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A sense of spacing: Toward a diffractive reading of organizational space

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Abstract

This article explores how a diffractive methodology can enrich research on organizational space and the senses. Through the creation of interferences, a diffractive methodology directs attention to how differences in sensing are created in the ongoing production of space and what the effects of these are. By using examples from an ethnographic study of the Hub, a university-based entrepreneurship space designed to invoke positive "buzz", the article illustrates how a diffractive methodology allows for the exploration of the sensory design of space and how it governs the possibilities of sensing among participants. The article contributes to organizational research by demonstrating how a diffractive methodology can be utilized to explore sensing as a spatial, unstable achievement and by highlighting how differences in the possibilities of sensing can be an important analytical starting point.

Keywords

Diffraction, entrepreneurial hub, intra-action, methodology, senses, space

Introduction

Researchers are paying more attention to how space influences organizational processes, such as learning, control, and leadership (e.g. Beyes and Holt, 2020; Stephenson et al., 2020). Studies suggest that space works through bodily senses by evoking affective responses (Michels and Steyaert, 2017), feelings (Siebert et al., 2017), and understandings of organizational reality (Tyler and Cohen, 2010). The workings of space are shaped by a range of stimuli such as visual (de Vaujany and Vaast, 2016), auditory (Brown et al., 2020), and olfactory (Riach and Warren, 2015) cues that architecture and (sensory) design seek to modify to generate specific experiences and actions (Dale and Burrell, 2008; De Molli et al., 2020; Jørgensen and Holt, 2019). In examining the relationship between senses and space, recent studies have moved toward relational and performative onto-epistemologies (Ashcraft et al., 2009; Beyes and Holt, 2020; Beyes and Steyaert, 2012; Cnossen and Bencherki, 2019). These studies focus on the material-discursive production of space (Knox

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et al., 2015; Ratner, 2020) as an ongoing "spacing" (Beyes and Steyaert, 2012). They, especially, invite us to consider organizational space and the possibilities of sensing as entangled and emergent.

In response to this invitation, researchers have employed innovative methodological approaches, including non-representational research (Beyes and Steyaert, 2012), rhythmanalysis (Nash, 2020), video-based methods (Best and Hindmarsh, 2019; Mengis et al., 2018), and different practices of walking (Beyes and Steyaert, 2013; Michels et al., 2020; Nash, 2018). These approaches highlight the active influence of scholarly fieldwork, analysis, and writing techniques (Petani, 2019) together with "our own affective capacities as researchers" (Michels and Steyaert, 2017: 88) on how the relationship between senses and space becomes available for understanding. Existing literature, however, does not, adequately account for how differences in the possibilities of sensing get made in the ongoing production of organizational space and what the effects of these differences are. By such differences, I refer to situationally specific characteristics or particularities (Dale and Latham, 2015) that highlight "unactualized" or "disabled" possibilities of sensing. In this article, I respond to this lacuna by drawing on diffractive methodologies (Barad, 2007; Haraway, 1997) that have gained growing attention in organizational studies (e.g. Davies and Riach, 2018; Keevers and Treleaven, 2011; Mengis and Nicolini, 2021). The term diffraction comes from physics and refers to "the way waves combine when they overlap" (Barad, 2007: 28) to generate new patterns. A diffractive methodology can be used to build new understandings about the object of study by creating *differences*, for example, by reading various texts through one another, and by considering the *effects* of these differences.

On this basis, I suggest that a diffractive methodology can help us examine and better understand sensing as a spatial and unstable achievement, as it directs attention to *differences* in how the possibilities of sensing[1] materialize. This means differences in how the bodies sensing and sensed are constituted (c.f., Manning, 2009; Thrift, 2008), including the body of the researcher. Examining the effects of these differences is important to further problematize the powerful, yet unpredictable forces that work to govern the possibilities of sensing in organizational spaces, including spatial design (e.g. Jørgensen and Holt, 2019; Michels and Steyaert, 2017). A diffractive approach can further generate an understanding of new and "strange" (Beyes and Steyaert, 2013) ways of sensing. To illustrate the potential of a diffractive methodology, I will share an example from an ethnographic study of a university-based entrepreneurship hub (the Hub), where significant attention was placed on designing the sensory experience of the participants.

The article is structured as follows. To situate my diffractive approach in relation to the previous research, I will first provide a brief overview of how space has been approached as a sensory phenomenon in organizational studies. I will highlight how different understandings of sense and sensing of space underpin previous research approaches in particular. Against this background, I will articulate a diffractive approach as an extension to studies that acknowledge sensing as a relational achievement. Building on the ethnographic study of the entrepreneurship hub, I will provide an empirical illustration of my diffractive approach, discuss it in relation to data collection and analysis, and provide a diffractive reading of the hub as an organizational space. Finally, I will discuss the contributions and encourage researchers interested in space to diffract (as opposed to reflect).

