object," because the mediating object itself is created and transformed as people intervene on it.

Whereas the studies described previously all illustrate how boundaries are negotiated to enable collaboration (rather than to promote power positions *per se*), it is nevertheless important to understand that power relations inevitably underpin the way in which ongoing negotiations play out (Strauss, 1978). For example, the flexible and non-conflictual boundary accommodations at the margins described in the health-care studies by Allen (1997), Apesoa-Varano, and Varano (2014) and Liberati (2017) occur under the radar and are never formally legitimized. Given this, Apesoa-Varano and Varano (2014) point out that they may ironically tend to reproduce rather than undermine status hierarchies, despite their crucial importance in enabling collaboration and efficient work practices. In addition, Kellogg et al. (2006) note that issues of identity, control, and accessibility sometimes hamper collaboration despite the generally effective boundary trading practices they describe. Indeed, just as competitive boundary work sometimes occurs through alliances and collaboration, collaborative boundary work is often underpinned by threads of tension and competition. This critical irony tends to be an underlying theme in much of the "negotiating boundaries" subcategory (see also Barrett et al., 2012; Håland, 2012).

A number of other studies focus not on ongoing everyday practices but on how the introduction of a technological innovation triggers a reconfiguration of the relationships among collaborating groups or domains of knowledge. This is the case of the pharmacy robot studied by Barrett et al. (2012), the electronic patient record studied by Håland (2012), and the hybrid operating room studied by Lindberg et al. (2017). These studies highlight in particular the role of materiality in reorienting boundary negotiations. For example, the robot studied by Barrett et al. (2012) required new forms of collaborative work among pharmacists, technicians, and assistants and led to a reconfiguration of boundary relations among them, a process that the authors associated with "tuning" (Pickering, 2010), where the materiality of technology is entwined with human agency in reorienting practices. Specifically, depending on the degree to which the robot maintained, upgraded, or took over the skills of occupational groups, the relations among them developed different patterns of boundary work varying from cooperation (pharmacists and technologists), through neglect (pharmacists and assistants) to strain (technologists and assistants).

Lindberg et al. (2017) similarly show how the material features of a surgical robot became entwined

with ongoing boundary work among surgical and radiology team members as they attempted to construct new modes of collaborative practice. Drawing on an actor-network theory lens, the authors show how emerging boundary relations were made visible, negotiated, and stabilized through inscriptions of the joint hybrid practice in “methods cards.” Indeed, this study reveals tellingly the importance of establishing boundaries (and in this case, of embedding them in material artifacts) to make collaboration and coordination possible.

The particular importance of establishing boundaries to enable collaboration is also revealed in Patriotta and Spedale’s (2011) contrasting study of decision-making around an ostensibly collaborative consulting project. The study shows what can happen when a minimal consensus on boundary relations fails to be negotiated or enacted at the outset. The authors argue that the team leader’s apparently inept boundary work (undermined by others) sustained ambiguous roles, and an interaction order imbued with conflict, which was only resolved when team members began working in separate silos. This study also suggests that certain key actors may play an important role in collaborative boundary work, as developed further in the next subcategory.

In sum, the literature discussed earlier suggests that boundary negotiations among different groups, both in the everyday and at more critical junctures, are a common feature of collaborative boundary work. Inherent to this collection of studies is the somewhat paradoxical understanding of boundaries as both necessary to make collaboration possible and at the same time subject to ongoing give and take in the moment to smooth over the cracks.

Embodying boundaries. The second group of studies highlights a different way of performing collaborative boundary work, namely, by focusing on people occupying specific positions and incarnating boundaries within their very activities. We have called this mode of collaborative boundary work “embodying boundaries” as these studies explore how people practice collaborative boundary work through their being and doing both within (Azambuja & Islam, 2019; Yagi & Kleinberg, 2011) and between (Ellis & Ybema, 2010; Soundararajan et al., 2018) organizations. Beyond literature using the term “boundary work” *per se*, a few studies that focus on “boundary-spanners-in-practice” also seem relevant here (Kaplan et al., 2017; Levina & Vaast, 2005).

Exemplary of this category, Azambuja and Islam’s (2019: 5) ethnographic study of an auditing firm

shows how middle managers cope with the ambivalence of everyday boundary work (defined here as “working between actors”). Middle managers at times experience emancipation, when they feel empowered by the different roles and expectations, autonomously pushing back boundaries. At other times, they experience alienation, as they feel the fatigue and isolation of satisfying different demands. The authors conclude that in managing ambivalence, middle managers regularly shift between being agential and reflexive “boundary subjects” who can act on their boundary positions, and being “boundary objects,” used by others as “interfacing and cooperation devices” (Azambuja & Islam, 2019: 2).

In a similar way, despite the different context, Yagi and Kleinberg’s (2011: 630) ethnographic study of a Japanese subsidiary in the United States focuses on the “lived experience” of organization members working at the intersection of intraorganizational, cultural, and national boundaries. The authors reveal how Japanese employees in the United States perform the role of “pipes,” functioning as conduits between Japan and the United States, implying at the same time different organizational units, cultures, nations, and languages. The article shows how “pipes” do boundary work by “absorbing” cultural differences within themselves, never explaining them to counterparts but smoothing over their relations. Other “pipes” experience identity tensions because of asymmetrical expectations from Japanese and U.S. colleagues, causing them to shift boundary positions depending on the circumstances, building on “their knowledge of multiple cultures, and their ability to flexibly utilize that knowledge” (Yagi & Kleinberg, 2011: 649).

The notion of people embodying boundaries by acting as both “boundary subjects” and “boundary objects,” is echoed in a different way in Kaplan et al.’s (2017) study of collaboration at an interdisciplinary research center on nanotechnology. Although not explicitly using the term “boundary work,” the authors draw attention to the role of material elements in the practices adopted by students, who are conceptualized as “symbionts,” embodying boundaries between disciplines through their mastery of costly instruments which disciplinary scientists are unable to use, but that allow the students to invent new interdisciplinary projects and connect others, making collaboration across political and cognitive boundaries possible.

Whereas the studies reviewed so far focus on intraorganizational boundaries, several other studies focus on how people may embody boundaries

between an organization and others, such as consumers. For example, Boon (2007) studied how hotel room attendants normally operating behind the scenes may find themselves on the front line when accidentally meeting guests in their rooms during their cleaning work. The meeting transforms the room into a boundary region where attendants come to embody the boundary between back-of-house and front-of-house, contributing to the perceived quality of service. Ellis and Ybema's (2010) study of alliance managers offers another example of embodied collaborative boundary work at the frontiers of the organization. The authors describe how managers whose role is to manage relations with other organizations (who they label "boundary bricoleurs") fluidly construct and reconstruct in their talk the boundaries of the organization, the market, relationships, and marketing management by using different "interpretive repertoires" in different situations, sometimes constructing themselves as belonging and at other times as not belonging to the organization and to the market.

All these studies suggest that collaborative boundary work is often made possible through the skillful activities of particular people managing the ambiguities of belonging to and navigating different worlds. Based on studies of information technology collaborations, Levina and Vaast (2005) observe that nomination to a formal "boundary spanner" role does not guarantee that an individual will become what they call a "boundary-spanner-in-practice." This requires establishing oneself as a legitimate participant in multiple fields, a capacity to negotiate on behalf of members, and a personal interest in constructing what the authors label, following Bourdieu (1977), a joint field of practice. Soundararajan et al.'s (2018) study of the embodied boundary work of sourcing agents in global supply chains further supports these observations.

In sum, we see how collaborative boundary work may sometimes happen through the agency of particular individuals who personally play the role of boundary subjects and/or boundary objects, sometimes absorbing within themselves the boundary tensions that might otherwise inhibit collaboration (Azambuja & Islam, 2019; Ellis & Ybema, 2010; Yagi & Kleinberg, 2011) and sometimes actively mobilizing differences to establish their own distinctive roles in new fields of collaboration (Kaplan et al., 2017; Levina & Vaast, 2005). The boundary work carried out by these individuals involves not only negotiating boundaries between groups but also coping with their own identity tensions. Embodying

boundaries places people in a position of liminality where they function as thresholds between different groups.

