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COCREATING RIGOROUS AND RELEVANT KNOWLEDGE

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The communities of research and practice are embedded in different knowledge systems; research favors rigor, while practice favors relevance. Many management scholars have concluded that cocreating knowledge with these two knowledge systems is difficult and rare, with such criticisms or reservations often being based on an event-based account of cocreation in which the cocreation activities occur over a distinct period of time with a clear beginning and end. However, event-based accounts bring the challenges of cocreation into focus. In the present research, we have assumed a process ontology, which brings the dynamics into focus and recognizes that cocreation is continuous. We observed two projects in which researchers and managers collaborated to generate knowledge related to business sustainability, and conducted 67 interviews with 47 participants in similar projects. We found that, by making the process explicit, participants were better able to cocreate knowledge. Furthermore, we identified two devices that helped to make the process explicit: (1) making temporal connections between events and (2) recognizing the incompleteness of the objects. Our study contributes to prior research on cocreation by showing that cocreation occurs not just within events but also between events, so that rigor and relevance are imbricated over time.

Although many management researchers attempt to impact practice, they often fail to do so. This phenomenon is widely known as the "research–practice gap." Scholars have argued that researchers and managers belong to different knowledge communities and use different knowledge systems (Grey, 2001; Kondrat, 1995; Van de Ven, 2007), in that researchers seek rigor through generalizable and defensible insights while managers prefer relevant, context-specific, and prescriptive advice (Kondrat, 1995). However, even though the paradigms are different, commentators also suggest that bridging the research–practice gap is important because it can produce novel insights that improve peoples' lives.

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Scholars have suggested that the research–practice gap can be bridged by researchers and managers cocreating knowledge, whereby "academic researchers and the practitioners set out to research a problem where their interests intersect" (Mohrman, Pasmore, Shani, Stymne, & Adler, 2008: 616–617). Researchers and managers spend time together in workshops or meetings to jointly construct research questions and interpret data (Bartunek, 2007; Mohrman, Gibson, & Mohrman, 2001), and, with appropriate facilitation and design, they can mediate the differences between academic and practitioner knowledge (Carlsen, Rudningen, & Mortensen, 2014). Hereby, researchers and managers can share insights, assumptions, and questions that encourage each party to see the other's perspective, and, in doing so, gain more empathy and understanding for others' points of view (Beech, MacIntosh, & MacLean, 2010; Cunliffe & Scaratti, 2017; Shotter, 2010).

In spite of such efforts, though, collaboration between researchers and managers can be fraught with conflict (McKelvey, 2006; Whitley, 1984). Prior studies have argued that the rigor demanded by researchers is paradigmatically incommensurable with the relevance asked of managers, meaning that it is impossible to cocreate rigorous *and* relevant

knowledge (Kieser & Leiner, 2009). We take these inherent difficulties in bridging research and practice, specifically through cocreation, as the starting point of our own research.

Although previous examinations of cocreation have yielded important insights, they often describe cocreation through reference to discrete episodes or events (Beech et al., 2010; Carlsen et al., 2014; Cunliffe & Scaratti, 2017), which draws only a partial picture of cocreation. The focus is on the elements that can help discriminate successful from not-so-successful outcomes. Scholars look for similarities across events, identifying patterns that can be generalized across a number of theoretical domains, including collaboration, dialogue, and innovation (Amabile et al., 2001; Beech et al., 2010; Cunliffe & Scaratti, 2017). Such an event orientation assumes that cocreation ends when the joint event ends, so little consideration is given to the dynamics before and after the event or between events.

In this paper, we suggest that a process ontology brings the fuller process into view. The event itself is only part of a process of cocreation. Cocreation is in a constant process of becoming, making it difficult for scholars to judge its outcomes and their relative success, especially while in the event and shortly afterward. By applying a process ontology to cocreation, we ask the following question: "How do researchers and managers imbricate rigorous and relevant knowledge, given the challenges inherent in the process?"

We were offered privileged access to a single organization, the Network for Business Sustainability (NBS), which undertakes projects that bring researchers and managers together to cocreate knowledge. At the time of our research, NBS had conducted 13 projects over 10 years. We drew from two data sources: (1) real-time observations of two projects wherein researchers and managers attempted to cocreate knowledge over a period of seven to nine months, and (2) 67 interviews with researchers, managers, and project managers who had participated in previous NBS cocreation projects.

To theorize cocreation as a process, we draw on process ontology (Langley, Smallman, Tsoukas, & Van de Ven, 2013; Tsoukas & Chia, 2002; Van de Ven, 1992) and the role of time in organizational studies (Bluedorn & Denhardt, 1988; George & Jones, 2000; Reinecke & Ansari, 2016). Specifically, our research surfaced an important insight. Cocreation can be understood as the interplay of academic and practitioner knowledge that allows for the two kinds of knowledge to imbricate over time. Failed cocreation efforts may simply be events that are part of an emergent process. Actors did not cocreate knowledge in most of the joint events in our study and yet each of the projects we studied ultimately generated objects that imbricated academic and practitioner knowledge.

A process ontology does not imply that actors cannot engineer the process in order to create successful outcomes. Researchers and managers in our study recognized that cocreation was a process by (a) making temporal connections between events and (b) recognizing the incompleteness of the objects. These two devices allowed participants to see the process of cocreation, continue to engage in the process, and ultimately cocreate rigorous and relevant knowledge.

Unlike prior claims that the differences between research and practice are vast and often insurmountable (Kieser & Leiner, 2009, 2011; McKelvey, 2006), we show that the differences are indeed surmounted through a process lens. A process ontology sees cocreation as a continuous process of becoming, even when researchers and managers are not at the table together. Our insights contribute to the rigor–relevance literature, which is often critiqued for lack of theoretical insights (Kieser, Nicolai, & Seidl, 2015). The devices we propose provide an empirically grounded explanation of how researchers and managers imbricate rigor with relevance over time.

LITERATURE REVIEW

The research–practice gap is characterized as the failure of management research to impact practice (Kieser et al., 2015). This gap is often traced to the tension between rigor and relevance (Bansal, Bertels, Ewart, MacConnachie, & O'Brien, 2012; Bartunek & Rynes, 2014). Research findings are "relevant" when they "influence management practice; that is, if they lead to the change, modification, or confirmation of how managers think, talk, or act" (Kieser et al., 2015: 144). Research findings are "rigorous" when they produce generalizable and defensible insights, while subscribing to the specific practices of knowledge production widely accepted in the academic community (Kondrat, 1992; Van de Ven, 2007).

The scholarly interest in the research–practice gap has grown in recent years, for several reasons. Many commentators argue that the tension between rigor and relevance can generate novel insights because of the creative abrasion that comes with people working across knowledge systems (Van de Ven & Johnson, 2006). By thinking about the practical impacts of their work, researchers ask questions and

seek answers that yield both practical and theoretical insights (Marcos & Denyer, 2012). Similarly, managers unshackle themselves from their specific context to draw insights from other contexts and challenge their taken-for-granted assumptions. They can use these insights and research evidence to make better decisions (Rousseau, 2006). More generally, by engaging in relevant research, researchers will more effectively and efficiently use public funds to improve people's lives (Banks, Pollack, Bochantin, Kirkman, Whelpley, & O'Boyle, 2016; Bartunek & Rynes, 2014; Brown, Deletic, & Wong, 2015). By bridging research and practice, management researchers are more likely to generate management theories that not only improve management practice, but also do not inadvertently "destroy good management practices" (Ghoshal, 2005: 86).

Cocreating Knowledge to Bridge the Research–Practice Gap

Aram and Salipante (2003) suggested that bridging the research–practice gap is difficult because the knowledge systems are fundamentally different. Researchers generally follow the tenets of systematic inquiry, even if they hold different research paradigms (see Van de Ven, 2007, for a review). Specifically, researchers seek to identify plausible explanations that can be generalized across contexts, eliminating spurious relationships (Latour & Woolgar, 1986). They subscribe to the norms of "quality" dictated by their academic peers. They also tend to work largely independently, as they collect data, write journal articles, and seek funding.

On the other hand, practitioner knowledge is mostly "colloquial and implicit" (Kondrat, 1995: 411). It is based on individuals' experiences and tends to be context specific, making it difficult to generalize beyond the particular circumstances (Van de Ven, 2007). Organizationally, managers often work in teams, seldom working alone. They constantly face diverse interests and must negotiate their understandings with other people and different situations. Managers must make sense of each situation and discover ideas as they navigate their daily activities (Kondrat, 1995). As a result, a manager's truth claims are validated through practice—identifying a solution to the problem that they face (Kieser & Leiner, 2011). Further, managers communicate their knowledge through conversations and storytelling with peers, rather than through journals.

Several scholars have asserted that bridging the research–practice gap is a knowledge production problem (Van de Ven & Johnson, 2006), which requires researchers and managers to form a learning community and jointly produce knowledge rather than transfer knowledge from research to practice. Others have similarly described bridging the research–practice gap in terms of knowledge collaboration (Amabile et al., 2001; Bansal et al., 2012; Carlsen et al., 2014), which includes engaged scholarship (Van de Ven, 2007), collaborative research (Starkey & Madan, 2001), and Mode 2 research (Gibbons, Limoges, Nowotny, Schwartzman, Scott, & Schwartzman, 1994; Kelemen & Bansal, 2002).

Here, we explore research–practice knowledge collaboration under the label of "cocreation." In cocreating knowledge, researchers and managers come together to study a problem of common interest. They each bring their insights and skills such that the knowledge produced is both rigorous and relevant (Mohrman et al., 2008). Cocreation has been featured in literatures such as open-system innovation and design (Romme, 2003; Van Aken, 2005). The consistent idea among these literatures is that the user is not merely a passive consumer of knowledge but an active creator of it (Bogers, Afuah, & Bastian, 2010). Garud, Jain, and Tuertscher (2008) illustrated such cocreation work in the context of Linux code and Wikipedia entries, where the lines between the users and producers are blurred. In our context, cocreation means that managers do not just consume academic knowledge or collaborate superficially with researchers but create knowledge alongside researchers.