Sensing organizational space

Scholars have adopted various theoretical and methodological approaches to examine how space affects organizational processes through sensory experience. While these approaches overlap significantly, for example, in terms of data collection methods, they are grounded in rather different

views of what is sensed, and how, in organizational space. Thus, they make visible how research approaches perform senses in particular ways.

Physiological and psychological effects

We can first identify approaches that view the *senses as physiological and psychological effects*. Rooted in environmental psychology and ergonomics (Davis et al., 2011; Sundstrom and Sundstrom, 1986), these studies place particular emphasis on how individuals encounter and interact with an organization's physical environment, including various sensory stimuli, and how this affects their emotional or behavioral responses (Davis et al., 2011). What brings many of these studies together is a general interest in revealing connections between specific spatial arrangements and specific employee responses. To illustrate, the classical Hawthorne studies conducted in the 1920s focused on the impact of physical setup on the performance of employees (Roethlisberger Fritz and William, 1939).

More recent studies explore the impact of excessive noise on employees' well-being and productivity (Davis, 1984; Elsbach and Pratt, 2007) and the effects of lighting, temperature, office décor, and physical artifacts on their performance (Davis, 1984; Elsbach and Pratt, 2007). Particular attention is paid to sensory stimuli in open-plan offices (Elsbach and Pratt, 2007; Hedge, 1982; Oldham and Brass, 1979), for example, with regard to stress among employees (Davis et al., 2011). In their study, Oldham et al. (1995) used a quasi-experimental research design to examine the relationship between stereo headset use and employee work responses. The study reveals how employees working in the stereo condition exhibit "significant improvements in performance, turnover intentions, organization satisfaction, mood states, and other responses" (p. 547). In turn, Grajewski (1993) uses the Space Syntax model to analyze employees' responses to the interior layout of the Scandinavian Airlines System's (SAS) head office. Overall, these studies highlight space as a sensory-rich environment that can be modified to generate certain behaviors and emotional states. These studies are, thus, underpinned by an understanding of the senses as physiological and psychological effects.

Methodologically, these studies make use of experiments (Oldham et al., 1995), surveys, and interviews (Oldham and Brass, 1979; Sundstrom et al., 1982) in ways that minimize the influence of the researcher's own participation and effect. Researchers, for example, employ matter-of-fact descriptions of the physical environment or behavioral changes they observe. Davis (1984) writes that the "[p]hysical structure, physical stimuli, and symbolic artifacts can be described with considerable accuracy [and] [t]hese aspects of the setting can even be photographed" (pp. 281–282). More recent studies, however, emphasize that the physiological and psychological effects involve multiple and complex elements such as heat stress and the need for privacy that need to be examined with particular methodological techniques (Elsbach, 2003; Elsbach and Pratt, 2007).

Meaning-making

When the sensory experience of space is read through an interpretative epistemological lens, the focus shifts to how people construct and negotiate its social meaning. This gives rise to an understanding of the *senses as meaning-making*. From this perspective, researchers focus on the interactions, uses of language, and embodied knowing through which people make sense of spatial sensory experience (Martin, 2002; Ropo et al., 2015; Ropo and Höykinpuro, 2017; Taylor and Spicer, 2007; Van Marrewijk, 2011). Studies argue, especially, that buildings, offices, and other sites of organizing materialize meaning (Yanow, 1998) and cultural norms that people read to adjust their (gendered) identity performances (Hirst and Humphreys, 2020; Tyler and Cohen,

2010). Layouts, walls, doors, smells, and sounds, thus, have socially constructed significance that contributes to organizational reality (Gagliardi, 1990; Strati, 1999; Van Marrewijk and Yanow, 2010). While architecture and design seek to modify and stabilize the meaning that a space materializes, employees can challenge and resist these efforts (Wasserman and Frenkel, 2011). Space always tells "a story" (Yanow, 1998), and the plot of this story may be contested by employees (Panayiotou, 2015).

Approaching senses as meaning-making involves acknowledging the experience of both research participants and the researcher herself. The general interest is in how people interpret and make sense of different sensory cues (Dale and Burrell, 2008; Siebert et al., 2017; Van Marrewijk and Yanow, 2010). Yanow (2010) suggests that this requires the researcher to develop a "spatial sensibility" (p. 139) or "a hermeneutic-phenomenological orientation towards the spatial dimension of the material world" (pp. 144–145). Martin (2002), for example, uses participant observation and open-ended interviews to examine how old people's homes were constructed through different sensory stimuli such as sights, smells, and sounds. After the original fieldwork, she returned to the research sites (16 elderly homes) at various times to immerse herself in everyday spatial activities. In a similar vein, Warren (2008) notes that her fieldwork in an office environment "relied heavily" on her "own aesthetic relationship with the research site" (p. 569). Strati (2007), in turn, builds on fieldwork conducted in a sawmill, a roofing firm and a secretarial office to highlight the importance of sensible, embodied knowledge for spatial working practices.