Downplaying boundaries. Although we noted earlier the potentially productive role of boundaries for collaboration, much of the literature still tends to see them as obdurate and problematic in many instances. Studies relating to the third mode of collaborative boundary work question that assumption, suggesting that people can simply downplay boundaries when working together. Although this group of studies is smaller (possibly because suggesting that boundaries are unproblematic does not make for interesting findings?), some research shows how existing boundaries might be purposefully ignored or "assigned to the background, 'out of sight'" (Meier, 2015: 63), and efforts may be made to downplay the divide between "us" and "them" to achieve a "we." This might happen in both intra-organizational (Majchrzak, More, & Faraj, 2012; Meier, 2015; Pouthier, 2017) and interorganizational (Quick & Feldman, 2014; Ybema et al., 2012) collaborations.

For example, Meier (2015) studied how collaboration unfolded in two hospital wards in Denmark. Whereas in the oncology ward the patients became boundary objects around whom relations among professionals from different organizational departments and medical specialties were negotiated (as in the first category of collaborative boundary work), in the emergency ward collaboration was achieved by "dissolving" existing hierarchical, organizational, and disciplinary boundaries, and redrawing them around the "we" of the personnel present on a given day, as manifested in their daily early morning huddle. Meier's (2015) comparison of the two wards highlights the role of the context and the task at hand on the mode of boundary work. In particular, she observed how the increasing pressure on time, bed capacity, and resources in the emergency ward played a significant role in the process of dissolving and redrawing boundaries.

Pouthier's (2017) study of a cross-occupation team for palliative care and oncology patients shows similar boundary dynamics to those observed by Meier (2015). In the hospital studied, palliative care team members used griping and joking in meetings as recurrent ways of interacting with each other and building feelings of belonging and solidarity. Griping and joking built on and leveraged existing boundaries of various types—professional, disciplinary, and organizational, between medical staff and family—but at the same time by inviting "commiseration and

laughing along” (Pouthier, 2017: 3), they served as identification rituals in cross-boundary teams. We see in the data that although incidents of griping and joking contributed to downplaying *internal* team boundaries, they might however reinforce *external* boundaries of the team, illustrating another way in which collaborative and competitive boundary relations come to be intertwined.

Although not framed as boundary work, DiBenigno and Kellogg’s (2014) study of collaboration between nurses and patient-care technicians in two hospital units show a similar process of dissolving boundaries as Meier (2015), but interestingly, this occurred only in the unit where crosscutting demographics helped downplay differences in occupational status, emotional rules, meanings, and expertise between nurses and patient-care technicians. In the unit where demographic differences of race, age, and immigration status aligned with occupational roles, such downplaying was not observed, suggesting again the importance of boundary intersectionality in understanding the context and nature of competitive or collaborative boundary work.

So far, all the examples of downplaying boundaries have been at the level of operational work among professionals at the front line. Majchrzak et al.’s (2012) study, by contrast, focuses on cross-functional teams mandated with novel tasks. The authors show how members do *not* spend time explaining and debating their differences, but appear to “transcend” boundaries by focusing on the task, voicing ideas, putting them together in a framework or “scaffold” that then guides their work until it is no longer needed (a kind of fluid boundary object), while, importantly, sustaining engagement by minimizing personal differences and valuing all contributions, something that might perhaps be related to Pouthier’s (2017) notion of identification rituals.

Finally, incidences of downplaying boundaries can occur in settings where, surprisingly, groups appear interested not in affirming their difference and superiority, but in claiming similarity to lower status groups: almost as a kind of reverse snobbery. This is manifested in Ybema et al.’s (2012) study of a Dutch human rights non-governmental organization (NGO) and its relation to non-Western partners. Their ethnographic study highlights how both because of egalitarian ideological concerns and for strategic partnership reasons, the NGO’s members deliberately downplayed and, to use Pouthier’s (2017) words, depolarized the differences between them and their partners. Quick and Feldman (2014) refer to a similar phenomenon in public service

organizing where managers deliberately underplay distinctions to provide room for community actors to put forward novel views.

In sum, studies that focus on downplaying boundaries tend to suggest that boundary tensions have possibly been overemphasized in previous research. Orlikowski (2002) has suggested that working across boundaries is a form of knowing in practice that organization members may enact fairly unproblematically. The conditions for such enactment seem, however, as suggested by Orlikowski (2002), to be related to various mechanisms for building a sense of shared identity despite differences, whether by organizing daily meetings (Meier, 2015), by griping and joking rituals (Pouthier, 2017), by sharing crosscutting demographic commonalities (DiBenigno & Kellogg, 2014), or by deliberately suppressing differences that discourage openness (Majchrzak et al., 2012; Quick & Feldman, 2014; Ybema et al., 2012).

Collaborative Boundary Work: Assessment and Limitations

The collaborative boundary work literature reverses the emphasis we saw in the competitive boundary work literature on constructing and defending barriers and distinctions for the purposes of promoting privileged positions, focusing rather on how boundaries may be mobilized, accommodated, or overcome through various means to enhance collaboration and get work done. At the same time, much of the literature points at the ironic nature of collaborative boundary work. Just as the competitive boundary work literature often reveals the mobilization of alliances and connections in the process of defending, contesting, and creating boundaries (Garud et al., 2014; Hazgui & Gendron, 2015; Huising, 2014; Mikes, 2011), the collaborative boundary work literature reveals how collaboration is often imbued with tensions that may be pasted over in negotiated boundary work (Apesoa-Varano & Varano, 2014; Barrett et al., 2012; Kellogg et al., 2006), absorbed by individuals in embodied boundary work (Azambuja & Islam, 2019; Levina & Vaast, 2005; Yagi & Kleinberg, 2011), and externalized or displaced in downplaying boundary work (Pouthier, 2017; Quick & Feldman, 2014). Although the emphases of the two sets of studies are different, the interpenetration of collaborative and competitive boundary relations seems endemic, and further research might more deeply explore some of its subtleties and contingencies.

Emergent opportunities: the nature and dynamics of collaborative boundary work. Building on the aforementioned, studies of collaborative boundary work sometimes point to the possibility of divergence between discourse and practice in orientations toward competition or collaboration. Members of cross-occupational teams, for instance, might emphasize differences (competition) in private talk with researchers or with members of their “own” group, whereas at the same time disregarding them in practice (collaboration) by performing or helping with each other’s work (Allen, 1997; Apesoa-Varano, 2013). This also suggests that the degree of purposefulness and reflexivity concerning boundary work may vary. In everyday practices, boundaries may be smoothly and pragmatically blurred, even though when asked, people may insist on the maintenance of clear boundaries. An explicit discussion of agency in boundary work is however lacking, with a few exceptions (e.g., Kaplan et al., 2017; Sage et al., 2016).

Some studies in this category of boundary work also point to its relationality and a few have begun to look at interactions not simply between two groups, but between multiple groups negotiating complex arrangements around boundaries. For example, the boundary work performed by Barrett et al.’s (2012) pharmacists emerges in relation to the way in which both technicians and assistants work on boundaries and it is important to understand this multiplicity (see also Kellogg et al., 2006). In taking a relational approach to boundary work, several studies also highlight the role of materiality, which plays a more or less active role in negotiating, embodying, and downplaying boundaries (Barrett et al., 2012; Kaplan et al., 2017; Kellogg et al., 2006; Levina & Vaast, 2005; Lindberg et al., 2017). These studies move beyond a conception of boundary objects as static devices for communication across preexisting boundaries to showing how materiality is directly implicated in their constitution and negotiation. As we discuss later, there are further opportunities to consider the agential properties of material objects in future work.