The Process of Cocreating Knowledge

Given that some researchers have suggested that cocreating knowledge takes time (Bansal et al., 2012; Brown et al., 2015; Marcos & Denyer, 2012), it seems appropriate to apply a process lens. Below, we describe how prior work has addressed cocreation processes.

Focus on joint events. Most prior cocreation work describes the joint events between researchers and managers. Mohrman et al. (2001) and Bartunek (2007) called these "forums," where researchers and managers come together to define the research question and jointly interpret research results. Romme et al. (2015) called them "trading zones" in which researchers and managers hold productive exchanges, in spite of their different meaning systems and logics. These joint events allow researchers and managers to surface different assumptions, in order to collectively re-examine and build new

understandings of the ideas exchanged. Actors recognize the unique nature of such spaces, and hence can suspend their preferred ways of knowing and experiment with new, albeit temporary, routines (MacLean, MacIntosh, & Grant, 2002; Mohrman et al., 2001; Romme et al., 2015). These joint events are more likely to be successful when they are masterfully facilitated and participants feel psychologically safe (Bansal et al., 2012; Bartunek, 2007; Romme et al., 2015).

In studying these joint events, the empirical focus of scholars has been on specific interactions between researchers and managers, so the cocreation dynamics are limited to the dialogue within the event. For example, Beech et al. (2010: 1341) focused on one instance from their longitudinal study to build the concept of a "generative dialogic encounter," in which they emphasized a point-in-time dialogue. Others (e.g., Rhodes & Carlsen, 2018) have described how a conversation between researchers and managers can yield knowledge that is impactful for research and practice. Similarly, Cunliffe and Scaratti (2017: 29) described "dialogical sensemaking" as instances in their year-long research study in which researchers and managers explored multiple meanings for generating knowledge together. Greig, Gilmore, Patrick, and Beech (2012: 278), in their study of a three-week long music festival, focused on two instances of tension or "dramatic moments" in which the back and forth between researchers and music practitioners revealed new insights.

These events are bounded by a clear beginning and end, which means that the ideas and knowledge cease to evolve and the experience ends when the joint event ends (Simpson, 2014). By presenting disconnected events over time, scholars convert actors' experience "into discrete and measurable instantaneous moments" (Chia, 2002: 864) in which each instant is divorced from prior or future moments. Such a view is contrary to the lived experiences of actors in many cocreation projects, which are often long term with ideas morphing inside and outside of the joint events (e.g., Bansal et al., 2012; Brown et al., 2015). Additionally, by exclusively studying workshops or meetings as disconnected events over time, scholars place excessive importance on the success or failure of such events. Change is seen as having a beginning and end so that the effectiveness of the event can be evaluated. Given the discreteness of the event and the differences in research and practice knowledge systems, many such joint events are then seen as difficult, challenging, or unsuccessful.

Cocreation processes as synoptic accounts. A few scholars have more explicitly described cocreation as a process; however, they take a synoptic view of process (Tsoukas & Chia, 2002). In other words, these researchers synthesize (offering "a synopsis of") the process as outsiders, rather than describing the micro-level dynamics experienced by participants in the process. The process is either seen as a set of stages within the process or the entire process is reduced to a single stage. For example, Van de Ven and Johnson (2006) and Van de Ven (2007) described engaged scholarship as a framework of specific stages or steps for researchers to cocreate knowledge with managers. Others have defined Mode 2 (e.g., Gibbons et al., 1994) as a longitudinal engagement in which researchers and managers collaborate over time to produce knowledge. Amabile and colleagues (2001) identified the determinants of success in a long-term research–practice collaboration in terms of the characteristics of teams, environment, and process. Similarly, Marcos and Denyer (2012) described a multiyear project involving researchers and managers. They isolated specific practices that allow for knowledge cocreation.

A synoptic approach to process masks the dynamics within and between stages in the process. The process is seen as a series of static pictures at moments in time, rather than a flow of interactions over time. Although time is immanent in such a model, the process is reduced to the changes in ideas from Time A to Time B (e.g., Langley et al., 2013). It is possible, then, for researchers, such as Amabile et al. (2001), to find that the process was particularly successful because of the respective capabilities of the participants and the quality and frequency of meetings.

Such a view of process hinges on predictability and control, privileging researchers' knowledge. Researchers see the participants of the process as objects of interest and believe their knowledge should be shared with participants to improve outcomes. Bartunek (2007: 1328) reinforced this point by stating that "engaged scholarship is still limited, because it involves practitioners on academics' terms, in the conduct of research activities in which we are far more expert than they."

These approaches to cocreation are what Thompson (2011: 757) described as an entitative approach to theorizing process in which "a representation is literally 'abstracted' from an ongoing process in order to give form to the flux." The process itself becomes an object or entity, so the incommensurability of academic and practice knowledge

systems that others have lamented (e.g., Kieser & Leiner, 2009) can become obfuscated in the pursuit of patterns across the process. The messiness of the actors' experiences of confronting different knowledge systems is smoothed over.

In general, without seeing the flow in the process, existing literature fails to "provide [an] ontologically accurate description of [the] phenomenon" (George & Jones, 2000: 658). Hence our research question: "How do researchers and managers imbricate rigorous and relevant knowledge, given the challenges inherent in the process?"

METHODS

Research Context and Sample

We situated our study at NBS, a Canadian nonprofit that brings together business leaders and academic experts with the goal of addressing the most pressing sustainability issues. We selected NBS because of its experience in cocreating knowledge with researchers and managers. NBS was established in 2005 and had completed 13 projects when this study commenced.

NBS aims to continuously improve its processes in order to cocreate knowledge effectively, so Pratima Bansal (the second author), who founded and directs NBS, invited Garima Sharma (the first author) to collaborate to improve NBS processes. Both authors are researchers, but Bansal is also the executive director at NBS and was able to offer deep access, which is especially difficult to secure and maintain in messy, sometimes ineffective, processes (Dutton & Dukerich, 2006). Moreover, although she directs NBS, Bansal is not involved in the day-to-day workings of any project and was open to critical insights. Both authors were involved in the interviews and in developing this manuscript; Sharma offered an outsider's view to the process, whereas Bansal offered insights into the context.

Although both of us are management academics, we embodied the research–practice collaboration that we write about in this article (Sharma was the researcher and Bansal was both a researcher and a practitioner). We gathered insights from our study participants, while at the same time reflexively making sense of those insights from our own insider and outsider perspectives. Although we did not experience the research–practice gap in working with each other, we sought to develop insights that had both theoretical merit and practical relevance.

Each year, NBS identifies a managerially relevant topic. The organization then issues a call for proposals to management researchers worldwide to study the topic. Once the NBS staff identifies a suitable research team, it assembles a small group of managers to work with the research team to ensure that the knowledge created is relevant to the community of practice. The selected research team meets the team of managers at predetermined times to realize major milestones in the process—for example, defining the research question, creating a research design, discussing initial search results, and making sense of the findings. The materials produced by the research team are distributed freely through NBS's website and public workshops.

Data Collection

We observed the cocreation process in real time over the course of two projects; participated in NBS meetings; interviewed managers and researchers who had participated in previous projects, as well as non-participating managers; and validated our insights through focus groups and additional interviews of study participants. The data sources are summarized in Table 1 and described in more detail below.

Observations. The meetings for Project 1 spanned from January 2014 to September 2014, and the meetings for Project 2 spanned from February 2015 to August 2015. Project 1 focused on the question "How do managers think long term in a short-term world?" The project team comprised two researchers who were experts in the topic of long-term thinking, a group of five managers, an academic advisor who was also a researcher but not in the research team and hence provided an outsider's perspective, and an NBS staff member who facilitated the project. All managers were middle- or high-level managers within their organizations, and all except one had participated in similar NBS projects in the past. Some of the managers had met one another at previous NBS events, but the researchers and managers had not worked together before.

The research process for Project 1 followed a systematic review of the literature in order to produce reports with frameworks that aimed to inform management practice. The project had seven meetings that were spaced 4–6 weeks apart. Both parties knew the goals for the various meetings, such as deciding on the list of keywords for a literature search (Meeting 2) and reviewing the final report (Meeting 7).

Project 2 followed a similar structure, with six meetings spread four to six weeks apart. But, the project differed in three ways. First, it was guided by

TABLE 1
Data Sources

		No. of Interviews	No. of Participants	No. of Meetings and Focus Groups
Interviews	Managers (NBS[a] affiliated)	29	14	
	Managers (Other)	9	9	
	Researchers: Team members	19	15	
	Researcher: Academic advisor	1	1	
	NBS staff	7	7	
	Academic expert	2	1	
TOTAL		*67*	*47*	
Observations	Project 1		9	7
	Project 2		9	6
Member checking	NBS[a] staff		8	1
	Managers: Focus group		3–5	5
	Managers: Workshop		16	1
TOTAL				*20*

[a] NBS = Network for Business Sustainability.

a different research question: "How do competitors collaborate for advancing sustainability?" Second, it started with a shorter literature review, instead of a systematic review of the literature. Third, the project collected primary (qualitative) data, rather than building insights strictly from academic literature. As a result, some of the meeting objectives differed between the projects. For example, instead of discussing a list of keywords, as in the second meeting in Project 1, the second meeting in Project 2 focused on discussing the research design.

Project 2's team comprised one researcher, five managers, an NBS staff member, and Sharma as a participant observer. An academic advisor also joined a few meetings. The researcher was selected by NBS based on similar criteria as were used in the other project: her expertise and research experience related to the topic. The managers' designations ranged from sustainability manager to company president. None of the managers or the researcher had worked together before.

We recorded each meeting and wrote extensive memos. All meetings were conducted using a conference line on which participants could hear one another, and, in some cases, participants used video-conferencing and shared their screens.

Sharma was a non-participant observer in Project 1 and a participant observer in Project 2. As an observer, she could gather objective insights; then, as a participant observer, she could deepen her insights by putting them into practice. Participant observation allows the researcher to gain knowledge that is usually shared by participants with an ingroup member and potentially hidden from outsiders (Becker, 1958). Following the approach taken by other researchers to uphold rigor (e.g., Jay, 2013), Sharma maintained a task diary in which she took detailed notes of her experiences as a participant observer. She recorded notes of whom she interacted with, what she did, and her key insights regarding every interaction. The two coauthors talked frequently about the progress of the projects and the practices. Another NBS staff member also participated in Project 2 meetings to ensure the meetings followed NBS protocols. The staff member and Sharma interacted frequently, discussing each other's interpretations of the meetings.