Studies that focus on the meaningfulness of space, and its ability to convey meaning typically use writing styles that make the researcher's own experience and voice explicit (Höykinpuro and Ropo, 2014; Van Marrewijk, 2011; Van Marrewijk and Yanow, 2010; Warren, 2008). This involves, for instance, using personalized accounts that connect the researcher's reflection with those of the organizational participants, such as employees, managers, designers, and clients. This is close to what Van Maanen (2011) calls confessional tales. While some scholars use more traditional reporting styles that rely on the use of interview excerpts (e.g. Wasserman and Frenkel, 2011), others make use of evocative narratives that highlight the emergence of experiences and feelings through sensory engagement (Ropo and Höykinpuro, 2017; Van Marrewijk, 2011). As these examples highlight, the focus on meaning-making shifts attention toward subjective knowing of what is sensed and how.

Relational process

In addition to highlighting the meaning of sensory experience, organizational space researchers examine how sensing materializes or becomes possible in the first place. This approach is underpinned by an understanding of *sensing as a relational process*. In this view, sensory experience is not a "property" of a subject but emerges as a material-discursive process in which heterogeneous elements (e.g. texts, rhythms, technologies, discourses, spatial arrangements) constitute the body that senses and the bodies being sensed, including the body of the researcher (Michels et al., 2020). This shifts the analytic attention away from a "sensory-input model" (e.g. exposing oneself to excessive noise, interpreting the symbolic meaning of a designed building) toward exploring how the capacity to see, smell, hear, taste, or otherwise sense emerges and is shaped as an unstable and situated achievement (Gherardi, 2019; Michels and Steyaert, 2017; Thrift, 2008). Thus, the question is how sensing materializes or is allowed to materialize, and what are the processes and forces that govern and shape this process.

Approaching sensing as a relational process suggests considering research practices as performative (Mengis et al., 2018). In this view, we cannot merely "represent" sensory experiences or space from a distance; instead, our affective capacities as researchers, together with our analytic

frameworks and styles of writing, participate in how sensing organizational space materializes. In developing this line of thinking, Beyes and Steyaert (2012) suggest drawing from human geography and moving toward non-representational theorizing. This means engaging with research that enacts "the simultaneous and excessive coming-together of multiple trajectories along (and exceeding) the full range of the senses" (Beyes and Steyaert, 2012: 53).

In this spirit, Michels and Steyaert (2017) map the planning, preparation, and enactment of a music event in Berlin. They show how this event intervenes in the urban atmosphere by connecting performances of music with everyday urban life. Drawing from a detailed analysis of video-recorded materials, interview transcripts, and various other documents, the authors present an account that connects empirical materials with their own affective responses and feelings during the research process. In turn, Nash (2020), shows how Lefebvre's rhythmanalysis provides a useful sensory method through which to engage with and examine the rhythmic unfolding of organizational place. Rather than merely observing or recording spatial rhythms, rhythmanalysis requires the researcher to attend to these rhythms and to draw upon the multiplicity of the senses. This method involves, especially, letting the rhythms grab and using the body as a kind of "metronome" (Nash, 2020). Other studies make use of different practices of walking, such as *derive*, or an unplanned journey (Beyes and Steyaert, 2021; Michels et al., 2020), and *flânerie*, or an act of strolling (Nash, 2018). These methods recognize that the self, and the ability to sense are intimately interconnected with how space is materially and discursively produced.

In this line of work, researchers use expressive, narrative, and poetic styles of academic writing to express the multiplicity and incompleteness of space. Jakonen et al. (2017) present their ethnographic materials in the form of three narratives, each focusing on a particular coworking space. This illustrates how various elements—"the discourses, practices, material culture, and meanings of each research site" interconnect (p. 238). Other scholars develop new terms and linguistic expressions to better acknowledge the dynamic unfolding of space as a sensory phenomenon. For example, they combine the notion of spacing with other process-oriented notions to create new integrative concepts such as "spacing leadership" (Ropo and Salovaara, 2018).

However, while existing organizational space literature has increasingly acknowledged sensing as a relational process, it has not yet adequately accounted for how differences in the possibilities of sensing get made in the production of space and what the effects of these differences are. Yet, focusing on this is important to better understand those sensory possibilities that have not yet "actualized" or are being "disabled" by how space is being produced. Examining these differences is also crucial for problematizing the forces and processes that govern the possibilities of sensing in contemporary organizational spaces (De Molli et al., 2020; Jørgensen and Holt, 2019). With these aspects in mind, I now turn to diffractive methodologies.