Emergent opportunities: contingencies and variations in collaborative boundary work. As in the case of competitive boundary work, most studies described here are based on single case studies and their purpose is to understand the micro-practices of boundary work in specific sites rather than to compare how contextual factors influence ways of performing collaborative boundary work or its effectiveness. However, there are some exceptions. For example, the studies by DiBenigno and Kellogg (2014), Liberati (2017), and Meier (2015) compare

boundary negotiations and accommodations between similar occupational groups in different settings. These studies reveal tellingly that field-level occupational boundaries are not deterministic. Local situated conditions or demographic characteristics (DiBenigno & Kellogg, 2014) may make a difference to the way in which collaborative boundary work is enacted. Moving beyond the context of occupational groups, Levina and Vaast’s (2005) comparative case study suggests that what makes *embodied* boundary work successful is the ability and willingness of boundary workers to engage with others and to contextualize boundary objects in different fields. Apart from these few exceptions, however, the literature on collaborative boundary work does not systematically address variations in the performance of boundary work based on different conditions and contingencies, suggesting multiple opportunities for future research. Moreover, there is a need for deeper analysis of the theoretical mechanisms (e.g., patterns of interdependence, and power relationships) driving some of the differences observed.

CONFIGURATIONAL BOUNDARY WORK: WORKING THROUGH BOUNDARIES

As described previously, the competitive boundary work literature focuses on how groups construct boundaries that confer legitimacy, power, and privilege on themselves, whereas the collaborative boundary work literature focuses on how groups negotiate or otherwise build connections at boundaries to get their work done. By contrast, we use the term “configurational boundary work” (or working *through* boundaries) to refer to research in which managers, institutional entrepreneurs, or leaders work to reshape the boundary landscape of others to orient emerging patterns of competition and collaboration, often combining elements of both.

Indeed, configurational boundary work has three main features. First, it involves people acting at a distance (*from outside*) directly or indirectly to influence the boundaries affecting others—the locus of agency is at a higher level (see the schematic representation in Table 1). Second, and relatedly, the focus is on how patterns of differentiation and integration among sets of people or ideas within or around organizations and fields may be manipulated to ensure that certain activities are brought together, whereas others are at least temporarily kept apart, generally for enabling effective collective action of others and at a distance. In other words, these studies involve using boundaries to shift or reconfigure

patterns of interaction. Third, the studies in this category focus somewhat less on the boundaries themselves and somewhat more on the potentialities of the “spaces” bounded by them to serve collective purposes. Boundary work thus focuses on developing and mobilizing such spaces (which like boundaries can be physical, social, temporal, or symbolic) (Hernes, 2004; Lamont & Molnár, 2002) to influence the various forms of interaction taking place within and around them.

The spaces generated through configurational boundary work may be intraorganizational (Bucher & Langley, 2016; Cross, Yan, & Louis, 2000; Kellogg, 2009; Stjerne & Svejenova, 2016), interorganizational (Mørk et al., 2012; O'Mahony & Bechky, 2008; Oldenhof, Stoopendaal, & Putters, 2016), or across fields or domains of activity (Cartel, Boxenbaum, & Aggeri, 2019; Frickel, 2004; Granqvist & Laurila, 2011; Liao, 2016; Llewellyn, 1998). We now explore in more depth the historical roots of this smaller but developing body of work and consider adjacent literatures.

Historical Roots and Adjacent Literatures

The configurational boundary work literature builds on a variety of theoretical resources including to some degree those mentioned previously (Bourdieu, 1984; Gieryn, 1983; Lamont & Molnár, 2002). However, one particular source of inspiration that was not observed for other categories is social movement theory and, in particular, two key conceptual tools derived from it. The first concept is the notion of “framing,” in which people construct discursive frames aimed at strategically influencing the way others construct social problems and potential solutions (Benford & Snow, 2000; Creed, Langstraat, & Scully, 2002). The usefulness of the framing literature for configurational boundary work lies in how framing may be used by institutional entrepreneurs to recruit others toward developing new boundaries and spaces for collective action (Frickel, 2004; Granqvist & Laurila, 2011; Howard-Grenville, Nelson, Earle, Haack, & Young, 2017).

The second concept originally from social movement theory that has been inspirational for the configurational boundary work literature is the notion of “free spaces” (Gamson, 1996; Polletta, 1999) defined as small-scale bounded social settings separated from dominant groups where interactions can take place in a different way from those in mainstream society, and where people can mobilize for action. This idea was taken up by Kellogg (2009) and used in

a study of organizational change. Drawing a parallel with the concept of “free spaces,” she developed the notion of “relational spaces” to describe social settings characterized by isolation (*i.e.*, separation from influence by opponents), interaction, and inclusion of reformers from all occupational groups affected by the change. She argued that relational spaces enabled change to take root. Although Kellogg (2009) does not use the notion of boundary work explicitly in her study, her concept of “spaces” subsequently inspired other authors who do describe this phenomenon using boundary work language (Bucher & Langley, 2016; Cartel et al., 2019; Zietsma & Lawrence, 2010). A related body of research relevant to configurational boundary work are studies that incorporate reference to “boundary organizations” (Guston, 2001) as a particular form of organized and bounded spaces for achieving new forms of interaction.

Finally, an adjacent and potentially voluminous literature relevant to this category is that focusing on organizational design because configurational boundary work is fundamentally about reshaping the spaces and boundaries for organized activity. However, the vast majority of the organizational design literature does not take a dynamic processual perspective on spaces and boundaries as subject to “work” but regards boundaries as fixed and immobile, once they have been conceived. The boundary work perspective is valuable precisely because it draws attention to the fluid and open-ended nature of organizing. Along the same lines, Oldenhof et al. (2016: 1206) emphasize the interest of shifting the focus from boundaries to boundary work as it “allows us to see how organizational classifications, *e.g.*, “top/bottom” and “internal/external,” are produced, renegotiated, and accepted as the status quo within and between organizations. However, this status quo is far from permanent.” The configurational boundary work literature reviewed in this section (see Appendix 3 in the supplementary materials) emphasizes the ongoing organizing practices that redistribute activities within and across boundaries, enacting emergent stability and change in those categories.

Modes of Configurational Boundary Work

We identified three subcategories of contributions relevant to configurational boundary work that we label *arranging boundaries*, *buffering boundaries*, and *coalescing boundaries*. Each of these subcategories implies work aimed at the reconfiguration

of interaction patterns in relation to preexisting boundaries to serve collective purposes, but to different degrees and in somewhat different ways. The relevant studies are summarized in Appendix 3 and reviewed in the following paragraph.

Arranging boundaries. The first type of boundary work within this category focuses on work performed to refocus interactions to do new things or the same things differently. We call this subcategory “arranging boundaries” to signal that agency in this case clearly comes from *outside* the boundaries and spaces being created to influence activities. Studies in this category show, for instance, how the creation of temporary boundaries and spaces within an organization or an organizational field enables acting “outside the box” because isolation from regular activities and new patterns of inclusion can allow actors to achieve things collectively that otherwise might not be possible.

One of the more influential articles discussing this type of boundary work is Zietsma and Lawrence’s (2010) field study of the “war of the woods” in British Columbia, where they describe how forestry companies and other stakeholders became engaged in boundary work in response to the growing social and environmental concerns raised by environmentalists and representatives of the local community. They show how in an attempt to resolve a long-standing and costly conflict between competing interests, one of the logging companies decided to invite external actors to collaborate in a series of experimental temporary projects, separate from their day to day activities, aimed at testing and evaluating alternative logging practices. Zietsma and Lawrence (2010) coin the term “experimental spaces” to describe these temporary projects, which involved activities such as experimenting with selective harvesting practices and secretly negotiating with counterparts. The creation of a bounded experimental space shielded these activities from criticism and sanctions, motivated actors to participate, and gave them the freedom to jointly test and elaborate innovative solutions, which later played an important role in the transformation of forest harvesting practices in the broader organizational field. Similarly, Cartel et al. (2019) illustrate how the creation of social and symbolic boundaries around a temporary space for innovative experimentation in the carbon market facilitated a climate of trust among field actors, allowing them to try new things together without irrevocably committing to those actions outside this temporary, experimental space, a necessary condition to make experimentation possible.