We observed non-sequential and rare moments of cocreation in both projects. The similar patterns that we observed across the two projects bolstered our confidence in our findings, especially given the different observer roles Sharma played in each of the projects.

Interviews. We conducted 67 interviews with 47 individuals. Twenty interviews were with *researchers* who had participated in previous NBS projects. Each interview lasted 60 minutes on average. The interviews started with broad questions attempting to understand the researchers' experiences in these projects, such as expectations and surprises. We also asked researchers to identify moments that led to new knowledge and times when they felt that the interactions were of little value. In subsequent rounds, we asked questions about the work researchers completed between the meetings. We conducted two interviews with an academic with expertise in rigor–relevance literature, who also understood NBS activities. We recorded and transcribed all interviews and collected documents and other materials related to these projects.

We conducted multiple rounds of interviews with the *managers* who had participated in different NBS projects in the past, for a total of 29 interviews. In the first round of interviews, we asked open-ended questions around the key issues in the research–practice gap. Each interview lasted for 30 minutes on average. In the second round of interviews, we asked the managers to identify the projects they remembered most. We asked why they remembered the project; their answers gave us insights into the salient project processes and outcomes. As with the researchers, we asked the managers to identify the moments that they connected (or not) with the researchers in different projects over the years. In the third round of interviews, we asked the managers to describe their understanding of the process, including elements that worked and those that did not. We delved into details about the work they did on the project between meetings. Each interview lasted from 30 to 60 minutes.

We also interviewed nine *colleagues of these managers* to gain insights from managers who had not been as closely involved with NBS projects. These interviews lasted 30 minutes on average. We asked them how they engage with knowledge that is based on rigorous research, and about their insights on working across the differences between research and practice communities.

Finally, we conducted seven interviews with *NBS staff members* who had been involved in these projects in various roles; specifically, the project managers and the NBS managing director. Each interview lasted for 60 minutes on average. We asked about their experiences with different projects and sought their inputs on bridging the research–practice gap. Bansal was not involved in this set of interviews.

Focus groups. After all the interviews and observing Project 1, we synthesized and shared emerging insights with several study participants. We did this in three stages. First, we conducted a workshop with eight members from the NBS staff. Second, we conducted five face-to-face focus groups, each featuring three to five managers whom we had interviewed. We recorded and transcribed the conversations in all focus groups. Third, we shared our emerging insights in a retreat with a larger group of managers who had been involved in previous projects, and most of whom we had interviewed. In each instance, we not only reported our emerging insights but also encouraged the participants to challenge and refine the ideas.

Data Analysis

We analyzed the data in three discrete steps, as elucidated below. It is also worth noting that, although the process is described in terms of steps, it was highly iterative in practice.

Step 1: Memos and field notes. Both authors read and discussed the field notes and memos throughout the process. Feldman (2000: 615) has noted that, in a qualitative study, it is "hard to say where data gathering stops and analysis begins." Our analysis was similarly deeply interspersed with taking field notes, conducting interviews, and intensive debriefs between the coauthors. To guide our discussions, we drew on the literature on research–practice collaboration and on the issues of rigor and relevance (Kieser et al., 2015; Van de Ven, 2007).

Our insights from writing memos and discussing them continuously refined what we asked and how. For example, after the first few interviews with managers, we realized that objects, such as frameworks on PowerPoint slides, played an important role, and so our subsequent questioning focused more deeply on when and how objects appeared and were used in the process. We also retrieved the frameworks developed in various projects that were mentioned by interviewees as critical data points.

Similarly, we turned to the literature on dialogue (Boland & Tenkasi, 1995; Tsoukas, 2009) and on objects (Nicolini, Mengis, & Swan, 2012) to better understand the dynamics we observed in the projects and heard in the interviews. We also turned to the literature on interstitial spaces and trading zones (Bucher & Langley, 2016; Furnari, 2014; Romme et al., 2015) based on the insights from our memos and discussions. In sum, memo-writing and discussions helped us to broaden our search of relevant theory and deepen our empirical investigation.

Step 2: Seeing cocreation within joint events. We asked of our data, "How do we know cocreation when we see it?" We followed Jarzabkowski, Le, and Spee's (2017) recommendation to look for "telling" moments or moments meaningful for theorizing. We looked for such moments in both projects, such as the introduction of certain kinds of objects that seemed insightful for theorizing (e.g., a blank slide or a baseball analogy). We tagged these interactions and analyzed line by line who said what, and how the comment related to our theoretical interest in knowledge cocreation.

Our initial analysis indicated that cocreation was evident when researchers and managers engaged in what prior literature has described as dialogue (Beech et al., 2010; Cunliffe & Scaratti, 2017; Rhodes & Carlsen, 2018). In contrast, failure to cocreate was reflected by inflexible opinions and failing to listen—for example, researchers refusing to add

keywords for a systematic review based on the managers' suggestions because the keyword list per the researchers was "comprehensive." We relied on the description of dialogue in the rigor–relevance literature to see cocreation as surfacing assumptions, questioning, and turn taking (Cunliffe & Scaratti, 2017; Shotter, 2010). We looked for evidence of dialogue across the meetings we had tagged as cocreative, as well as in the interviews. We started by generating codes closer to the data and aggregated them to higher-level themes we describe in our theorizing. For example, codes such as "not giving a definite answer," "thinking out loud," and using phrases such as "I guess," "maybe," and similar others aggregated to the theme of "expressing uncertainty."

Step 3: Seeing cocreation across joint events. In addition to focusing on the momentary "doing" or meetings when the two parties came together, we stepped back to see how a series of such doings yielded a process (Jarzabkowski et al., 2017). We also sought to understand why project participants, especially managers, kept returning to the project meetings, even when there were few cocreation moments.

It was evident that researchers and managers in our study did not see the joint events as disconnected from each other; rather, they described continuity across the events whereby the present event was connected to the past and future events. The actors spoke to different moments in the project or about the project in its entirety, even when we probed into specific moments. In addition, both parties considered objects in terms of an ongoing evolution across the events, such that single instances of success and failure of cocreation did not derail the project.

We ultimately turned to the literature on process ontology (Langley et al., 2013; Tsoukas & Chia, 2002) and on temporality in respect of an organizational phenomenon (Butler, 1995; George & Jones, 2000; Reinecke & Ansari, 2016) to theorize what we were witnessing. We systematically coded how researchers and managers connected the present event to the past and future, saw the project in its entirety, and changed the objects both within and across joint events.

FINDINGS

We start this section by describing what happened within the joint events. A few of these events contained "cocreation moments" in which researchers and managers dialogued around objects. We show that cocreation occurred around objects that were seen as incomplete. However, cocreation moments were relatively rare, and most events did not contain any, as reflected in the little interactive dialogue around objects that was seen as complete.

In the second subsection, we describe the activities between and across joint events, bringing a fuller process into view. We show that the lack of cocreation moments within an event did not derail the project because researchers and managers could put each event into the context of the whole project. Furthermore, the objects helped researchers and managers see connections between events, as the objects morphed over time with the input from researchers and managers.

Within Joint Events

Joint events without cocreation moments. Moments in which researchers and managers did not cocreate knowledge were characterized by the researchers' inflexibility to change the ideas they brought to the meetings. The researchers discovered answers to the research question by following a rigorous research protocol. In the meetings, they shared the answers and defended them rather than build ideas with the managers. As a result, the managers either passively listened, or attempted to contribute but failed. One manager described such an interaction from a meeting as follows: "You felt the researcher had a theory that they were going to be pushing and they were trying to get the research or our thinking to fit into it." The manager expressed the sentiment that the researcher was displaying what he believed to be the "right" theory, so there was no need or opportunity to add anything.

These meetings without cocreation involved objects such as a framework on a PowerPoint slide that the researchers presented and the managers understood as being finished. The researchers introduced text-heavy slides authoritatively, so the work seemed completed and the milestones achieved. The researchers informed the managers of the project's progress, rather than seeking managerial input. The managers did not see how they could contribute to the objects. As a result, the researchers expressed their opinion while the managers listened passively.

We observed an illustrative interaction in the third meeting in Project 1. The researchers showed a chevron diagram on a PowerPoint slide. Each segment of the diagram was heavy with text that summarized studies related to long-term decision-making. The diagram accompanied a two-page document that reported the results of the literature review. In the email message that the researchers sent to the managers, the researchers said that the

document completed a major project milestone. They said they would share the "progress report," and the report was labeled "work completed." The researchers opened the meeting with a similar posture, that they had finished reviewing the literature, it was "close to 100% now . . . we have identified 163 academic articles that meet the screening criteria for more detailed analysis. We have now been through the 163. . .," indicating that the task of reviewing the studies was complete and the insights were represented in the diagram.

In the meeting, the researchers detailed the systematic review process that yielded the segments of the diagram. Then, the researchers spent several minutes on each segment, explaining the studies they had reviewed. Attempting to contribute, one of the managers remarked, "This is high-level information. We need more information in the sense of 'How do I help . . . give input on what you need from us?'" The researchers responded by saying that the framework was a representation of "what's out there" and repeated the mechanics of the systematic review process. Below is an illustrative exchange:

> MANAGER: I guess you have built this framework by putting in buckets what you're finding. Is there a filter that would be applied to this, because I think every industry has a different definition of "time"?
>
> RESEARCHER: We cannot go too far in the industry specifics without just getting bogged down completely. I mean, the industries differ so much.
>
> MANAGER: Maybe we cannot get too company specific. What I'm saying is ... not everybody has the same definition of "long term." I think that's important.
>
> RESEARCHER: I think it's worth mentioning that some of what you're looking for may not actually be written about or not written about rigorously. What we're updating you on is based on what we've actually seen [in the literature].

The manager in this exchange attempted to contribute by focusing on the outcomes relevant for practice, such as the industry relevance of research insights. However, the researcher responded to the comment by describing the rigor in the research process, indicating to the managers that the chevron diagram was complete.