A diffractive methodology

Organizational researchers have increasingly employed methodological approaches rooted in relational ontology and performative epistemology. These approaches suggest that entities such as people, texts, sensations, and spatial arrangements are not ontologically separable but mutually constituted (Cooren, 2020; Dale and Latham, 2015; Huopalainen, 2020; Iedema, 2007; Nyberg, 2009; Orlikowski and Scott, 2014; Ringrose and Rawlings, 2015). In doing so, they challenge the idea of "a knowing subject" who represents what is known about the phenomenon under study. They, instead, propose that the researcher is always entangled with her object of study in complex ways (Gherardi, 2019). In taking these methodologies further, researchers have used diffraction as a methodological approach (e.g. Keevers and Treleaven, 2011; Mengis and Nicolini, 2021; Visser

and Davies, 2021). In this article, I am particularly interested in how a diffractive methodology can enhance research on senses and organizational space.

The notion of diffraction is founded on the feminist philosophies of Haraway (2007) and Barad (2007). As a methodology, it invites us to consider knowledge as an interference pattern, not as an image of an object of knowledge, but as an ongoing "intra-action" and mutual constitution between both the object of knowledge and the knowing subject. Instead of describing differences, a diffractive methodology involves being attentive to how differences get made and how these differences matter. Borrowed from physics, the term diffraction refers to an interference that emerges when waves in, for example, the sea overlap and generate new patterns that develop in many directions (Barad, 2007). While "reflection" prioritizes the processes of the human mind and refers to the mirroring of reality as a more-or-less stable phenomenon (Lenz Taguchi and Palmer, 2013), diffraction is about engaging in the world and the differential becomings of it (Barad, 2007).

Taking a diffractive approach, thus, requires acknowledging how we as researchers, through our (gendered, racialized, and classed) bodies, fieldwork techniques, and conceptual tools, intra-act with various other human and nonhuman bodies in the ongoing constitution of spatial reality (see also Gherardi, 2019; Mengis et al., 2018). Instead of extracting representations from this reality, a diffractive approach suggests focusing on the performative creation of interferences as an analytical starting point (Barad, 2007). This means considering not only the various intra-actions that produce the spatial reality or the consequences of these intra-actions, but also how things and phenomena can materialize differently.

From a diffractive perspective, sensing materializes as a situated and unstable accomplishment out of a wide range of possibilities. It emerges in the moment of encounter between various human and nonhuman agents, including the researcher's capacities to affect and be affected. Potential expressions of sensing then become actualized in these encounters, for example, in the form of an auditory experience. The capacity to sense does not, however, pre-exist these encounters. A diffractive approach, thus, focuses less on reflecting on specific sensory experiences or how their meaning is negotiated than on considering how differences in the possibilities of sensing get made and what the effects of these differences are. How do these differences, for example, open new ways of sensing in organizational space?

To illustrate the usefulness of diffractive methodologies for organizational space research, I will use an example from a recent ethnographic study (2013–2017) I conducted in a university-based entrepreneurship space (hereafter the Hub). I will discuss ideas and suggestions regarding diffractive fieldwork/data collection and reading/writing up data. I will also provide a diffractive reading of the Hub. The empirical context of the Hub provides a particularly interesting example for examining the relationship between senses and space. The Hub is a working and meeting space for early-stage entrepreneurs, faculty, and students interested in entrepreneurship. It is designed with the intention of creating a local "hotspot" that spreads positive entrepreneurial "buzz," attracts talent, and fosters new business initiatives. The sensory design of the Hub involves not only the critical consideration of the sensory stimuli (furnishings, ambient conditions, equipment, etc.) but also the "story," "brand," and the "feel" of the space.

Fieldwork/data collection

A diffractive fieldwork and data collection involve creating differences and considering their effects. Recognizing the sensory and affective capacities of our bodies (Thanem and Knights, 2019), we can learn to attune to and acknowledge moments of diffraction in which, for example, the flow of space becomes altered or the possibilities of sensing become somehow different. These moments can include surprising or "uncanny" encounters (Beyes and Steyaert, 2013) that force us

to feel in new ways (Fotaki et al., 2017). They can also include moments in which we as researching agents influence the possibilities of other participants to feel (Gherardi, 2019), for example, by expressing hesitation or excitement toward the situation we are part of (Katila et al., 2020). The key is to think of fieldwork and data collection not as capturing representations of how "things are" but as an ongoing co-creation of knowledge within intra-actions between multiple human and nonhuman bodies (Barad, 2007). Among other data collection practices, a diffractive approach urges us to rethink our practices of interviewing. It especially suggests that interviewing can be understood as an *intraview* (Kuntz and Presnall, 2012) or as the mutual constitution of questions, responses, comments, and materialities.