Although the aforementioned studies are located at the institutional level, Bucher and Langley (2016) used similar notions to study two cases of change in patient process routines in hospitals. They showed how boundary work was performed by managers to create different kinds of temporary spaces for interaction. By determining who should be involved, for how long, where, and in what form, they established a set of boundaries that allowed for the creation of alternating *reflective* and *experimental* spaces, where organizational members could distance themselves from everyday practices and develop new ideas (in reflective spaces) and reconnect these to everyday work (in experimental spaces). These alternating types of spaces were continually redeveloped through ongoing boundary work, often from within prior spaces, and they played a significant role in enabling change by overcoming established modes of interaction that previously inhibited it. The practice of rearranging spaces to change forms of interaction is also a theme in Oldenhof et al.’s (2016) study of a health-care reform program in the Netherlands, where the boundary work of middle managers catalyzed interorganizational change.

All these studies reveal the potentially transformative role of configurational boundary work in overcoming what Zietsma and Lawrence (2010) call “the paradox of embedded agency” and what Bucher and Langley label the “puzzle of recursiveness” (Bucher & Langley, 2016). This paradox concerns the question of how people embedded in taken-for-granted patterns of practice and power relationships (at the institutional or organizational level, respectively) can transform those practices, even as they are inevitably influenced by them. Flexibly rearranging the physical, social, temporal, and symbolic boundaries that isolate people and ideas from one another can contribute to enabling the re-orientation of practices. As Stjerne and Svejnova (2016) suggest, this kind of configurational boundary work may be particularly prevalent and crucial in project-based organizations, where boundaries (between projects and the host organization, and between temporal time periods) are always in flux and there is a need to ensure both the autonomy and effectiveness of project work as well as the connection to the larger organization.

Buffering boundaries. The second subcategory of configurational boundary work refers to boundary shaping performed to accommodate collaboration among organizations from incompatible social worlds or/and actors with competing interests. This is performed by creating dedicated spaces to mediate such

relations, a practice that we label “buffering boundaries.” Such spaces that Guston (1999) described as *boundary organizations* are designed to continually produce boundary work that enables collective action, while at the same time, allowing participants to remain behind their preferred established boundaries, and thus deliberately sustaining *both* competitive *and* collaborative boundary relations (Guston, 2001; Mørk et al., 2012; O’Mahony & Bechky, 2008).

The notion of boundary organization was first used by Guston (1999) in his study of field actor’s involvement in boundary work in the implementation of a knowledge transfer policy in the intramural laboratories of the National Institutes of Health in the United States. The study focused on the role and activities of the Office of Technology Transfer (OTT), an organization located between policy-makers and scientists responsible for the evaluation. The authors describe the OTT as a “Janus faced” boundary organization simultaneously directed toward and involved with both scientists and policy-makers. The boundary organization enacted a dual, combined social order, enabling policy-makers and scientists to bridge social worlds, while giving both an opportunity to construct their boundaries in ways favorable to their own perspectives.

Similarly, O’Mahony and Bechky (2008) studied projects in an open-source software community where boundary work was initiated to establish collaborative relations between organizations with conflicting values and interests, while enabling the maintenance of these competing interests. They show how members of open-source communities and employees of private companies interacted collaboratively within the open-source community’s Web page, forums, and email lists through participation in a boundary organization that ensures common governance, voice, and representation. However, within their group, they also competed through actions safeguarding membership, ownership, and control of the production of software code that took place within the boundary organization. We see similar phenomena occurring in Caine’s (2016) study of boundary relations between government and first nation groups mediated by an NGO that manages bounded collaborative relations despite divergent interests as well as Perkmann and Schildt (2015) study of the “Structural Genomics Consortium,” a boundary organization mediating between universities and the pharmaceutical industry.

A somewhat different example is provided by Mørk et al. (2012), who examine the boundary work performed by a group of physicians to establish a boundary organization, in the form of a new

independent R&D department at a Norwegian hospital. This department would accommodate innovative procedures, using cutting edge technology and involving experts from a variety of medical communities as well as engineers and physicists. However, rather than focusing on the boundary work performed by and within the boundary organization once created, Mørk et al. (2012) center their attention on the boundary work (or what the authors call “boundary organizing”), involved in creating this boundary organization as the means to transform scientific breakthroughs into functional medical practices. This involved handling multiple boundaries, facilitating mutual benefit (sometimes through shifting boundaries between disciplines), and mutual adaptation of practices.

In sum, a particular form of configurational boundary work that maintains competitive and collaborative forces in paradoxical equilibrium involves buffering boundaries through the creation of boundary organizations. This is an organizational form that seems likely to create particular challenges for its members who in turn need to manage the collaborative/competitive tension, maintaining trust on both sides (O’Mahony & Bechky, 2008; Perkmann & Schildt, 2015).

Coalescing boundaries. In contrast to the two previous types of configurational boundary work which involve using boundaries and spaces to orient existing activities, we also identified a third subset of studies in which established boundaries are reshaped by coalescing existing activities into newly redefined domains or spaces. Studies in this subcategory that we call “coalescing boundaries” show how elements from existing domains can be integrated or fused into new or expanded ones (Frickel, 2004; Granqvist & Laurila, 2011; Howard-Grenville et al., 2017; Suddaby, Saxton, & Gunz, 2015), often combining elements of both collaborative and competitive processes.

A more top-down approach to this type of boundary work is illustrated by Llewellyn’s (1998) study of public reform of social services in Scotland aimed at increasing cost efficiency. Llewellyn shows how formerly rigid symbolic boundaries between the domains of “social service work” and “cost control” were gradually broken down, not without resistance, by rhetorical moves, the creation of new positions, shifts in budgetary responsibility, and other means of ensuring the accommodation of cost awareness in everyday social work, coalescing the boundaries between previously distinct domains.

An apparently more democratic and harmonious example of coalescing boundaries is represented by Frickel’s (2004) historical study of building the

“interdiscipline” of genetic toxicology by inventing and renegotiating porous disciplinary, organizational, and epistemological boundaries that encouraged multidisciplinary interaction. The study draws on documents and the concept of framing from social movement theory (Benford & Snow, 2000) to show how scientists connected their interdisciplinary project to diverse audiences using strategies of “frame amplification” (clarifying a problematic issue), “frame extension” (broadening boundaries to encompass diverse interests), and “frame translation” (showing how the proposed solution might resolve others’ concerns). These framing processes established the credibility of genetic toxicology knowledge and enabled the formation of new networks, organizations, and practices that came to define the emerging field. Frickel (2004) argues that as a consequence, the interdiscipline maintained itself through interaction with other fields, demanding boundaries that were intentionally permeable. Such boundary work thus interestingly emphasizes the strength of “weak” boundaries, something also revealed in a study of framing processes in the development of green chemistry (Howard-Grenville et al., 2017), where tensions between proponents of rigid definitions and proponents of versatility hold the concept together in what the authors call a “stable condition of pluralism.”