Cocreation moments in joint events. A few joint events had cocreation moments, which were characterized by dialogue. In these moments, the researchers expressed uncertainty. The researchers indicated that they did not have all the answers, inviting the managers to contribute. The researchers asked the managers questions, to which the managers responded with their inputs. The managers also asked other managers questions, instead of looking to the researchers for the answers (see Table 2).

Such dialogue was around the objects that the researchers presented, which the managers understood as being incomplete. These objects were often drawn simply and showed a few boxes, arrows, and lines. One picture depicted a seesaw with the advantages and disadvantages of long-term thinking (Project 1), something that could be quickly drawn on a piece of paper. These objects tended to be sparse, inviting participants to fill in the blank spaces. As an extreme example, the researcher in Project 2 presented a blank slide to managers in the meeting. She asked the managers to build a definition with her, rather than presenting her own definition to the managers. The managers actively engaged in the conversation, contributing words and phrases to build a definition with the researcher.

Instead of authoritatively reinforcing their points of view, the researchers invited the managers to fill in gaps in the object or in the researchers' knowledge by *asking* the managers *questions*. These questions were sometimes specific to the immediate point—for example, "How do you handle disagreement in Responsible Care?" (Project 2)—and sometimes open ended, inviting general input from the group—for instance, "What do you think?" or "Does this idea resonate with you?"

Because the managers could see the opportunity to change the object(s), they started to dialogue not just with the researcher but also with one another. Sometimes, a manager would just ask questions to the room—for example, "The question for you, or anyone else, is, 'What is the implication?'" Other times, a manager would specifically speak to the other managers instead of to the researchers—for example, "This is not a question for [name of researcher], it's a question for the group."

The incompleteness in the object was also evident when the researchers *expressed uncertainty* in their ideas. They frequently used phrases such as "I do not know," "I guess," or "I am undecided myself." The researchers also thought aloud—for instance, "Maybe. in the final report we should include this graph," in response to a manager's suggestion, indicating that the researchers were changing the ideas in the objects as they listened to the managers' inputs.

Project 1's fifth meeting provided a vivid illustration of this type of exchange. The researchers introduced a figure with "productive" and "wasteful" on the *y*-axis, and "LT" for long term and "ST" for short term on the *x*-axis. The researchers mapped the

TABLE 2
Cocreation Moments within Joint Events

Joint Events	Dialogue in Cocreation Moments
Project 1, First Meeting on Analysis and Frameworks	
RESEARCHER 1: The main point here is to get your reaction, ask you "Does that [materials presented] make sense?" We are going to try and focus on the big insights, not all the details. Sure, we will allude to the process a little bit but that is not the goal of this (*refers to the slide*).	*Asking questions* ("... The main point here is to get your reaction, ask you 'Does that [materials presented] make sense?'")
MANAGER 1: How are you defining "long term"?	*Expressing uncertainty* ("... I try really hard not to give a definitive answer ... it is going to depend...")
RESEARCHER 1: This is something that I have thought about for a long time and I try really hard not to give a definitive answer. Reason for that is that it is going to depend again on so many factors, like the industry.	
MANAGER 1: The reason I asked the question is we [at my organization] do have a planning timeframe. We would have a multiyear plan that might be a five-year plan. That five-year plan, when you are in day-to-day operations, does seem like a long time.	
RESEARCHER 1: I think there is a lot of value in not fixing it, not saying five years is absolutely one or the other because they [the numbers] do not work for everybody.	
Project 1, Second Meeting on Analysis and Frameworks	
NBS STAFF MEMBER: The researchers need to know whether they are asking the right questions, offering relevant information. Are they [the frameworks] clear? Too simple? Too complicated. Are there confusing terms? And so on.	*Asking questions* ("Are they clear? ... Are there confusing terms?")
RESEARCHER 1 (*introduces the slide*): This slide is to think about how to translate the long-term attentions into practice. It draws on a lot of the things that we have read and reviewed, but, putting it together—putting these six particular things in this order—is our interpretation.	*Expressing uncertainty* ("... this order is our interpretation"; "I am not totally sure how to do it yet")
MANAGER 1: I guess the one thing I am thinking is that the long-term element is the only piece that might have a trajectory ... that you have almost like the line or the arrow spills out into a dotted line that then circles, informs the next decision in some way. So, add a dotted line.	
RESEARCHER 1: I get what you are saying. I am not totally sure how to do it yet, but I get what you are saying and we will find a way to include it.	
Project 2, Meeting on Playbook	
RESEARCHER: What do you think of the deliverable of the project? I am not sure if anyone wants to start, or has an opinion about that already. I do not really know myself. I imagined a report, but I am curious about your opinion.	*Asking questions* ("What do you think of the deliverable...?"; "... a question for the group...")
MANAGER 2: This is not a question for [name of researcher], it is really a question for the group. What does the playbook look like, or what exactly does it have in it?	*Expressing uncertainty* ("I do not really know myself")
MANAGER 3: I think we should have conclusions about what prompted those collaborations. What was the initial challenge? How these collaborations were structured. What helped, and what stood in the way, and what were the results and what made them successful?	
Project 2, Meeting on Analysis and Frameworks	
RESEARCHER (*after explaining the framework*): It might be a good idea to just pause here and ask the group in general if they find anything interesting here. Are these classifications of use, or should we be focusing on a specific row or a specific column as we move ahead?	*Asking questions* ("Are these classifications of use?", "... should we be focusing on...?")
MANAGER 1: The budget that they [collaborations] have, arising from these contributions or membership fees, and the other factors. How invested are those members in the success of the organization? The size of the budget could give us some hints on that.	*Expressing uncertainty* ("Yeah, I think so. I think that if ...")
RESEARCHER: Yeah, I think so. I think that if .... The more a company is invested in the sense of having to contribute monetarily—also with it is resources—the greater would be its engagement.	
MANAGER 2: I can just give, as a very telling example, that companies of our size pay fees to industry associations in the hundreds of thousands of dollars every year. It is not just a $5,000 fee to be member of an association.	

decisions related to the drafting of baseball players—a choice between drafting veteran players (focusing on short-term returns) or rookies (focusing on long-term returns) (see Figure 1).

The researchers opened the meeting by saying that the figure was "meant to be an illustration and it was never meant to go into the final report." They also qualified their attempt by saying, "We just wanted to get the idea out there that [long-term versus short-term] decisions are very complicated."

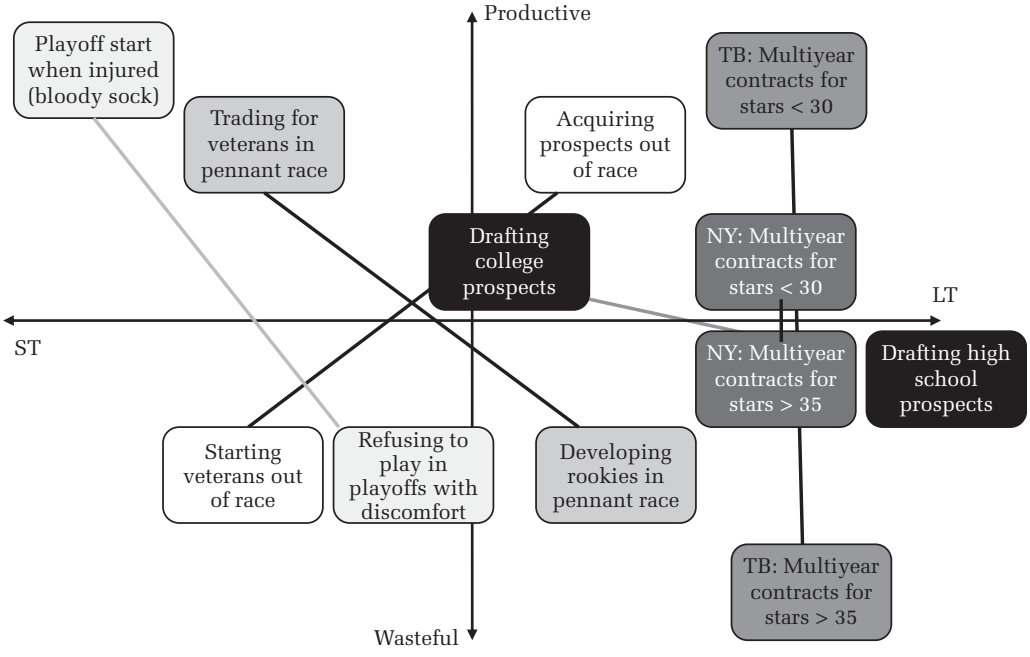
The figure was incomplete because it was based on an example—drafting baseball players—that the researchers emphasized would not be included in the final report and was simply a way to convey the ideas. As soon as the researchers finished explaining the figure, the academic advisor spoke. He was worried that there was a lack of precision, something that the research community values:

> ACADEMIC ADVISOR: I am a little worried that you are going to get into fights over labeling things "productive" or "wasteful" [the axes' labels] arbitrarily. New York certainly does not see multiyear contracts as wasteful (*referring to the baseball analogy*).
>
> RESEARCHER: Their fans do.
>
> ACADEMIC ADVISOR: Some do but clearly the team, the management does not or they would not do it. I do not know exactly what you do with that but I am just a little worried that you will get bogged down.
>
> RESEARCHER: What if it was more of a ... what if it was more just a "low" to "high"?
>
> ACADEMIC ADVISOR: "Low to high" what though?
>
> RESEARCHER: Low to high return, low to high...
>
> ACADEMIC ADVISOR: Yeah, okay. That may be okay. I am just worried about making that judgment too casually, too generally, that is all, and it may be that is what you have to do.

In saying that the researchers were labeling things "too casually, too generally" and changing the labels in the meeting, the academic advisor expressed concern about the figure's incompleteness, that the process of putting together the figure could not be defended.

The researchers responded by saying that it was not a "research moment" but a "teaching moment"—something they would do in their classroom. By separating "research" from what they were doing in this meeting and calling it a "teaching moment," the researchers seemed to be more comfortable in modifying the ideas and framework based on their conversation with the managers. In fact, the researchers emphasized to the managers that "we

FIGURE 1
Illustration of Baseball Drafting Decisions Introduced in Project 1



could use everyone's help in getting that mapping or getting the specifics in there."