In addition to attuning to and acknowledging the moments of diffraction within fieldwork and data collection, a diffractive methodology focuses on their effects. For example, what does diffraction do with regards to atmospheres, boundaries, or rhythms of spacing? What possibilities of sensing it produces or "cuts out"? Focusing on these effects of diffraction builds on the idea that our sensory experience always emerges from a situated material-discursive engagement with the world we encounter (Gherardi, 2019). Thus, senses are more than just physiological tools that capture pre-existing stimuli. They, instead, enable us to affect and be affected by various human and nonhuman elements in complex ways. This means that the specific sensory perception we experience and interpret as a feeling actualizes only some of the world's innumerable potentialities. Differences in how spacing unfolds imply different potentialities for sensing.

While there is nothing new in the idea that we as researchers "use" our bodies to gain sensible-aesthetic knowledge (Strati, 2007; Yanow, 2010) and that our positionality affects our research (Manning, 2018), a diffractive methodology places specific emphasis on how knowing is embedded in situated intra-actions and how differences within these intra-actions can produce new insights. For example, Mengis et al. (2018) elaborate on how using different video recording techniques to examine the same spatial situation allowed them to notice and pay attention to specific spatial relationships that they could not otherwise see. Rather than merely comparing the outcomes of different types of data collection practices, the authors concentrate on what emerges from their relations and tensions. While some relational and performative studies on organizational space have already experimented with similar methodological ideas (e.g. Michels and Steyaert, 2017; Nash, 2020) a diffractive approach extends these studies. Specifically, it places emphasis on *enacting* "flows of difference" (Lenz Taguchi and Palmer, 2013: 676) and considering the effects thereof.

When conducting the fieldwork at the Hub, I attended several events, workshops, and programs that promoted, among other things, "entrepreneurial thinking" and "startup culture" within the university context. I, for example, attended a program designed to facilitate the business development processes of early-stage entrepreneurial teams working with a range of different business ideas. The program consisted of various meetings, co-working sessions, mentoring events, and "demo day" sales pitch events. After participating in these events, I oftentimes found myself feeling headache and nausea, almost like a hangover. I noticed that this sensation was often connected, especially, to the loud (electronic) music played at the program events with the intention of, for example, "getting the energies up" in a workshop or creating "excitement" before the demo day sales pitches. In the language of my diffractive analysis, the sound waves emerged as important material agents that interfered with my body in ways that sometimes increased but mainly decreased my possibilities to sense and conduct empirical research. Entangled with this experience of "hangover," I chose to video record subsequent events to create a better understanding of them—thereby making a cut between recordable and other sensory experiences.

Reading/writing up data

With regards to empirical analysis, a diffractive methodology shifts attention to how intra-actions between different research materials and the researcher give rise to differences that matter. This involves "reading insights through one another in ways that help illuminate differences as they emerge: how different differences get made, what gets excluded, and how these exclusions matter" (Barad, 2007: 30). Engaging in different sensory data intra-actively, then, typically takes place after the fieldwork and generation of research data. Instead of giving priority to any specific type of data or register of sensation, a diffractive approach requires placing the data into conversation with each other and considering the patterns of diffraction that emerge (Lenz Taguchi and Palmer, 2013). While these data can span over particular time-fragments, they are understood to relate to each other, not as separate parts but to unfold as elements entangled with each other. New interpretations and patterns emerge from these encounters between different research data, and by considering what each of them includes and excludes. This involves, for example, looking for "creative and unexpected provocations" (Murris and Bozalek, 2019: 873) rather than using a binary logic of comparing the different data to each other as separate entities.

Reading and writing up data diffractively encourages us to think about ourselves as active researching agents; actors conducting the intra-active reading and enacting patterns of difference. As Barad (2014) aptly notes, "[t]here is no 'I' that exists outside of the diffraction pattern, observing it, telling its story" (p. 181). This builds on the central premise of diffractive methodologies, according to which the object of knowledge and the knowing subject always constitute each other; "what can be lived and sensed by researchers, and how data makes us as researchers" (Gherardi, 2019: 743). This premise implies that we as researchers are "not fully formed, pre-existing subjects, but as subjects intra-actively co-constituted through the material-discursive practice that we (...) engage in" (Barad, 2007: 168). The analysis of empirical materials can, therefore, be understood as an embodied engagement in which the researcher is affected by the data through senses that register the flows of images, texts, smells, sounds, tastes, touches, and feelings (Lenz Taguchi and Palmer, 2013; Lenz Taguchi, 2012). The focus is on what data "does" in relation to our bodily capacities or how it interferes with our sensibilities. Some researchers refer to these "doings of data" as data "hot spots" that "glow" (MacLure, 2013 in Ringrose and Renold, 2014). A diffractive analysis, thus, involves embodied engagement with the research data or "a becoming-with the data as researcher" (Lenz Taguchi, 2012: 265).