The dynamics of framing and boundary work is also shown in Granqvist and Laurila’s (2011) study of how U.S. nanotechnology coalesced as a scientific field as an interplay between fiction, policy, and science, which involved different kinds of framing processes and boundary work. The authors describe how futurists and fiction movements influenced science and shaped the boundaries and substance of the emerging field. However, within the established scientific field, the co-optation of the nonscientific rhetoric gave rise to perception of a “compromised” field which jeopardized its internal legitimacy. The article shows the delicate and shifting nature of boundary work in a situation where links to wider culture initially support a group’s development, but might ultimately damage its status in relation to other reference groups. Again, we see the porous nature of the emerging boundaries as they coalesce. Another more recent study of the same nanotechnology field (Grodal, 2018) reveals the recursive relationship between symbolic (discursive) boundary work and social membership. This study explains the dynamic nature of field boundaries in nanotechnology in terms of tensions between the identity and resource motives of different communities. Grodal (2018) suggests that the futurist community

first enlarged symbolic definitions of nanotechnology to attract resources and members, but then found itself competing for those resources with groups whose identities were not fully aligned with their own (scientists), resulting in subsequent boundary work to narrow symbolic and social boundaries.

Similar forms of uneasy coalescence are evident in Liao’s (2016) study of boundary work occurring around the definition of augmented reality (AR), an initiative aimed at constructing a new community and research field. Definitions of AR were here construed as attempts to expand the authority of initiating participants, to stake a claim to a new space, and to serve as a form of membership negotiation. However, disputes arose in applying definitions, and different interpretations were proffered by new stakeholders entering the field. For example, business interests attempted to redefine and diminish the importance of academic definitions. Definitions and the symbolic and social boundaries that go along with them are shown to be temporarily settled and then unsettled as they move from one “field configuring event” (*i.e.*, a meeting of participants discussing the shaping of the field) (Lampel & Meyer, 2008) to another. The porosity and ambiguity of boundaries of this coalescing but continuously reconfiguring field are quite clear (Frickel, 2004). What is not clear is whether or not this is a strength. Certainly, boundary work is clearly endemic in communities such as these.

In summary, this group of studies emphasizes how configurational boundary work can be used to bring together groups with potentially divergent and competing perspectives and goals, by coalescing established boundary definitions and constructing new domains. However, holding together groups with different and potentially competing perspectives may require the maintenance of porous and ambiguous boundary constructions that can sometimes be fragile and temporary (Frickel, 2004; Granqvist & Laurila, 2011; Grodal, 2018; Howard-Grenville et al., 2017).

Configurational Boundary Work: Assessment and Limitations

Within this category of configurational boundary work, boundaries are typically seen as a functional tool for organizing human activities, combining in different ways the benefits of differentiation (*e.g.*, by limiting interference from forces for disruption or competition), with the benefits of integration (*e.g.*, by creating protected space for experimentation, socialization, and

collaboration). Indeed, the studies in this category illustrate the affinity of the notion of boundary work with a processual view of organizational design (Weick, 1979), emphasizing the fluidity and open-endedness of organizing, manifested in forms such as temporary experimental spaces, boundary organizations, and porous coalescing and reconfiguring fields. At the same time, these studies show how boundaries can be a managerial resource to achieve other objectives. Boundaries are not only simply a source of legitimacy and self-protection (as in competitive boundary work) or a juncture to be aligned (as in collaborative boundary work) but also a tool to allow other things to happen because of their capacity to separate or bring together particular people, objects, and ideas into new configurations. We see that boundaries may be “used” by agents such as managers and institutional entrepreneurs to orient the activities of others.

This group of studies is also particularly intriguing because it integrates the forces driving the other two. Specifically, ongoing tension between competition and collaboration is manifested in different ways for each of these forms of boundary work. In the first subcategory, arranging boundaries in certain ways results in shifts in the locus of competition and collaboration which can renew potential for collective action (Bucher et al., 2016; Cartel et al., 2019; Oldenhof et al., 2016; Zietsma & Lawrence, 2010). In the second subcategory, competition and collaboration are buffered, or kept apart through the work of boundary organizing (Mørk et al., 2012; O'Mahony & Bechky, 2008). In the third subcategory, the work involved in coalescing boundaries embeds competitive and collaborative boundary moves in an ongoing dance, in which porous boundaries are preferred and rigidity avoided to sustain an acceptable degree of coalescence (Frickel, 2004; Granqvist & Laurila, 2011; Grodal, 2018; Howard-Grenville et al., 2017; Liao, 2016). This body of work thus reveals the richness of interaction between competitive (exclusive) and collaborative (inclusive) processes circulating around boundaries and inherent to boundary work, something that we noted with the other categories too, but to a lesser degree.

Emerging opportunities: the nature and dynamics of configurational boundary work. Because this body of research often involves multiple stakeholders and considers processes evolving over long periods of time, it begins to widen the scope of the boundary work perspective to understanding large-scale processes at broader organizational and institutional levels. Yet, the fine-grained everyday boundary talk-in-interaction that we sometimes saw in

the other two categories is less visible, making the boundary work concept more abstract, coarse-grained, and apparently black-boxed. The configurational boundary work literature could be enriched through a more fine-grained approach to the actual work itself.

A second intriguing and distinctive feature of some of the configurational boundary work studies is the emphasis on temporary or “temporal boundaries” (Bucher & Langley, 2016; Cartel et al., 2019; Zietsma & Lawrence, 2010), and the particular role they play in enabling new activities to occur, which are then reintegrated into unbounded temporal spaces. This suggests that the notion of temporal boundary work might offer rich opportunities for further study, focusing, for instance, on how the manipulation of time, in terms of deadlines, schedules, and windows of opportunity, could play a significant role in the life of groups, occupations, and organizations.

Emergent opportunities: contingencies and variations in configurational boundary work. Comparative studies are even less common for the configurational boundary work literature than for the other two types. When multiple case studies have been included in research designs (Bucher & Langley, 2016; Caine, 2016; O'Mahony & Bechky, 2008; Stjerne & Svejenova, 2016), the emphasis has mainly been on the literal replication of common insights, rather than on the explanation of differences. Nevertheless, Bucher and Langley (2016) compared two different examples of routine change and observed that blockages occurred when managers failed to alternate between the creation of different types of spaces (experimental and reflective), each playing a different role in moving the change process forward. Kellogg (2009) also compared two change processes and showed how change was more likely for cases where the boundaries around relational spaces were less porous, providing room for change agents to construct mutual support without contamination from defenders of the status quo. Clearly, there are opportunities to further develop knowledge about the contingencies and variations of configurational boundary work.

DISCUSSION AND DIRECTIONS FOR FUTURE RESEARCH

In this article, we critically examined the literature on boundary work in organization and management studies considered broadly. We found that authors discuss three conceptually distinct but interrelated forms of boundary work that we label *competitive*