A manager responded with excitement. He offered to draw a similar figure by replacing the baseball example with sustainability-related examples from his organization. Another manager joined in and wanted to do the same by drawing examples from her industry. The exchange yielded several changes. The sustainability-related examples drawn by both managers were included in the final report, and the researchers revised the framework labels based on the discussion.

Between and Across Joint Events

In Project 1, there were only two joint events with cocreation moments; the remaining five events demonstrated little cocreation (see Figure 2a). In Project 2, three joint events exhibited cocreation moments, while the remaining three did not (see Figure 2b).

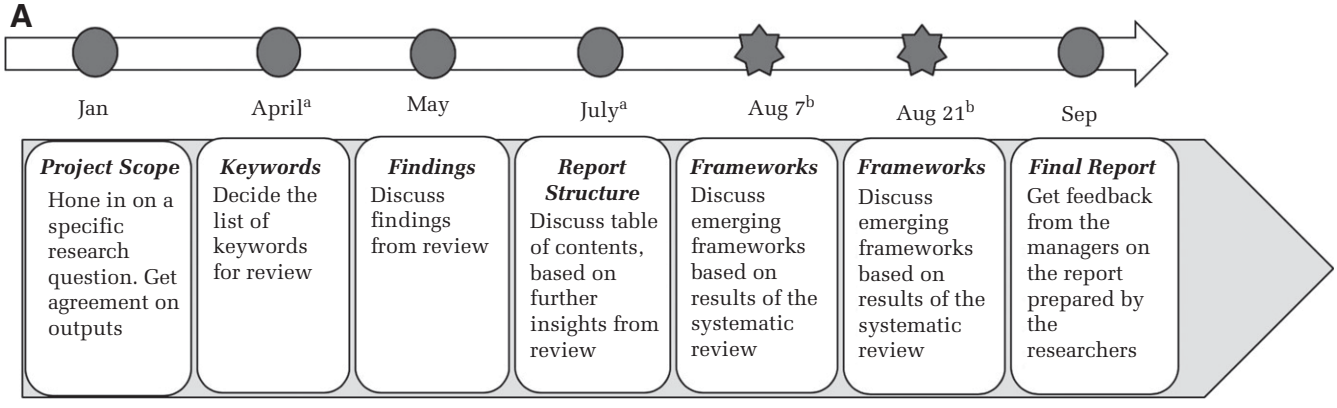
With so few joint events with cocreation moments, it seemed quite likely that the objects would not imbricate knowledge from both researchers and managers, and that at least the managers would start withdrawing from the initiative. Yet, we found that managers kept returning, hopeful that they could contribute to the project, and researchers continued their attempts to engage the managers in developing the ideas with them. To understand why, we expanded our analytical lens to look across joint events.

We found that the participants saw cocreation as an ongoing process, not just the outcome of a joint event. As one researcher explained, "I can't really remember one instance where we said, 'OK, now we agree on something' . . . I think it was really more the process." Such a process of cocreation was evident when researchers and managers made connections across events and saw the project in its entirety. Moreover, the process was explicit when researchers and managers saw the object changing across events (see Table 3).

Making temporal connections between events. At the outset of the project, managers and researchers agreed on a program of work. They knew there would be a series of meetings, the general deliverables for the meetings, and the date by which the project was expected to be completed. Both parties agreed on the project timeline (all NBS projects follow a similar timeline).

Researchers and managers did not express too much frustration for events that lacked cocreation moments. One researcher did observe that, in some joint events, it seemed that the group "took one step forward and a couple of steps backwards." But both researchers and managers sustained their participation since they saw prior and future events as being connected to the present event. Both parties saw the project in its entirety such that each event was part of the larger whole. The events represented only punctuation marks in a longer narrative, and the narrative was central in explaining cocreation, not the events themselves.

FIGURE 2A
Cocreation Moments in Project 1

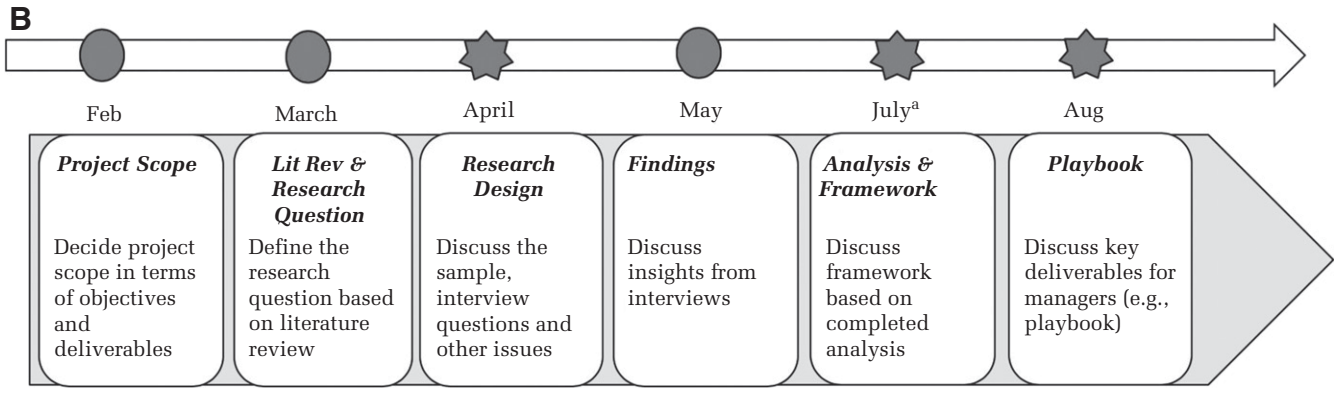


Note: Months marked with a star rather than circle indicate meetings with moments of cocreation.

[a] Some meetings were more than 30 days apart. Researchers and managers knew the updated schedule.

[b] There were two meetings in August to finish the tasks—we observed cocreation moments in both meetings.

FIGURE 2B
Cocreation Moments in Project 2



Note: Months marked with a star rather than circle indicate meetings with moments of cocreation.
[a] No meeting in June; researcher continued with data collection (interviews) and analysis.

Both parties *connected the present joint event to the past*. Each event began with the researchers summarizing the changes they had made in light of the discussion from the last time the two parties had met. They described the inputs they had incorporated—for example, modifying the research question—or inputs they had rejected—such as including gray literature in the systematic review. Several times, the researchers took a hard stance when evaluating the managers' inputs. One researcher described that she had carefully considered the merit of each idea: "If you [manager] said something that didn't make sense and there wasn't any data to support it, we weren't going to put it in the report just because [you said it]." What the researchers could not do is dismiss the managers' inputs, as, in providing the summary, the researchers needed to make the connection between the ideas in the past and the present joint event.

At other times, both parties connected the present to the past when they explicitly referred to points made in past joint events in working through an idea. Researchers and managers referred to points made in previous conversations, such as "in the last meeting, we were building on the idea . . .," and brought points made outside of the meetings (such as over email) into the conversation. The example above from Project 1 is illustrative: when the researchers introduced the figure with baseball drafting decisions, a manager jumped in to refer to an earlier conversation in which the managers had asked the researchers to include sustainability examples in their framework. The baseball figure in front of them had generated an idea. The manager offered to draw the framework with sustainability examples along the lines of the figure with baseball drafting decisions.

In another example, in Project 2, a manager broke the gridlock between the researcher and another manager by referring to an idea that everyone had resonated with in a past meeting. A manager wanted the framework introduced by the researcher in the present joint event to represent the success factors of the collaboration of competitors (the topic of the project), whereas the researcher was wary of describing success in categorical terms since her data indicated that "success was quite contextual." Another manager referred to a past conversation in which both parties had agreed to designing a playbook that practitioners could use to make decisions. He brought the idea back into the present discussion and asked, "How would the success factors appear in the playbook that we discussed last time?" The reference to the past discussion changed the course of the present exchange. The researcher and the managers reframed success from being defined by "external factors" to being what a playbook user would define for her-/himself.

At other times, managers connected the *present to the future joint events, specifically the project's end*. They focused on the end as an opportunity to think about using the work to make "real" change in organizations. One manager described the end with excitement: "As we got closer to finalization [sic], we started to think about how my manager will only read three or four pages, and this product is 75—what are we going to do? And how do we make it [project outputs] meaningful?" The fact that there were few cocreation moments in some joint events was not as salient as the efforts to move toward the end.

TABLE 3
Devices to Make Explicit the Process in Cocreation

Making Explicit the Temporal Connections	
Connecting the present with prior joint events	"We discussed this a couple of calls ago because we are putting this research in a sustainability context so 'long term' takes a different meaning." (Manager) "I know early on, in an early call, I think we talked about a playbook." (Manager) "I am going back to our last call where you were saying that trust and informality works, and may be successful, while [name of manager] was saying that contracts and governance make them successful. Along those lines is what the horizontal axis is trying to get at." (Researcher) "One of the things we heard in the last meeting was this purpose. There is this call to higher purpose that brings people together, which might be a critical factor in the balance of cooperation and competition. I wonder if these success factors should go beyond just the structure?" (Researcher)
Connecting the present with future joint events	"And so that's why you will see that the most effort among people like myself and other managers is in those final stages prior to publication. And not focused on the 70-, 80-, 120-page document, but really the accessibility part to practitioners." (Manager) "It made it very interesting, the opportunity of making something tangible at the end was very interesting." (Manager) "We knew that there are other meetings planned for the project. We could continue the conversation with people who would come to that meeting." (Researcher) (*Addressing the researcher*) "Are you going to apply some of the examples [to illustrate the framework] in the final report? You can map an example and deconstruct it against all your elements, and sort of show how it works. I have a few examples I can send to you." (Manager)
Making Explicit the Incompleteness in Objects	
Within events	(*Pointing to framework on the slide*) "The one thing that I would really say is that it is really early. This is what I am seeing as I go through the interviews so far, and what struck me in the interviews. It will change." (Researcher) "I have got purpose of the organization there [in the framework], but maybe there is also another row, that is purpose of the, or scope of the, specific collaboration." (Researcher) "... because the research wasn't fully baked yet. The researcher kind of had a draft framework. But it wasn't like she was presenting to us work that was completely done." (Manager)
Across events	"To keep people interested, we showed how the object evolved because it kind of also creates ownership. So they [managers] feel like they have created it, because they have been involved in it frequently." (Researcher) "If I'm just not carving out the time, not necessarily calendar time, but just kind of reflection-noodling time, between those interactions to allow those insights to germinate, and to come up with some other thoughts on improving the frameworks, then it's not gonna work." (Manager) "By having the time between meetings, we had a better idea of the literature, the range of the articles, we could update the categories in the framework, we could revise it [the framework] for the next meeting." (Researcher) "And so someone had brought this star framework and that became an anchor for the managers, we dragged it along for a few meetings, but it was not working. We eventually severed it." (Researcher) "They [managers] love the fact that I have not clung to the old model, that I continue to treat the knowledge as provisional and adapt it as we go along." (Researcher)

Along the same lines, researchers focused on the end of the entire project. One researcher expressed that "the time period of the project was really condensed." As a result, even if nothing tangible came out of the present joint event, the researchers could see how the discussion was helping the project move toward the final outcome. In many discussions, researchers and managers referred to the project output. For example, after a long exchange around a framework, a manager in Project 1 asked to "spend the remaining minutes with any

insights into what the [project] output might actually look like." In fact, several times across the projects, managers and researchers would pause to connect the ideas being discussed to the end, specifically in terms of the project outputs.

