



Organizational Construction and Interdisciplinary Identity in a New Health Care Organization

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Abstract

The authors examine the organizational construction of an interdisciplinary brain care center via ethnographic observation of vision and mission-building meetings and semistructured interviews with organizational leaders. The authors find that success in interdisciplinary work at this organization is determined by three factors: (1) a “multilingual” leader who is able to both manage and traverse boundaries between disciplines, (2) a clear and compelling process of problem formation that resulted in a vision and mission that were shared by all participants, and (3) a team whose members have idiosyncratic career paths and identities not firmly rooted in a single scientific discipline or profession.

Keywords

interdisciplinarity, organizations, health care, boundary actors

Brain health is one of the most complex areas of medical care. Yet mental health care is one of the most fragmented segments of a deeply fragmented American health care system (Warshaw et al. 2003). Mechanic (2012) urged health organizations to take advantage of an open policy moment created by the passage of the Patient Protection and Affordable Care Act to seek integrated, comprehensive solutions to complex mental health problems, calling especially for the creation of “interdisciplinary care teams” focused on integrating multiple types of service providers, using innovative technologies and rapidly deploying novel therapeutic interventions. In this article we examine just such a successful team, composed of professionals with a highly diverse range of disciplinary backgrounds and professional identities, ranging from sociologists to gerontologists to systems engineers to visual design professionals. Using the framework of “boundary actors,” as developed out of the literature of “boundary objects” (Keshet, Ben-Arye, and Schiff 2013; Star and Griesemer 1989), we ask how an organization formed entirely of potential “boundary actors” creates a functioning interdisciplinary organization within the context of a fragmented field. We argue that the successes of this organization are supported primarily by three characteristics of the organization and its people: (1) a “multilingual” leader who is able to both manage and traverse boundaries between disciplines, (2) a clear and compelling process of problem formation that resulted in a vision and mission that were

shared by all participants, and, most important, (3) a team whose members have idiosyncratic career paths and identities not firmly rooted in a single scientific discipline or profession. This suggests that contrary to much previous research, strong disciplinary anchoring is not always a necessary component of interdisciplinary success and, further, that career incentives that prize disciplinary success may be harmful to interdisciplinary research and practice.

Factors in Interdisciplinary and Interprofessional Success

Health care research is focused on both interprofessional work and interdisciplinary work. Interprofessional teams, as the name implies, are teams that bring together team members of multiple professions, such as doctors, nurses, social workers, and academic researchers. Interdisciplinary teams, on the other hand, bring together teams of people who may share a professional identity (e.g., “academic researcher”)

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but have backgrounds or positions in different scientific disciplines. This is a potentially important distinction, given that team members divided by discipline, but not profession, may share important professional knowledge and dispositions. Those divided by profession may have different relations. For instance, particularly in the health care field, those divided by professional boundaries may be both hampered and enabled by clear jurisdictional lines between professions. We draw, however, on both literatures here because our team in question is both interprofessional and interdisciplinary (see description of the organization later).

Much of the extant research on interdisciplinary and interprofessional teamwork in health care focuses on a handful of factors, three of which are closely mirrored in our case: the ways in which leaders manage boundaries, a shared mission and vision, and characteristics of team members that support successful interdisciplinary teamwork.

Factor 1: Leaders and the Management of Boundaries. Leadership in interdisciplinary groups is important for membership, mission, team interaction, dynamics, and outcomes of the organization (Solheim, McElmurry, and Kim 2007). Additionally, it is important for the management of boundaries, which delineate professions and disciplines (Chreim et al. 2013). Professional boundaries can serve to hinder the formation of interdisciplinary health care organizations as a result of power disparities and differences in professional skills and jargon (Hall 2005). Effective leaders can bring these disparate groups together when they would have otherwise stayed apart. Leadership of such groups involves “the practices of influencing how boundaries are drawn and managed” (Chreim et al. 2013:204). In health care, these boundaries may include one’s intrapersonal boundaries as well as boundaries between leadership and clinical roles, between leadership positions and team members, among different professions, between client and professional, and between team and environment (Chreim et al. 2013). The “boundary work” that leaders do may work to build, destroy, or blur boundaries (Gieryn 1983) or to negotiate, confirm, or contest boundaries (Chreim et al. 2013).