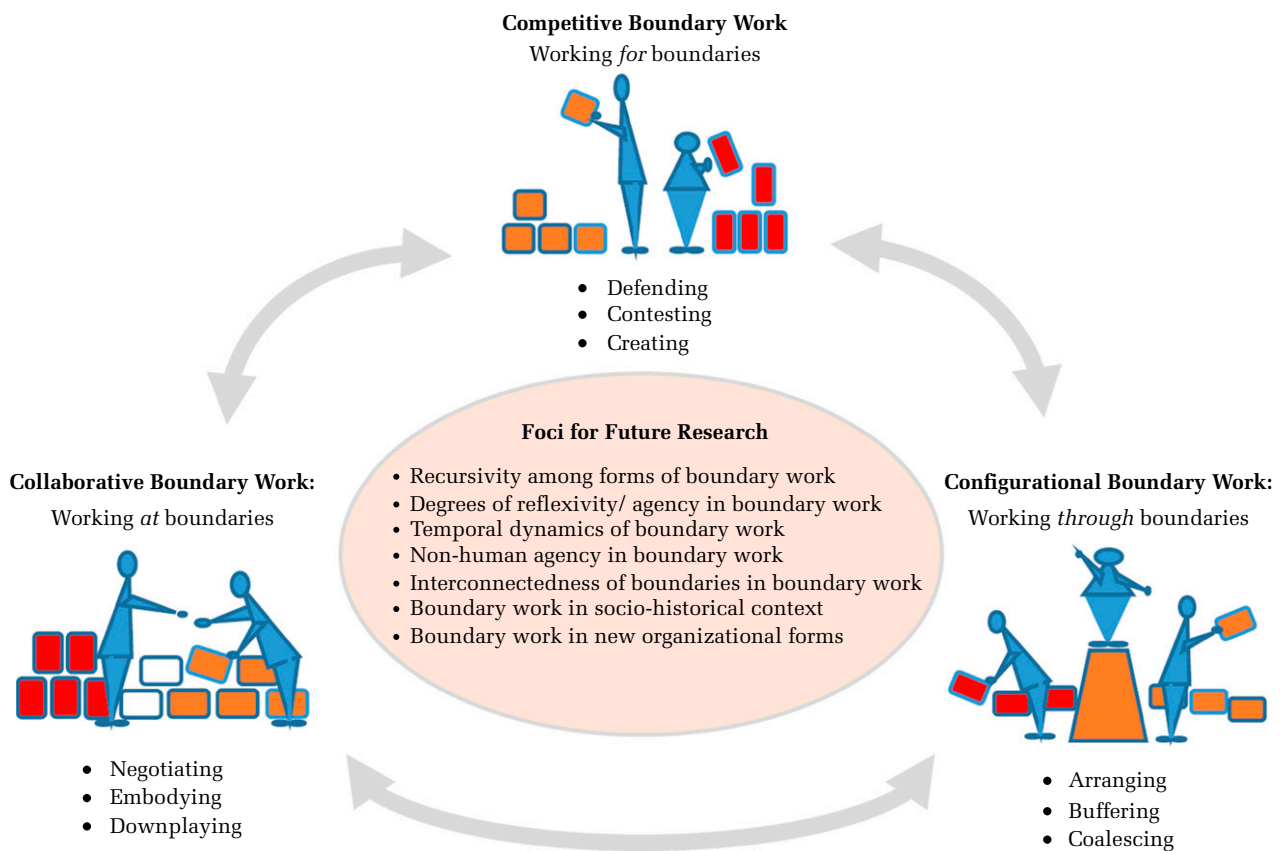
boundary work, *collaborative* boundary work, and *configurational* boundary work. Studies of competitive boundary work foreground how agents construct, defend, or extend boundaries to distinguish themselves from others (Allen, 2000; Arndt & Bigelow, 2005; Bucher et al., 2016; Burri, 2008; Garud et al., 2014; Gieryn, 1983; Santos & Eisenhardt, 2005). They do so to maximize their social position and status, obtain resources, and reproduce or contest existing power relationships. Studies of collaborative boundary work focus on how agents negotiate, blur, or realign boundaries in interaction to pursue collaborative aims and get their everyday work done (Apesoa-Varano, 2013; Azambuja & Islam, 2019; Barrett et al., 2012; Lindberg et al., 2017; Pouthier, 2017; Yagi & Kleinberg, 2011). Finally, studies of configurational boundary work consider how boundaries may be deliberately manipulated to ensure that certain activities are brought together within bounded spaces, whereas others are at least temporarily kept apart, for the purpose of enabling effective collective action (Bucher & Langley, 2016;

Granqvist & Laurila, 2011; Guston, 2001; O'Mahony & Bechky, 2008; Zietsma & Lawrence, 2010). In the rest of this concluding section, we discuss some of the more general features of this body of work building on the insights and limitations we identified earlier, and we suggest a number of important opportunities for future research. Figure 1 presents our portrait of the boundary work literature and identifies the main foci for future research that we explore in more detail in this section.

Boundary Work as Multifaceted and Recursive

A first observation which stems from our review is that the three types of boundary work are intricately intertwined in practice. It appears that even the most divisive attempts to create boundaries have to contend with the fact that interdependence is a reality in organizational and social life. Negotiation and mutual accommodation between groups, occupations, and professions are therefore inescapable to get things done. Boundary work is thus almost never

FIGURE 1
Synthesis and Foci for Future Research



wholly competitive or collaborative. Although in any particular study, one type of boundary work may be foregrounded, different and seemingly opposite types of work, such as demarcating and blurring boundaries, often coexist (Allen, 2000; Azambuja & Islam, 2019; Ellis & Ybema, 2010; Farias, 2017; Hazgui & Gendron, 2015; Meier, 2015; Mikes, 2011; Pouthier, 2017).

One type of work can also influence or generate another. For example, when actors carry out configurational boundary work, they generate distinctions that can become imbued with value, status, and power for certain groups, inciting them to engage in competitive boundary work (Granqvist & Laurila, 2011; Grodal, 2018; Liao, 2016). At the same time, the creation and reification of boundaries through competitive boundary work may generate situations demanding collaborative boundary work (Mikes, 2011; Quick & Feldman, 2014; Zietsma & Lawrence, 2010), which may in turn shift negotiated orders and lead to calls for further configurational boundary work. The interaction between the three types of work is captured in Figure 1.

Our review also suggests that once we get close to the coalface of organizational life, “boundaries” start to look much more porous and fluid than they appeared from far away. Boundary work in turn emerges as inherently tactical and situated. Why and how actors engage in particular forms of boundary work and how agents mutually construct a “negotiated order” (Strauss, 1978) is strongly influenced by local conditions as some studies have explicitly revealed (Liberati, 2017; Meier, 2015). How agents enact demarcations and distinctions needs to be studied *in situ* as the success of boundary work is often reliant on micro-strategies and subtle nuances, as illustrated by some of the ethnographic studies in our review (Apesoa-Varano, 2013; Bechky, 2003, 2006; Pouthier, 2017; Rodriquez, 2015; see also Corporaal, 2018). We think that more fine-grained work is needed to authentically capture the sayings and doings that people engage in to influence demarcations shaping their social context. Moreover, such fine-grained studies of boundary work would benefit from novel methodologies such as video analysis, shadowing, and multimodal approaches. Opportunities are also offered by emerging technologies such as tracking devices and proximity sensors that may open up new vistas on the phenomenon by offering larger sets of interactional data that can complement in-depth observation.

At the same time, we also need more studies with an explicitly comparative focus that can further illuminate the contingencies that may influence the enactment of boundary work in similar settings and

help us understand when and where it may be more consequential in positioning actors favorably against their competitors (competitive boundary work), in enabling collaboration (collaborative boundary work), and/or in orienting patterns of collective action from the outside (configurational boundary work). A literature synthesis such as ours can identify commonalities and differences across different studies, but there would be value in developing more research designs that are explicitly oriented toward replication and comparison, such as those of Barrett et al. (2012), Bucher and Langley (2016), Liberati (2017), Mikes (2011), O’Mahony and Bechky (2008), and Santos and Eisenhardt (2005).

Boundary Work, Reflexivity, and Agency

Future work is also required to rethink the role of agency in boundary work by examining its more or less reflexive character. Our review suggests that the degree of purposefulness or reflexivity may vary considerably. For example, there is a clear difference between the highly intentional and planned activities of the physician entrepreneurs in Mørk et al.’s (2012) study of the creation of a boundary organization and the everyday pre-reflexive boundary interactions nurses and doctors undertake in their daily work (Allen, 1997; Apesoa-Varano & Varano, 2014; Sanders & Harrison, 2008).