By connecting the present with prior events and the end, researchers and managers saw the project in its entirety. When asked about events lacking dialogue, one manager said, "The gap between an academic report and the practitioners' needs is too wide to bridge in one meeting." He went on to describe how it takes a few meetings to learn about the research process, to "gain the ability to understand each other. So there has to be a bit of give and take on each side." As a result, cocreation was not complete at one point in time, but was a series of conversations that built on each other, expressed by a manager as "thinking could be nudged along and for insights to build on one another over time."

A researcher expressed a similar sentiment. He explained that there was no one specific instance in which the managers found the research insights to be practically relevant; instead, throughout the project, it felt like both parties worked toward the end where the research findings could be explained in a practically useful way. However, the task was challenging. As the researcher explained, "It took me a long time to be happy with what we were saying, as both a faithful reflection of data and something that might be relevant to managers." Even when we probed for specific moments, he described the project in its entirety: "There was this general sense where managers in meetings would say 'Yeah, that applies to me,' which allowed us [the researchers] to be prescriptive."

Changing the objects across joint events. The researchers and managers explained that knowledge was created and imbricated not only within a joint event but also between events. Objects provided the connection between joint events. Objects changed within joint events based on the interactions between both parties. Managers could see their insights influencing the shape and content of the objects not just within a joint event but also across events. A researcher explained how the objects in his project changed over time. He brought to the meeting "a standard wheel chart of six steps." Managers responded that organizational reality is more complex. The researcher then undertook the painstaking work between the joint events:

> I had the meeting minutes. I read them, I went back to the literature, and created a different flowchart that had the same six steps but broken up ... It was way messier. But it captured the reality that the managers were sharing in the meeting.

Another researcher described how objects in her project changed such that, at the end, the object represented both academic and practitioner knowledge. She described her exchange with a manager who insisted that the 2×2 figure she had drawn must include a third axis: "At the time, it was like an infuriating comment because it was like 'No, [name of manager] trust me. Like, you don't do three dimensions on paper', right?" She described how the comment stuck with her between the joint events. As a result, she created "a 'wheel' that had a radial with different practices." The radial of the wheel was the third dimension that the manager was looking for. The analytical dimension in the radial represented the researcher's knowledge, while the practices around the wheel represented the managers' knowledge; both parties could see their knowledge coming together as the object changed across the joint events.

Many times, specifically after a joint event without cocreation moments, the researchers decided to not bring the object back into the discussion. As described above, moments that lacked cocreation were characterized by objects that the researchers presented, and the managers understood as being complete. The chevron diagram from Project 1 described above is illustrative. The researchers presented the diagram as being complete. Both parties defended their ideas instead of exploring the ideas together. At the end of the meeting, there was no change made to the diagram. However, the researchers decided to not bring the diagram back in future events.

Similarly, in Project 2, the researcher introduced a framework based on the interim findings from her interviews. Both parties spent their time "on different pages" (Researcher, Project 2). The researcher decided to not bring back the framework in a subsequent meeting; instead, she explained to us how she had spent time between meetings reflecting on the disconnect between her and the managers. The researcher prepared a slide in which each part of the framework was related to an action point in terms of either more data collection or further analysis. She shared the slide in an email with the managers before the next joint event, indicating that, even though the discussion was not dialogic, the manager's inputs had changed the project's trajectory. A manager reflecting on the project commented, "[name of the researcher] really listened to what we [managers] had to say." In both cases, managers could see that, even though their inputs did not modify the object, their inputs mattered because the object did not reappear in the next joint event.

The researchers were not the only ones making changes to the objects between the events. In some cases, such as that of the baseball diagram explained above, managers directly changed the object. Two of the managers in that meeting modified the researchers' framework with sustainability examples that were included in the final report. In other cases, managers did not change the objects, but, in the time between the joint events, validated the ideas in the objects by speaking to colleagues. The managers sometimes applied the ideas in practice, such as in trying the ideas on an immediate problem at work. One manager explained:

> We could have a wonderful meeting [with researchers] and develop all sorts of great ideas around how to build a culture of sustainability and then I could get back to my office and realize, through an observation or conversation with an executive or HR, "Wow, that was great in theory, but there's just no way that that's going to work with us."

Another manager described a similar approach: "Often, I would go back and evaluate whether the ideas would actually work. Will they help me solve an important problem? Are they informing my views?" When the ideas did not resonate, the managers knew that they could share the disconnect in the next joint event.

The managers' efforts between the events did not go unnoticed. The researcher in Project 1 explained, "You could see that some of them [managers] had thought about what we discussed in the last meeting. Some looked for examples from their work." The researcher described a meeting wherein a manager argued that organizational leaders thought longer term (the topic of the project) than frontline employees. The researcher responded that there was little scientific support for this observation, which motivated the manager to "find and send us her company's job description documents to show that there is difference in language around long-term thinking based on organizational levels." The researcher modified the object for the next meeting based on this insight.

Another researcher shared his experience of making "informal contacts with managers in the project" between the events. These discussions were a continuation of the ideas discussed in the joint event, and, as a result, the researchers and managers could see the object and their ideas changing between the events. The researcher explained, "We spoke with individual members of the committee to discuss ideas about sustainability-oriented innovation [the topic of the project] that we couldn't fully discuss on the conference calls." The researcher provided an example of discussing with a manager the radical innovation practices of "front-runner" organizations that were not available in the existing academic literature but were evident in the manager's organizational experience. As a result of the discussion, the researchers decided to include other sources, such as practitioner conference reports, in their literature review to capture these cutting-edge practices. The researchers updated the text in their framework related to radical innovation and brought the revised ideas to the next meeting.

DISCUSSION

Prior studies have argued that bridging research and practice creates value for business and society, but that bridging can be difficult, even impossible, because the differences between research and practice knowledge systems are so vast (Kieser & Leiner, 2009; McKelvey, 2006). In response, some scholars have studied cocreation as events, hoping to identify the reasons for the success or failure of such events. There is a supposition in the literature that the conclusion of the event also concludes the cocreation process, so the events carry all the weight of cocreation (e.g., Beech et al., 2010; Carlsen et al., 2014; Cunliffe & Scaratti, 2017). In other cases, scholars have provided a synoptic view of a longer process, by offering a synopsis of set of events without describing the dynamics between events (Amabile et al., 2001; Van de Ven, 2007). As a result, prior work has provided only a partial picture of cocreation.

In this paper, we applied a process ontology to understand cocreation as a continuous process that is always becoming. Our focus shifts the analysis from synthesizing the structure of the events to revealing the work within and between events, recognizing that cocreation is a process that experiences continuous change and flux. One moment cannot be disentangled from the next, much like a musical note cannot be isolated from a melody and still hold the same meaning. William James captured the distinction between a process approach versus a process ontology as follows:

> What really *exists* is not things made but things in the making. Once made, they are dead, and an infinite number of alternative conceptual decompositions can be used in defining them . . . Philosophy should seek this kind of living understanding of the movement of reality, not follow science in vainly patching together fragments of its dead results. (James, 1909/2019: 138; emphasis in original)

We explored the cocreation process through the lens of a process ontology by studying cocreation projects facilitated by NBS, a Canadian non-profit committed to advancing business sustainability through the knowledge cocreated by researchers and managers. We observed two different projects over approximately eight months each and conducted 67 interviews and five focus groups with participants who had previously engaged in similar NBS projects.

Consistent with prior work, we found that researchers and managers collectively reflected and interpreted information in joint events (e.g., Bartunek, 2007; Beech et al., 2010; Carlsen et al., 2014). Also consistent with prior work, we found that cocreating knowledge within joint events was difficult, rare, and fleeting (Knights & Scarbrough, 2010; Marcos & Denyer, 2012). Yet, we saw that the communities of research and practice continued to engage within and between events to produce knowledge that was both rigorous and relevant.

We argue that a process ontology shifts the focus from explaining cocreation as successful or failed moments to recognizing the processes of imbrication of research and practice-based knowledge over time. Imbrication is always in a process of becoming, even when the progress within discrete episodes is not always evident. Participants' understanding of both each other and the knowledge is continuously shifting to create outcomes that reflect both rigor and relevance. A process ontology not only reflects our paradigm, but also highlights the importance of revealing the process to the participants to assure their continuation in the cocreation efforts.

We identified two devices that emphasized the processual nature of cocreation, both inside the joint events and outside of them. First, in *making temporal connections*, participants saw each joint event within the larger cocreation process, much like people see each minute embedded in an hour, which is embedded in a day, and the day embedded in the year. If one event seemed unproductive, the participants kept the event not only in perspective relative to other events but also in the context of the entire project. Second, *by recognizing the incompleteness of objects*, actors could visualize changes. These two devices helped participants see cocreation as a process, which assured their continued participation in the project, even if they did not always feel there was much cocreation occurring.