In an effort to promote cohesiveness within the organization, leaders of interprofessional organizations must mediate between professional groups that may interact infrequently (Keshet et al. 2013). Leaders who are *boundary actors* may contribute to a better management of boundaries between disciplines and professions than those with unitary disciplinary identities. Boundary actors are “people who function in multiple social worlds, translating and mediating between two or more social communities, and who may develop and maintain coherence across intersecting social worlds” (Arnon et al. 2018:97). Leaders who engage in boundary crossing improve the success of an organization (Morse 2010) by encouraging increased communication among different professions and disciplines (e.g., Keshet et al. 2013), decreased interprofessional competition (e.g., Solheim et al. 2007), or

opening up decision making to all team members (Chreim et al. 2013). Furthermore, ineffective boundary management has been shown to lead to a hardening of disciplinary boundaries and a lack of development of interdisciplinary identities (Brown, Crawford, and Darongkamas 2000).

Generally, effective communication is important for the success of an organization (Morgan, Pullon, and McKinlay 2015), and it is an important leadership competency (Chreim et al. 2013). Effective communication serves to break down boundaries between different viewpoints (Suter et al. 2009), allowing improved cohesion and, ultimately, the effectiveness of the organization. This feature of communication is critical for leaders who are serving as boundary actors, as their primary function is to open and bridge various boundaries, such as those between professions or knowledge bases, to bring together various viewpoints so that the various components of the organization may work together rather than operating in isolation (Keshet et al. 2013).

Marginality, further, is a common feature of boundary actors, who often exist at the boundaries of these multiple worlds and move between them to bridge communication barriers that may exist between these worlds (Huzzard, Ahlberg, and Ekman 2010). Their multiple memberships allow them to interact with multiple disciplines (Akkerman et al. 2006). This can also allow them cross boundaries for the purposes of enhancing collaborative effort and holding disparate professional groups together for the success of the organization (Huzzard et al. 2010; Keshet et al. 2013). Profession-specific language can often be attributed to the various boundaries that exist between professions and fields of knowledge (Hall 2005). One of the roles of boundary actors, whether they are in leadership roles or not, is to translate between disciplinary languages to prevent communication barriers that may impede the organization process (Hall 2005; Keshet et al. 2013). Traditional disciplinary and professional career paths tend to foster the adoption of disciplinary-specific language and marginalize those who use the language of other disciplines.

Factor 2: Shared Mission and Vision. A shared mission and vision are critical to the success of an interdisciplinary organization (Allen 2009; O’Leary et al. 2012). Teams with clear objectives are reported to be more effective at achieving their goals (Øvretveit et al. 2002). Solheim et al. (2007) wrote that “clearly defined, realistic goals that are collectively developed, and reflect a commitment to client-centered care are key to effective teamwork” (p. 626). However, there are many barriers that impede the construction of a team with a common purpose, such as difficulties bringing together different professionals who may have differing knowledge bases and status, as well as choosing and agreeing upon the right subject. Mission and vision statements in creation can be a sort of “boundary-negotiating artifact” (Lee 2005), an object through which boundaries can be managed during periods of uncertainty. Thus, the process of mission and

vision statement creation can be observed to understand how and why a group functions or fails to function.

Bringing together a variety of different disciplines can be problematic because “unfamiliar vocabulary, different approaches to problem solving, and a lack of common understanding of issues and values” act as barriers to the formation and function of an organization (Hall 2005:193). However, an organization can benefit from these differences if these barriers can be reduced through a familiarization process of the other professions (Hall 2005) and also with the help of individuals who can bridge and break down these barriers. Again, boundary actors who can cross disciplinary and professional divides because of their own marginality may help in the creation of consensus over shared missions (Huzzard et al. 2010; Keshet et al. 2013). Bringing these various professional groups together and creating a sense of cohesion is necessary for creating an organization with a shared mission and vision.