Although many of the articles we reviewed (especially in the competitive boundary work section) treat the actors involved in boundary work essentially as members of “in-groups,” intent on supporting parochial interests,⁶ others suggest that the reality of living at the boundary is rather different. In

⁶ The notion of in-group vs. out-group categorization is a phenomenon widely studied by scholars of social identity theory (Tajfel & Turner, 1986). The theory suggests that when individuals are grouped together (even in random situations), they tend to develop rather quickly group identities. This involves both the categorization of one’s “in-group” with regard to an “out-group” and the development of forms of positive bias (both discursive and practical) toward in-group members vis-à-vis the out-group. This approach has a strong individual orientation grounded in psychological research traditions that are different from that of most boundary work scholars, who eschew the notion of cognition as separate from action in consonance with the practice-based view. Nevertheless, the linkage with social identity theory and in-group/out-group dynamics might offer another promising direction for future research. We thank one of our editors for pointing us toward this idea.

many circumstances, boundary work is a thoroughly mundane performance, carried out in the background and pre-reflexively without being foregrounded and thematized in terms of long-term calculation (Azambuja & Islam, 2019; Levina & Vaast, 2005; Yagi & Kleinberg, 2011). Only occasionally may people begin to work together strategically, collectively, and deliberately, perhaps with the aim of shifting boundaries in their favor (Allen, 2000; Helfen, 2015), perhaps to protect threatened turf (Ezzamel & Burns, 2005; Garud et al., 2014; Helfen, 2015; Suddaby & Greenwood, 2005), perhaps to develop new ways to collaborate (Barrett et al., 2012; Lindberg et al., 2017), or with a view to reshaping a field (Frickel, 2004; Liao, 2016; Mørk et al., 2012). One question raised by our review is, therefore, whether the prevalence of studies focusing on the latter is a reflection of what happens most in the field or simply due to researchers' propensity to focus more on situations characterized by some kind of drama (Franco, Malhotra, & Simonovits, 2014).

Our view, however, is that identifying boundary work either with routine activities or with exceptional events when conflict and contradictions come to a head would be a mistake. These two forms of boundary work constitute in fact different facets of the same phenomenon. Boundaries are enacted through both types of work even though the literature we reviewed focuses either on one or the other, but almost never both. To resolve this apparent dichotomy, the study of boundary work needs to embrace relational and processual views of agency that do not contrast mundane routinized activity and purposefulness or reflexivity—as is common in the individualist and calculative conceptions of agency that prevail in management studies. Emirbayer and Mische (1998), for instance, suggest that human agency as practical and situated engagement always encompasses elements of repetition, projection toward the future, and practical evaluation of possible immediate and future consequences. Boundary work is thus always agential, projective, and purposeful even when it operates in the background and is not the focal object of individual and collective attention (see also Cardinale, 2018). Agency and reflexivity are ubiquitous in boundary work although they assume different forms and are played out differently. The dynamic interplay among these dimensions and the temporal dynamic between the more or less reflexive character of this work constitutes an empirical question. Accordingly, more research is needed to foreground the recursive interaction between more strategic and collective boundary work

initiatives and the everyday tactical performative boundary work carried out in micro-interactions.

Boundary Work Beyond Human Agents

Building on the aforementioned, a further way to enrich the boundary work concept would be to question the current assumption that boundary work is attributable mostly if not exclusively to human agents. This of course does not mean that we ascribe human-like agency and intentionality to machine and objects. Instead, it suggests the need to decenter our view of agency in boundary work. A number of authors such as Pickering (2010), Barad (2003), Latour (2005), and Orlikowski and Scott (2008) have convincingly argued that agency, understood as the capacity to act, emerges at the encounter between humans, artifacts, texts, and discourses, and does not preexist such encounters. For example, the capacity of a modern doctor to cure a patient is not a stable quality or capacity that the actor holds. The healing agency of modern clinicians emerges instead from the encounter and “intra-action” (Barad, 2003) between educated human bodies and minds (not only the doctors but also patients and other health professionals), medical technologies and medicines, clinical spaces, the discourse of modern medicine, the local health policy, and the state of the local economy (among many other things). Although we traditionally attribute head status to the human agent and complementary status to the rest (Taylor, Groleau, Heaton, & Van Every, 2001), it is difficult to ignore that the work of healing is distributed across all these different constituents.

We suggest that the same can be applied to the study of boundary work and we see the beginnings of some more subtle thinking about materiality in a few of the studies reviewed here. For example, Barrett et al. (2012) and Lindberg et al. (2017) show new technologies to be important agents in orienting the reconstitution of boundaries among health-care occupational groups. Kaplan et al. (2017) use the term “symbiont” to capture the hybrid socio-material agency exerted by science students with deep knowledge of specific scientific instruments in enabling interdisciplinary collaboration in nanotechnology.

Abandoning a human-only perspective in boundary work allows us, for instance, to acknowledge that the “social” and “symbolic” boundaries that we encounter in our daily lives are increasingly performed materially and digitally. Social, racial, and professional

boundaries are increasingly inscribed in decision-making algorithms such as those that decide not only whether we are worthy of credit but also whether we are potential criminals (Lum & Isaac, 2016). For example, the professional boundaries between doctors, nurses, and other health-care professionals discussed by Allen (1997), Bach et al. (2012), and DiBenigno and Kellogg (2014) are these days often at least partly digitally mediated, as in the case of differential access to patient data through electronic patient records (Goorman & Berg, 2000). Once we reconceptualize boundaries in material and digital ways, we can start asking questions that are notably rare in the literature we surveyed (despite the exceptions mentioned earlier). What does boundary work look like when boundaries become materially and digitally mediated? How can boundaries be negotiated or contested when they are inscribed in algorithms?

New questions are not, however, only limited to the role of new technologies. For example, once we relax the assumption that boundaries are made by people, we can start asking how boundaries can be generated by the different temporalities embedded in practices. Consider, for example, the distinctions between those who have a permanent job and those who live precariously; or those who work 9–5 or those who work at night. What sort of boundary work is triggered by these distinctions? Embracing a more sociomaterial and open view of boundaries conceived as junctures where practices meet and where certain differences become salient makes us sensitive to new types of boundaries and boundary work that may constitute promising topics for future research.

Boundary Work in Context

Many of the articles examined in our review analyze work at a single boundary at a time, *e.g.*, the boundary between nurses and doctors (Allen, 1997), accountants and buyers/merchandisers (Ezzamel & Burns, 2005), and scientists and anti-scientists (Garud et al., 2014). Yet, renegotiating the boundaries between two occupational communities or roles may in fact create tensions with other groups and occupations. This in turn may facilitate but also hamper the original effort. We do see certain studies beginning to consider multiple boundaries at a time (Barrett et al., 2012; Bechky, 2003; Rodriguez, 2015; Zietsma & Lawrence, 2010), but future work could develop this further to consider nexuses and ecologies of boundaries *in situ*, studying how changes on one boundary reverberate elsewhere. In addition,

boundary work studies could also devote more attention to the dynamic linkages between different types of boundaries (*e.g.*, symbolic and social) (Grodal, 2018). While analyzing multiple types of boundaries among multiple stakeholder groups can be difficult in empirical research, neglecting these distinctions is likely to miss the complexity of social life in and around organizations.

Conceiving boundaries as mutually connected goes hand in hand with increasing attention to the social and historical conditions within which boundary work is performed. According to our review, very few studies consider boundary work within the wider historical context and broader societal dynamics within which such work is conducted on the ground. This applies even for most of the recent studies that adopt an intersectionality sensitivity and consider the boundary work required to accommodate at the same time multiple distinctions, *e.g.*, gender and occupation (Persson, 2010), or gender, occupation, and ethnicity (DiBenigno & Kellogg, 2014). Consequently, even the most sophisticated studies of boundary work rarely establish connections between local micro-level instances of boundary work and broader societal phenomena. Some studies look at institutional level boundary work (Hazgui & Gendron, 2015; Helfen, 2015; Llewellyn, 1998; Suddaby & Greenwood, 2005; Zietsma & Lawrence, 2010), whereas others focus on situated boundary work in the workplace. However, the two domains of study (“levels”) tend to be treated separately and we know little about the actual connections and mutual influences between the two.