Figure 3 illustrates this process. At the beginning, the managers' knowledge and the researchers' knowledge are distinct. By spending time within and across joint events, some of which contained cocreation moments, the two knowledges blend together. The two devices—temporal connections and incomplete objects—help actors see the ongoing process and imbricate their knowledge.

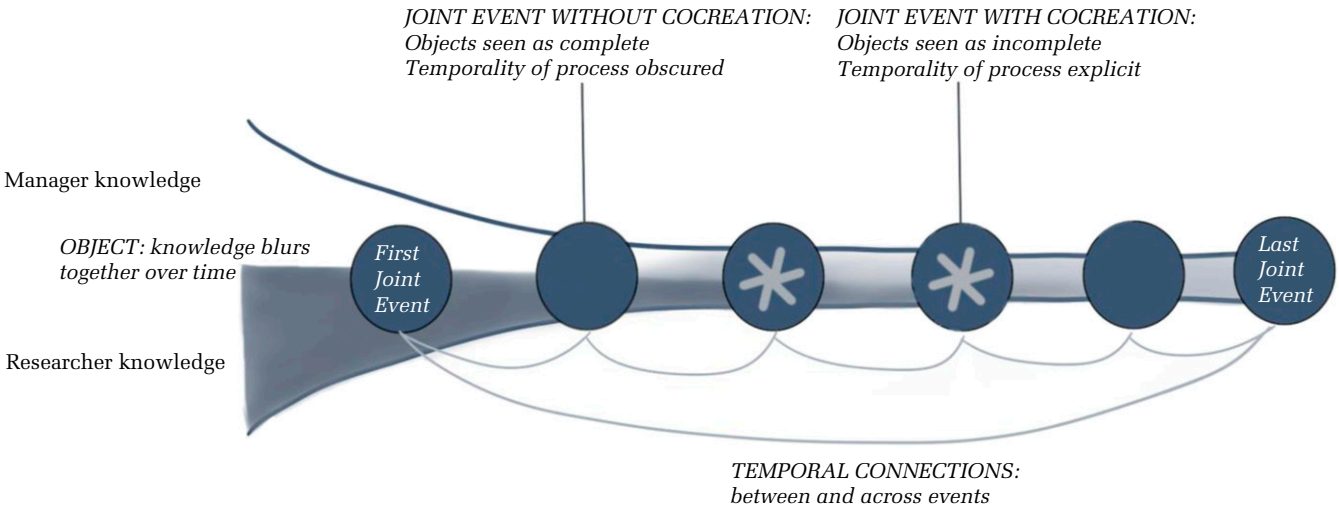
Making Explicit the Temporality of the Process

Each project had a clear beginning and end over an eight-month period with multiple joint events during that period. Participants could then see each joint event as part of a larger process. Actors connected "the contingencies of present" (Emirbayer & Mische, 1998: 963) with past and future events. Joint events that seemed unsuccessful were not necessarily deemed as having been so because actors either reflected on previously productive moments or anticipated future opportunities. An isolated failed interaction did not derail the project since each interaction was seen as a temporary instantiation of a continuous process, similar to a river being seen as the changing flow of water (Langley et al., 2013).

Actors made the temporality of the process explicit in a few ways. The researcher began each meeting by summarizing the discussion from the previous meeting, thereby bridging the previous ideas to the present day's activities. The researcher would then explain the changes to the object or the reasons for replacing past objects with new ones. Schultz and Hernes (2013) described such continuity in terms of oral and material memories that bring the past into the present. In our study, past ideas and words referring to the past events represented the oral memory that brought prior ideas into the present. We will discuss how objects represented material memory in the next subsection.

Further, in developing the ideas in the present event, both parties surfaced the temporality of the process by referring to comments made by the participants in past joint events. Langley and Tsoukas (2010) argued that at the heart of process ontology is the notion that events and experiences in the present hold the seeds of events and experiences from the past. Because elements of the past are available in the present, current dialogue can draw on the past. In our study, actors could connect past to present since they had clear points of reference in terms of past joint events and prior versions of the objects. The time that the actors spent together was "indexical to [these] events, activities, and experiences" (Reinecke & Ansari, 2016: 3). Instead of deriving meaning through "clock time," in which time is marked by the ticks on a calendar and marches

FIGURE 3
Process of Cocreation



forward in a stepwise linear fashion, the process was given meaning through events (e.g., Tsoukas & Hatch, 2001). Actors often referred to past versions of the objects. For example, in Project 2, when a researcher and manager could not agree, another manager referred to the discussion of a playbook from a prior joint event, an event indexed by a cocreation moment of dialogue and connection. Bringing that experience into the present allowed actors to see the present event as a continuation of a prior cocreation moment, thereby facilitating dialogue in the present.

Continuity across events was also achieved by participants connecting the present joint event to the future, especially to the project's end. However, the end was not expressed as a static deadline that paced activities (e.g., Gersick, 1988), but rather as an anticipated future with high expectations of what was possible (George & Jones, 2000; Hernes, 2014). Managers in our study knew that the joint events were intended to create relevant ideas; so, even if the current moment may not have met expectations, they were still open to the possibilities of cocreation.

Additionally, a clear end for the process reminded actors that their interactions were time bound, rather than indefinite, motivating actors to sustain their participation within the process. Ironically, knowledge of the termination of both the process and the joint events helped to build awareness of the process and sustain commitment to the joint events. For example, the managers participated in several joint events wherein they could not engage in dialogue with the researcher—such as the meeting in Project 1 with the chevron diagram, in which the researchers defended their ideas instead of engaging in dialogue with the managers—but the managers described events with no cocreation moments as necessary elements of the entire process. The managers emphasized failed dialogue as part of the process since the "gap is too large to bridge in a meeting" (interviewee).

By connecting the present with the past and future, actors saw the project in its entirety. Even when probed to discuss cocreation within an event, one researcher in our study described the "general sense" of the whole project, and another saw the project as a series of conversations that built upon each other. The passage of time was marked by cocreation moments that surfaced new ideas, which became anchors or events in the actors' minds (Hernes, Simpson, & Söderlund, 2013). Chia (1999) distinguishes between "movement"—for example, an arrow flying through the air—and "trajectory," which is divisible and computed by the distance traveled. In our study, the engineered process that identified joint events and showed a clear project beginning and end provided actors with a trajectory; however, the cocreation moments provided actors with a sense of continuous forward movement through a process. Similar to a melody whose entire duration leaves an impression upon us (Chia, 2002), the cocreation process experienced by our participants was seen as a continuous process punctuated by some particularly salient cocreation moments.

The process was seen as one of duration, not of discrete events.

Making Explicit the Incompleteness in Objects

Actors made the process explicit both through the language and the material of the object (Schultz & Hernes, 2013), specifically in the incompleteness of the objects. The incompleteness of an object was evident in "the ways in which its physical and digital materials are arranged" (Leonardi, 2013: 65) and in the object's use. For example, these objects were based on an analogy (such as baseball) rather than being based only on concepts, indicating that the work is unfinished, or it appeared as a blank slide inviting both parties to "fill in the blanks" (interviewee). As well, incompleteness was made explicit in use (e.g., Orlikowski, 2000). Objects were described as being incomplete by the researchers—for example, when researchers introduced a framework as a work in progress—and were treated as being incomplete by the managers—for instance, when managers pointed to what could be added to the framework. The incompleteness in the object motivated both parties to build something together.

More importantly, such incompleteness was made evident not only within joint events, as prior work has suggested (e.g., Carlsen et al., 2014), but also through the object's evolution across the events. Even though, in some joint events, objects arrived as complete, as long as the actors could see the object changing across time, they saw the ideas as incomplete. Objects became temporary reifications of the larger processes (Langley et al., 2013). Rather than being seen as static representations of knowledge, the incomplete objects reflected participants' changing knowledge, such that actors could see the flux and change in objects.

In explaining change, Tsoukas and Chia (2002) argued that events are static, however big or small they may be, unless we bring to light the movement from one event to another. They contended that "whatever goes on *between* these positions" (Tsoukas & Chia, 2002: 571, emphasis in original) is important to explain change. Objects connect events, as they retain ideas between events, yet they are fluid and can be adapted within and between events. In our empirical context, the objects represented the fluid and temporary instantiations of the knowledge of managers and researchers. Changes in the objects were not seen merely as a transition from point A to point B (e.g., Langley et al., 2013), but rather as a representation of the ideas that continued to evolve between events. The object's temporariness provided actors with the means to see or imagine their own knowledge and potential contribution.

In some joint events, researchers and managers reinforced their understanding of the problem within their knowledge systems and built cognitive bridges to the other's knowledge system. Such progress within a joint event was possible when managers and researchers were willing to both speak and listen (Shotter, 2010; Tsoukas, 2009). The researchers, deemed as experts, took a learning approach, diminishing the hierarchies related to expertise. As a result, all parties assumed an equal position in the knowledge hierarchy and joined the conversation (Bebbington, Brown, Frame, & Thomson, 2007). The researchers expressed uncertainty in their ideas, often manifested in the object, and asked questions of the managers. The managers did not assume that the researchers held privileged knowledge, and were willing to question some of the statements the researchers made. When researchers and managers asked questions of each other, they invited new insights and experiences and did not impose their own meanings and assumptions (Shotter, 2010). In expressing uncertainty, the researchers highlighted what Barley, Leonardi, and Bailey (2012) have described as an inexactness of meaning, which broadens the range of possible interpretations. The researchers' willingness to change the objects encouraged the managers to contribute ideas.

The researchers came out of such dialogic encounters with ideas about how to revise the object, and the managers sought to validate the ideas in their organizational life. Because these objects were drawn simply or crudely, they stayed in the actors' consciousness and provided fodder for thought experiments (e.g., Folger & Turillo, 1999). Each community applied the knowledge created in a dialogic encounter "through further work, in the homeworlds of the two groups" (Beech et al., 2010: 1364). The researchers engaged in "anticipatory work" (Barley, 2015) between the events to modify the object for the next meeting in light of the inputs from the previous one. They juxtaposed the ideas discussed in the meeting with literature and data to modify the objects. The managers used the time between the joint events to talk to their colleagues about the ideas in the objects within the context of their own organizational challenges.