The ways in which we come to acknowledge, for example, the olfactory qualities, soundscape, and smells, among other aspects of organizational space, depends not only on the specific research data we generate but also on the differences that get made through our embodied engagement with this data. This suggestion moves beyond reflecting on how our gendered, racialized, and classed bodies shape our research toward focusing on how we as material bodies are, on one hand, transformed in encounters with the materiality of the research data and, on the other hand, choose what to focus on and how to write up the data. As Lenz Taguchi (2012) citing Deleuze notes, "[w]e must activate the sensibility of all our embodied faculties" (p. 272). This means that a diffractive approach is less concerned with representing an empirical reality that has "taken place before the act of representation" than with enacting multiple and diverse potentials that emerge from the encounters with the researcher and the research data. In this endeavor, researchers have engaged in evocative and performative styles of writing (Gilmore et al., 2019; Huopalainen, 2020; Katila, 2019).

Reading and writing up data diffractively helped me and my colleagues[2] to understand the multiplicity of registers of sensation through which the Hub operated. We organized meetings during which we read the research materials to each other, discussed emerging insights, and engaged in

collaborative writing. In one of these meetings, organized at the home of one of my colleagues, we sat around a big dinner table with our laptops and edited the manuscript draft together. At one point, we chose to go back to the video recordings I had generated during the fieldwork to check details about the spatial arrangements of the Hub. I turned the volume up and opened a video file, one recorded in the middle of a hectic business idea development workshop where several entrepreneurial teams were brainstorming in a shared space. Almost immediately, after opening the file, one of my colleagues leaned backward, closed her eyes, and expressed that she did not need or want to see the video for another time; just hearing the chaotic soundscape of loud discussions, background music, participants shouting over each other, and the facilitator trying to get his voice heard was painful enough. Despite its unexpected and uncomfortable character, this embodied encounter in which the research data interfered with our analysis made us think and write about the affective character of the Hub space in a way that would have been very difficult otherwise.

A diffractive reading of the Hub

In the following, I will provide a diffractive reading of the Hub as an organizational space. This involves reading various research materials (field notes, interviews, and transcripts of video recordings) through one another to enact differences. My purpose is to highlight how the diffractive approach led me to explore the sensory design of the Hub—understood as the shaping of the sensory engagement in space to invoke specific outcomes (De Molli et al., 2020)—as a force governing the possibilities of sensing among participants. The diffractive approach, especially, led me to consider how the sensory design (as thought) encouraged the participants to sense in ways that facilitated fast-paced entrepreneurial action and risk-taking. Simultaneously, the sensory design cut out alternative sensing possibilities, especially those that would enable vulnerability. In the narratives below, I will use quotes (in *italics*) from the participants at the Hub that serve as an "interference" with the sensory design of the space.

The diffractive reading of the Hub calls our attention to the experiential promotion of entrepreneurship in the university context through the creation of "entrepreneurial spaces" or "hotspots" for startups. Increasingly common on university campuses, these spaces are typically designed to push and pull people together, facilitate serendipitous encounters (c.f., Jakonen et al., 2017), and attract business potential and "the next big thing." These are spaces where students, freelancers, artists, and other "creatives", find their way to work, get inspired, hang out, and party with other like-minded people. Like myself as a junior academic, together with numerous other millennials exposed to precarious conditions of work, many of these people seem to have understood that being associated with an entrepreneurial "spirit" is the only way to cope with the competitive and uncertain labor market.

> Electronic music resonates in my chest and with the walls of an old brick building making its window glasses vibrate. Inside the Hub, behind a big black curtain, dark and moist air blends with green, yellow, and red spotlights, bodies moving in small groups close to each other, beer bottles hitting each other, and a smell of something sweet in the air. Trendy sneakers, entrepreneurship society hoodies, and skinny jeans are everywhere. The rising heat pushes bodies towards the bar and refreshments. An entrepreneurial hub or a nightclub? People smiling and laughing, repeating the startup jargon, drinking, getting ready for the sales pitches, waiting to be entertained and amused.

> *We started our own firm quite quickly after an intensive incubator program. We were very excited. But there has been quite a crash after the energetic atmosphere of the Hub. Getting the first customers has been super hard*, a student entrepreneur tells me.