Hence, we suggest that future work will be necessary to explore how the local “negotiated order” (Strauss, 1978) is a reflection of wider societal transformations and to what extent local boundary work (especially of the competitive and collaborative variety) constitutes an instance of more generalized forms of political negotiations and identity politics. This would require, for example, conducting multilevel studies that ask how a decision made at the government or legislative level, [*e.g.*, the negotiation of professional boundaries between accountants and lawyers, discussed by Suddaby and Greenwood (2005)] is translated in practice and what sort of local boundary work is necessary to make this happen on the ground. Conversely, studies could also investigate how the results of microstrategies pursued at the local level are (occasionally) scaled up, spread, and become mainstreamed. A famous historical example here is Rosa Parks’ act of boundary contestation on a bus in Montgomery, Alabama (1955), a piece of boundary work which was scaled

up and triggered large-scale transformations. The challenge here is to pursue these types of studies holding on to a processual and practice-based sensitivity. This could be achieved by tapping into recent developments on multisite ethnography and using the methodological tool kit developed by studies of nested relationality (Jarzabkowski, Bednarek, & Spee, 2015). Another clear opportunity for future research is studying boundary work over longer time periods to capture these dynamics. Our review found several studies that have begun to do this challenging work (Helfen, 2015; Murray, 2010; Zietsma & Lawrence, 2010), but more would be needed to embed local and specific episodes of boundary work within the broader societal and historical context.

Conducting studies that connect local boundary work to broader boundary politics could also pave the way to address the role of affect and emotions in these matters. The issue is significantly under-recognized in the current literature despite evidence that boundary work is often emotionally charged. Many of the studies we examined here hint at the fact that boundaries are often affectively invested and that boundary work stirs emotions. This comes through most obviously in studies of embodied boundary work (Azambuja & Islam, 2019; Yagi & Kleinberg, 2011), without necessarily being specifically theorized. This applies even in studies that examine issues where affect is likely to play an important role, like in Farias' (2017) study of a noncapitalist community where members are struggling with being embedded in a capitalist system while concurrently resisting it. Consequently, our view of boundary work is significantly overintellectualized and we know very little about the emotional dimension of boundary work, how affect is mobilized, and how it is put to work for, at and through boundaries.

Boundary Work in Practice

The study of boundary work is important not only for theoretical but also for practical reasons. The pragmatic intent behind the study of boundaries and boundary work is to shed light on the phenomenon to support those who operate in multiboundary conditions and those who design and manage boundary activities. The overarching aim was to provide conceptual tools and ideas that can enhance collaboration and integration, support the reconfiguration of existing distinctions, and the establishment/consolidation of some of them as required by local conditions.

In more concrete terms, the current literature already offers some useful practical ideas. From the competitive boundary work literature, we would suggest that managers need to understand the highly symbolic importance of boundaries for occupations and other social groups. The capacity to differentiate ones' group from others' in some valued and recognized way seems to be critically important. The incapacity to achieve some kind of positive distinction is likely to leave groups demoralized with potentially negative consequences for work performance.

From the collaborative boundary work literature, we note the paradoxical role of boundaries in enabling coordination on the one hand, but on the other hand, doing so most effectively when there is flexibility and boundary blurring in the moment to get the work done and when groups are able to find some commonalities based, for example, on a shared organizational-level identity despite their differences (Orlikowski, 2002). Managers need to understand moreover that although boundary distinctions, especially among occupational groups, are contextualized *in situ* in every workplace, they are often ultimately derived from institutionalized distinctions at the field level that may be instilled during professional training, embedded in broader power dynamics, and therefore, relatively resistant to manipulation.

Nonetheless, the configurational boundary work literature also draws attention to the potentially powerful role of managerial or entrepreneurial agency in configuring boundaries for other groups to pursue collective goals. Configurational boundary work can create settings where groups are isolated from others temporarily to seed the possibility of change. Boundaries can also join as well as divide, and if used selectively, can contribute to organizational change and effectiveness. Yet, it is important to understand that boundary work of all kinds is indeed "work" that is never finally settled. Even when new structures and spaces are created, implemented, and embedded in organizational charts, the boundaries intended to reconfigure patterns of differentiation and integration in certain ways will be acted on by other agents in their competitive boundary work to establish or affirm status and legitimacy, and through collaborative boundary work to coordinate, collaborate, and get work done, despite distinctions.

Indeed, as revealed throughout this review, the notion of boundary work contributes in a broader sense to moving away from a notion of organizations as inert containers for activity toward a more

processual understanding related to Weick's (1979) notion of "organizing." Paraphrasing Fournier (2000), to the extent that boundaries in organizations imply "divisions of labor" that serve to channel activity, boundary work can be seen as the "labor of division." Boundary work is thus a central element of organizing and crucially important to understanding how organization emerges and unfolds over time.

Building on this, the notion of "boundary work" offers in fact a particularly interesting concept for the analysis of alternative organizational forms including many that have been enabled by new technologies and that have been called "boundaryless." Although most studies of boundary work to date have focused on settings traversed by preexisting boundaries that people attempt to influence, more interesting perhaps are those settings where boundaries are initially not evident—where things do not appear to fit together. Studies of boundaryless organizations and other new forms of the so-called boundaryless organizing, such as co-working spaces, supply partner colocation and technology listening posts (Gassmann & Enkel, 2004) could help future managers to refine their skills when conducting configurational boundary work. They could also help to distinguish more finely between the rhetoric and reality of boundaryless organizing.

In sum, the notion of boundary work, with its focus on the continuous and open-ended activities of "doing" boundaries and organizing, is well adapted to provide important insights for managing and organizing in a world where organizational life is increasingly characterized by highly distributed, digitally embedded and fast shifting organizational configurations and settings, in contrast to views on organizations as codified and stable entities.

CONCLUSION

The purpose of this review was to (1) clarify the distinctive contribution of the notion of boundary work to organization theory; (2) to distinguish different types of boundary work, their triggers, and consequences; and (3) to build on and reach beyond existing scholarship to suggest directions for future research. In terms of the first, we argue, based on this review, that the notion of boundary work offers significant potential for integrating agency, power dynamics, materiality, and temporality into the study of organizing. Traditional lenses for studying organizations focus on structures, made up of well-

defined boxes (jobs, units, and hierarchies) filled by people with specific roles and occupations responsible for well-defined problems and issues. But, we have known for a long time that the boxes and official channels of the formal organization tell only part of the story (Ranson, Hinings, & Greenwood, 1980). A boundary work perspective offers a different lens on organizing by focusing on how the formal lines that divide and channel activity are at the same time worked for, at and through by the agency of individuals and groups. As we have illustrated, this is sometimes for selfish purposes, sometimes for benevolent ones, and sometimes in an attempt to reshape patterns of bounded activity in more fundamental ways.

In response to the second and third objectives mentioned earlier, this review synthesizes what scholars who have taken a boundary work perspective in their research have enabled us to see so far in relation to competitive, collaborative, and configurational forms of boundary work, and identifies many potential directions for future research. However, beyond the many specific directions mentioned earlier, we believe that the notion of boundary work has even richer possibilities that have not so far been exploited because many organizational phenomena have simply not been considered explicitly using this lens, although they easily could be. In clearer terms, we think that the main affordance of the notion of boundary work is that it invites us to think about new and old phenomena in a novel way. For example, in the domain of work, scholars have recently developed the notion of "job-crafting" in which people design their own jobs (Tims & Bakker, 2010). What is this, however, but "boundary work"? As hinted at by Stjerne and Svejnova (2016), a boundary work lens also seems relevant to project management because spatial, social, and temporal boundaries are constantly being reworked. Yet, little research has exploited this opportunity either.

Doing a little boundary work of our own, we think that the boundaries for the application of a boundary work perspective are much more open than usually thought. Boundary work is not only about professions and occupations but also about boundaries among groups, organizations, and occupations, wherever they may be. On the other hand, the notion of boundary work is not a label for just anything to do with boundaries. It is about process, practice, and activity (Langley & Tsoukas, 2017; Nicolini, Mengis, & Swan, 2012), not about cartography. Specifically, it focuses on the sayings and

doings of purposeful individuals and collectives as they invest in work to influence the social, symbolic, material, or temporal boundaries, demarcations, and distinctions shaping their context and activities.

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