At the same time, non-dialogic encounters were not uncommon. In joint events that lacked cocreation moments, the researchers expressed certainty and both parties made statements, rather than ask questions. The researchers tried to defend their ideas indicating the completeness of the knowledge imbricated in the

objects. The managers passively listened or attempted, unsuccessfully, to change the ideas.

However, even though we did not always see changes to the object within a meeting, the changes that were made to the object at some point in the future showed that the dialogue in the meeting had changed the actors' understanding of the phenomena. In addition, the researchers often did not bring the objects from a non-dialogic encounter back into a subsequent joint event. Such decisions by the researchers signaled to the managers that the manager's inputs were important. Incompleteness in objects, in this sense, was achieved across the events even when an object was seen as complete within the event. Both parties continued to participate in the project as long they saw their inputs in some way attended. Projects in which the researcher "went off on her own" (interviewee) could not sustain managers' participation. These insights bring fully into view the process within events and between events.

Theoretical Implications

Cocreation as process. In this paper, we have suggested that researcher–manager cocreation can be seen through a process ontology, which brings into focus the dynamics among actors within and between events. We found that actors were better able to see and emulate success when the actors themselves were able to also see the *process* of cocreation. Specifically, we identified two devices that helped actors see the process more clearly: making temporal connections between events and recognizing the incompleteness of the objects.

This approach to cocreation with a process ontology contributes to prior research in several ways. First, our approach contrasts with prior cocreation research, which tends to take a more event-based view of time. Cocreation is treated as a discrete event such that the outcomes of each event can be synthesized and analyzed (Beech et al., 2010; Cunliffe & Scaratti, 2017; Greig et al., 2012). The events, then, appear to be stable and repeatable so that researchers can evaluate and design events for success.

The few scholars who have studied and conceptualized cocreation across time (e.g., Van de Ven, 2007) have theorized stage-wise episodes, such as from problem definition to implementation, taking a synoptic view of the cocreation process. Such a stage-wise view of cocreation implies a certain predictability that comes from seeing the process in a linear flow. The scholarly focus turns to the changes in knowledge from one stage to another in a rather predictable pattern. The incommensurability of the two knowledge systems is obscured (McKelvey, 2006; Whitley, 1984).

By assuming a process ontology, we see the process of cocreation. We show that, by highlighting the dynamics of the process, actors are more likely to engage in it and to imbricate knowledge. The devices we identified helped to sustain the process, both within and between joint events. We revealed the passage of time in the cocreation process, which for the actors was indivisible other than cocreation moments that "thrust themselves into the otherwise undifferentiated flow of time" (Hernes et al., 2013: 5).

By theorizing cocreation with a process ontology, we urge scholars to move away from seeing cocreation as a singular event, disconnected events, or event stages. Through a process ontology, scholars are better able to see cocreation by investigating specific researcher–manager interactions and by studying the complex dynamics between researchers and managers within and across joint events. More importantly, a process ontology asks scholars to theorize the devices that afford continuity between the time together and the time apart. These devices provide a fuller picture of cocreation, which includes, but is not limited to, dialogic encounters. Indeed, Beech et al. (2010: 1360) indicated that dialogue at a point in time cannot produce knowledge in finished form; rather, it produces an experience and "subsequent thinking and acting are required." By fully considering the process elements in cocreation, Beech et al. (2010) would study this "further thinking and acting" both in the encounter and outside of it, and would theorize how the actor's experience and actions connect across these temporal instances.

By theorizing how actors make explicit the temporal connections and the incompleteness of objects across events, we argue for reframing the ingredients of cocreation from prior work in order that the elements of process are emphasized. In doing so, we move toward an empirically grounded and accurate understanding of cocreation called for by others (e.g., Kieser et al., 2015)

Imbricating rigor with relevance. Prior research has argued that rigor and relevance are difficult to achieve because researchers seeking relevance can lose a hallmark of rigorous research—their objectivity (McKelvey, 2006). According to this perspective, researchers need to retain distance in order to develop critical insights into the phenomenon being studied (Grey, 2001), and avoid relying on limited evidence and judging the efficacy of the claims by "throw[ing] it on the wall, and see[ing] if it sticks"

(Huff, 2000: 292). In contrast, scholars arguing for cocreation call for a more inclusive process for knowledge generation (e.g., Beech et al., 2010; Cunliffe & Scaratti, 2017; Romme et al., 2015). For example, Bjørkeng, Carlsen, and Rhodes (2014) challenged the approach in which researchers exclude managers from the process of making meaning of the data. Implicit in such assertions is that researchers should suspend how they know, which researchers can find challenging (e.g., Empson, 2013).

A process ontology of cocreation recognizes the continuity across joint events, which brings into view the dynamics between the joint events. Researchers and managers retreated to their respective knowledge systems between the events, which led to both parties deepening commitment to their own knowledge systems, while seeing bridges to the other's knowledge system. Researchers did not sacrifice rigor; instead, in their native knowledge system, researchers engaged in their craft, reasserting their independence and critical distance. Oftentimes, researchers resisted the managers' inputs so that they could maintain rigor.

This process of coming together and retreating to one's knowledge system is, however, not immune to the researcher's monopoly on interpreting data, which cocreation scholars lament. Researchers could dismiss insights from joint events and singlehandedly decide which ideas are worthy of inclusion, creating what Rhodes and Carlsen (2018) describe as one-sided knowledge. However, an important insight from our study is that knowledge continues to evolve within and between events. Researchers felt obliged to address the insights of managers, so they described or showed through the objects what they had done between events. They could not dismiss relevance, but juxtaposed it with rigor. We did not find trade-offs between rigor and relevance, as some scholars have claimed (e.g., Kieser & Leiner, 2009). In recognizing the process as continuous and in flux, researchers were motivated to imbricate relevance into their rigor.

Managers also kept relevance alive when they retreated to their own knowledge system and engaged in thought experiments and conversations that tested the relevance of the ideas. A few times, managers changed the objects, such as in Project 1 when the managers drew sustainability examples based on the baseball diagram, ensuring relevance was imbricated with rigor. This insight challenges Kieser and Leiner's (2011: 21) claim that researchers and managers do not jointly produce knowledge, and that, instead, "researchers do research and managers concentrate on activities in their context." We found that, because managers experienced cocreation as a process, they contributed to the development of knowledge, both in the time together and apart, as long as they saw their insights in some way change the object over time.

Some scholars have argued that there is value in encouraging researchers and managers to each do what they do well (respectively, rigor and relevance) and that the cocreation process should be designed in such a way to imbricate knowledge, not to change either of the knowledge systems (Bansal et al., 2012; Bartunek & Rynes, 2014). Herein, the research–practice gap must not be closed, only bridged, akin to reaching across the divide to shake hands, while keeping one's feet firmly planted in one's own community. Our work aligns with this conversation, but extends it by providing an empirically grounded model that shows how rigor and relevance can be imbricated, rather than compromised.

Boundary conditions. We have focused specifically on cocreation, but some types of knowledge are more suited to a linear flow from researcher to manager through knowledge transfer or dissemination. The climate change policy debate is a case in point. Researchers embrace the role of the expert to definitively argue and defend science. Their focus is on explaining their points of view to a wider community (Rynes, Colbert, & O'Boyle, 2018) and not on cocreating knowledge. In fact, assertions of cocreation could make the climate change debate stall even more, since, at the center of the debate, is the "truth" in science, which can be questioned by a casual observer in the context of cocreation.

Second, our research has focused on NBS's cocreation process, which was structured into a series of meetings embedded within a longer process that had a clear beginning and end. The NBS process highlighted the importance of making explicit the temporality of the process and the incompleteness of objects. Other processes may illuminate additional devices that make the process of cocreation explicit. Our primary contribution is in recognizing the importance of illuminating the process to the actors, which is likely generalizable to many cocreation efforts.

Empirical generalizability. Our insights can be extended to other cross-boundary work, such as the recent interest in interdisciplinary research (Kaplan, Milde, & Cowan, 2017; Leahey, 2016). A study of 18 universities and their sustainability institutes found that their faculties sought multidisciplinary engagement, but found it challenging. One participant noted that differences between disciplines "can

compromise projects before they are even off the ground" (Hoffman & Axson, 2017: 16). Our findings offer insights on how such challenging work of interdisciplinary collaboration can be managed and studied so that research impacts practice. Actors engaging in cross-boundary work can take a process ontology lens to cocreation, similar to the actors in our study. They may find it useful to keep the challenges in perspective of the larger project, and emphasize the incompleteness in objects over time. For facilitators of such work, it is important to remember that one, or even many, failed interaction(s) can still yield successful outcomes. Facilitators of cross-boundary projects may find value in encouraging actors from different disciplines to keep current challenges in perspective, and, where possible, connect the challenges in the present to both past moments of cocreation and potential for cocreation in the future.

CONCLUSION

Our study offers important insights for academics interested in the impact of research on practice. A study of 700 Academy of Management members found that, although 54% of the respondents indicated the inclusion of impact on practice as an important dimension of scholarly impact, the majority of respondents said that the greatest influence of management research has been on other academics rather than on management practice or policy (Haley, Page, Pitsis, Rivas, & Yu, 2017). A few scholars have proposed new epistemologies and tools to integrate academic and practitioner knowledge (Bjørkeng et al., 2014; Orr & Bennett, 2009) and have illustrated how action research can advance such integration (Jay, 2013; Lüscher & Lewis, 2008). Our insights are consistent with theirs. Our study implicitly asks researchers to recalibrate the boundaries of how they define knowledge and who produces it. We validate both academic and practitioner knowledge and suggest that the outcomes can be both theoretically creative and practically impactful.

In an era in which researchers are becoming increasingly specialized and managers find it difficult to know how to apply research, it is arguably more important than ever to study the research–practice exchange (Banks et al., 2016). As we show in our study of NBS, when attempting to solve seemingly intractable issues, such as sustainable development, the most important and challenging opportunity is working across boundaries.

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