An additional component of forming an organization with a shared mission and vision concerns the distribution of power. Power struggles and disparities have been shown to weaken the effectiveness of interprofessional teams (Hall 2005; Kane 2002; Keshet et al. 2013; May and Ellis 2001) and to complicate interdisciplinary work (Klenk, Hickey, and MacLellan 2010). These disparities can result from the perceived legitimacy of professional background and position within the hierarchy within and outside of the organization (Keshet et al. 2013). Expectations that one’s disciplinary achievements “count” as capital in an interdisciplinary setting may not be shared by all participants, for instance (Graff 2015). Differing norms, standards, and titles between both disciplines and professions may also accentuate power struggles.

There are instances in which power struggles and disparities can be reduced, however. A strong commitment to the mission can reduce the perception of power disparities, and the absence of power disparities allows teams to focus on the task at hand while decreasing competitiveness (Solheim et al. 2007). Additionally, imposing relatively equal status, or a flatter hierarchy, within the parameters of the organization can further reduce power disparities (Hall 2005) and open up boundaries to allow greater cohesion and interdependence. This will allow a more democratic and participatory team culture that values inclusiveness (Bronstein 2003) and profession specific knowledge (Borst 2011).

Factor 3: Team Member Qualities. The qualities and competencies of team members are also a determinant of an organization’s success. The beginning stages of an interdisciplinary organization bring together many professionals from a wide variety of backgrounds, all of whom have their respective strengths and weaknesses. The literature on the subject of personal competencies has converged on a few powerful characteristics: the ability to strike a balance between disciplinary identity and organizational identity, attitudes and beliefs

toward the organization, professional and interpersonal competency, communication skills, and role understanding.

The construction of a new team requires a small shift in identity, wherein team members strike a balance between the identity bestowed upon them by their discipline (Hall 2005) and that of the new interdisciplinary organization. Shared team identity is an important factor in teamwork (Reeves et al. 2011). At the same time, the perception by fellow teammates that a person is legitimate and accomplished within his or her own discipline boosts acceptance of that teammate (Solheim et al. 2007). Team members who perform well and contribute positively to the success of an organization maintain allegiance to their professions while managing to take on the identity of the team as well (Bronstein 2003). Furthermore, much research shows that establishing disciplinary competencies and a strong, stable disciplinary “home” is beneficial—some research even says essential—to interdisciplinary success (Haythornthwaite et al. 2006; Rhoten, O’Connor, and Hackett 2008).

Yet disciplinary competency must be balanced by interdisciplinary and interprofessional skills and dispositions in order for interpersonal communication to work well (Rhoten et al. 2008). In interprofessional primary health care settings, a lack of communication skills was shown to contribute more to adverse events than a lack of clinical skills (Manser 2009). The boundaries between disciplines in interdisciplinary teams, too, can create communication difficulties stemming from different disciplinary frames of reference (Manser 2009), differences in knowledge bases (Jacobs and Frickel 2009), and differences in discipline-specific language (Hall 2005). An important characteristic of communication within interdisciplinary teams is the ability to bridge these boundaries and translate between them. Suchman (1994) called this act “boundary crossing.” Boundary actors, whether leaders (as discussed earlier) or not, routinely perform this action (Huzzard et al. 2010; Keshet et al. 2013). The ability of boundary actors to translate between the boundaries that divide various groups stems from their membership of multiple groups (Keshet et al. 2013) or performance in hybrid roles, such as clinician-administrators (Allen 2009; Akkerman et al. 2006). Their membership in multiple groups has allowed them to acquire knowledge and language specific to these groups and gives them increased legitimacy needed to interact with these different groups (Maguire, Hardy, and Lawrence 2004).