> A business angel, startup mentor, and investor show up. Notably older than anyone of us. At the backstage, young entrepreneurs getting ready; rushing around, putting the hoodies on, adding make-up and hairspray, going through the details one more time; the right postures, the relaxed movements, the smiles towards the jury, the hand gestures, the eye contacts, the slides, the scalability, the MVP, the ROI, the exit plan. "OK, let's go!!"
>
> *We went to a business consulting event and the feedback we got was super harsh. They said we've done pretty much everything wrong with our business. They advised us to have a year off from our studies and to fully focus on the firm. I just feel very tired right now*, another student entrepreneur shares with me.

Sensing emerges in and through complex intra-actions between heterogeneous bodies. The smells, sounds, feelings, temperatures, and shapes have no predefined character, but they are the materialization of complex material-discursive encounters. At the Hub, the possibilities for sensing are (temporarily) stabilized through careful sensory design meant to promote entrepreneurial action. This sensory design alters how, for example, the lighting and background music—resembling a nightclub—become available for the participants to sense. The sensory design works on both those inside and outside the Hub space to signal an elite and heroic status for those who belong inside, behind the big black curtain, on the main stage, in the spotlight. However, when this is read through quotes from the participants' "inside," a new pattern emerges; vulnerability for which there is little room in the spotlight. What appears to be joyful at first, spontaneous and "fun" diffracts into patterns of designed relations, limiting the possibilities to sense, affectively respond, and feel. What first emerges as collective and communal becomes individualistic and competitive. The possibilities of sensing become materialized in a *specific* way out of an innumerable set of potentialities. Looking for these particularities entails reading the data as it moves (Gherardi, 2019), engaging with the flow of encounters, and linking and connecting elements in ways that enact new insights.

> Another sales pitch night is about to kick off. Teams waiting for their turn to sell ideas, music played to create the right mood, the audience is smiling and chatting while sipping craft beers and trying to find their seats. *We have this one customer now, but I don't know if we are going to get any money out of it*. Just before everything is about to start, a group of people stand up and assemble in front of the space, perform an important national song, then quickly disperse. "[T]hy daylight now is dawning / the threat of night has now been driven away. The skylark calls across the light of morning / the blue of heaven let it have its sound." People in the audience are tearing up. "This space has a very clear purpose. It produces solutions to the most pressing problems of the world," the pitch night organizer reminds us. *I can't remember when I bought new clothes last time. I don't know how I'm going to pay my rent next month.*

Different from critical reflection, a diffractive approach does not seek to mirror spatial reality as a more or less stable phenomenon from a distant position (Barad, 2007). Instead, it is an event of knowing things differently through intra-activities (Lenz Taguchi and Palmer, 2013). A diffractive approach can, thus, help dissolve, alter, and escape hegemonic orders, established boundaries—and sensory designs—and help open new possibilities for sensing and feeling (vulnerable). Such shifts are not, however, completely random. They do not produce a formless space of infinite sensing possibilities. Rather, new possibilities emerge from new interconnections between heterogeneous elements, including artifacts, concepts, texts, and the researchers; even the smallest unit of existence can play a crucial role (Barad, 2007), as the brief quotes from the participants above highlight (*in italic*). The new pattern intervenes, interrupts, and forces us to pay attention—and it is in and through this event that something new can emerge new sensorial perceptions, feelings, understandings, actions, and possibilities. Perhaps possibilities to sense an "entrepreneurial space" differently.

Discussion

In this article, I have examined how a diffractive methodology can enrich research on senses and organizational space. I first highlighted how methodological approaches used in existing organizational space research are underpinned by different understandings of what is sensed and how. These approaches make sensing understandable either as physiological and psychological effects, meaning-making, or a relational process. While recent studies have increasingly moved toward the relational process view, they have thus far failed to account for how differences in the possibilities of sensing get made in the production of space and what the effects of these differences are. Focusing on these differences, or "particularities," is important to problematize those forces that shape our possibilities of sensing (Dale and Burrell, 2008; De Molli et al., 2020) and to open new sensings of space. Against this background, I turned to diffraction as a methodological approach (Barad, 2007; Haraway, 1997). Through a study of the Hub—a university-based working space for early-stage entrepreneurs—I illustrated the usefulness of a diffractive methodology by reading various research materials through one another to enact differences in how this space can(not) be sensed.

My analysis of the different approaches to senses and organizational space highlights the different roles of the researcher. For example, the studies assuming senses as physiological and psychological effects seek to minimize the influence of the researcher by developing research designs that protect objectivity (Davis et al., 2011). Studies treating senses as meaning-making, in turn, emphasize the researcher's active participation. In these studies, scholars make use of their own sensory perceptions and embodied experiences to build knowledge about the meaning(s) of space (Brown et al., 2020; Warren, 2008). Finally, understanding sensing as a relational process places emphasis on how the researcher, including her sensory capacities, is constituted within the material-discursive process of research (Michels et al., 2020; Michels and Steyaert, 2017). A diffractive methodology develops this latter view further by inviting us to consider how new sensings of space are made possible through research.

Through this article, I contribute to existing research on organizational space. In this line of work, researchers have recently argued for a relational and performative approach to space (Best and Hindmarsh, 2019; Beyes, 2010; Beyes and Holt, 2020; Beyes and Steyaert, 2012; Ratner, 2020; Vásquez and Cooren, 2013) and have made use of innovative sensory methods such as rhythmanalysis and different practices of walking (Beyes and Steyaert, 2013; Beyes and Steyaert, 2021; Michels et al., 2020; Nash, 2018, 2020). My work extends this line of research by showing how a diffractive methodology can be used to explore the sensing of space as a relational and unstable achievement. This adds to existing studies in two main ways. On one hand, it emphasizes how differences in the possibilities of sensing get made. On the other hand, it highlights how focusing on these differences can provide a more rich, nuanced, and complex understanding of space as a processual and performative phenomenon.

In the illustrative example, I used quotes from research participants to interfere with the careful sensory design of the Hub to enact sensory differences. These differences expressed how the sensory design, including the colorful spotlights, upbeat background music, and lyrics of motivational songs, actively governed how the bodies sensing and sensed were allowed to materialize at the hub. The diffractive approach further allowed me to highlight the difficulties, or impossibilities, of sensing the Hub space in ways that would recognize the participants' vulnerability. In effect, my diffractive analysis gives rise to new questions. For example, how can encounters in spaces for (growth-oriented) entrepreneurship trigger new or alternative ways of sensing? What kinds of spatial interventions (Michels and Steyaert, 2017; Skoglund and Holt, 2021) are required to disrupt the dominant possibilities for sense?

This article further extends an emerging line of research, developing methodological approaches for organizational studies by drawing on the work of Barad. Researchers have, for example, suggested ways to translate ideas such as diffraction, intra-action, and material-discursive practice into data collection and fieldwork practices (Davies and Riach, 2018), visual and video-based research methods (Mengis et al., 2018; Mengis and Nicolini, 2021), and writing with our animal companions (Huopalainen, 2020). These works decentralize human agency and shift the analytic attention to the complex intra-actions that materialize research and researcher bodies. My article adds to these studies by highlighting how differences in the possibilities of sense can serve as important starting points for spatial analysis of organizing. I have highlighted, for example, how the electronic background music played at the Hub interfered with my ability to sense and act during the fieldwork, resulting in a hangover-like sensation that later became an important starting point for my empirical analysis. In addition to recognizing the researcher as the "instrument" or "metronome" of sensory research, it is important to consider how the researcher's sensory capacities become different in and through the process of research—and how these differences can lead to new insights. As previous studies on the consequences of doing qualitative research have noted, performing research necessarily makes one different: It involves feeling a wide range of emotions, considering one's sense of self, and questioning what one is doing (e.g. Sergi and Hallin, 2011). My work enriches these analyses by placing emphasis on the ever-changing human-nonhuman entanglements in which our sensing (dis)abilities are found.

Conclusion

This article highlights the importance of "re-thinking" methodological approaches used in organizational space research to create a better understanding of the multiple registers of sensation on which space operates. This is important not only for the planning of more inclusive and accessible working spaces but also for imagining and enacting the sites of organizing differently. Haraway and Barad, among other feminist writers, remind us that we, as researchers, are "response-able" for what materializes in research events. This requires not only being responsible in our research practices but learning to find responses and working collectively to open new possibilities (to sense, feel, and act). As researchers of organizational space, our involvement in the world unavoidably enables and encourages certain responses while simultaneously disabling others.

Therefore, through this article, I would like to encourage researchers interested in organizational space to critically evaluate the (unintended) sensory effects of their methodological choices. For example, what kinds of possibilities to sense these choices enact? Perhaps more importantly, I would like to invite these researchers to consider how their practices could produce a difference in any dominating pattern of spacing that limits or even prevents the emergence of new and alternative sensings of space. This is particularly urgent in the context of the ongoing flexibilization, deregulation, and precarization of work where the possibilities to sense are increasingly shaped by, for example, algorithmic technologies, blended boundaries, intensifying rhythms, and the need to bring the whole individual into the workplace including the sensory and affective capacities.

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Notes

1. Sensing is here understood to be a relational process by which the bodies that sense and the bodies that are sensed are co-constituted (e.g. Manning, 2009). A feeling, in turn, is viewed as a sensation that is subjectively felt, interpreted and labeled (e.g. Shouse, 2005).
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