Another important characteristic of team members is an understanding of their roles on the team as well as that of others. The effective negotiation and understanding of roles by team members is helpful in maintaining interdependence and team effectiveness (Solheim et al. 2007). The ability to negotiate and understand role boundaries is important because of the opportunity for conflict to occur from an unequal distribution of responsibility and teammates stepping into the responsibilities of one another (Kvarnström 2008; Øvretveit et al. 2002). An adequate understanding of

team roles can decrease competitiveness over responsibilities. Furthermore, a team member's knowledge of his or her responsibilities, as well as those of others, can help inform the team member how to work with the other team members (Suter et al. 2009).

Data and Methods

The researchers carried out ethnographic observations and interviews focused on an emerging brain care center (EBCC) in a large midwestern city. This organization was chosen as a research site because of its quality of what we are calling "comprehensive interdisciplinarity": a situation in which there is very little disciplinary or professional overlap between any two participants. That is, each discipline or profession is represented by only one or two members, creating a situation in which there are not competing or cooperating interdisciplinary "groups" but rather a wide diversity of disciplinary representation. The organization was also chosen because of the researchers' ability to observe the organization in its infancy; the organization was just barely an idea when observations began.

Observations started in July 2015, shortly after the organization got off the ground, and continued through May 2016, when the organization took a significant turn in organizational practices. Observations focused especially on two meetings: the visioning board meeting (biweekly or monthly) and the ideas committee meeting (weekly), with the latter providing most of the observational data for this study. The visioning board was composed of several important contributors to the EBCC, administrators from the hospital system in which the EBCC is embedded, along with occasionally high-level community partners. The purpose of the visioning board was primarily to define and refine the purpose of the EBCC and secondarily to communicate developments within the EBCC to interested outsiders. The ideas committee meeting, on the other hand, was designed for unorganized, free-wheeling discussion of "big ideas." These were sometimes structured as presentations, other times as merely discussions. Outsiders were sometimes invited as well.

One researcher was invited to observe and participate in these meetings and was given access to group documents, such as business plans, the various iterations of mission statements, and draft organizational charts. Approximately 90 percent of the ideas committee meetings between July 2015 and May 2016, when the meetings were suspended during an organizational pause (see below), were observed. Participants were informed of the researchers' goals and purpose in the meeting. Field notes from these observations, particularly observations from the ideas committee meetings, which the director of the center called the "heart" of the organization, inform this article. Notes from informal conversations with EBCC members and contributors also inform this article.

To follow up on these observations, we undertook six 60- to 90-minute interviews with five key participants of the

EBCC. These five participants represented the core of the organization and included the director of the EBCC. Participants are not identified by name in this article but, where appropriate, by their roles within the organization. These interviews were semistructured and covered multiple topics, ranging from how the participants saw their own roles in the process to their evaluation of the organizations' failures and successes. Although the interviews' main goal was not initially to ask about interdisciplinarity or interprofessionalism specifically, this theme emerged as the main topic of conversation in all six interviews. Data from the substantial parts of the interview that dealt with interdisciplinarity and/or interprofessional work are included in this article.

Interviews were audio-recorded and then transcribed for analysis. Thematic coding (Ayres, 2008) of interviews was completed by the researchers using Microsoft Excel. Initial themes were drawn from the extant literature on interdisciplinary and interprofessional teams. Initial coding categorized answers as having to do with leadership, participant characteristics, transparency and communication, organizational features, and belief in the mission and vision. Three of these themes (leaders, participant characteristics, and belief in the mission) in particular emerged strongly in all interviews as reasons for organizational success. These themes were refined as coding proceeded, producing additional codes (including leadership as multilingual, participatory mission building, and conventional vs. unconventional career paths). Participants used these ways of talking about the organization primarily to explain its successes.

Case Description

The EBCC was started in the spring of 2015 as a collaborative effort among an aging-research organization, a large university health system, and a community hospital. The goal of the organization was to create and maintain brain health services to reach "10,000 brains" in both the local community and across the country. The center has initially focused on dementia, Alzheimer's disease, and schizophrenia, with both clinical goals (slowing the progression of these diseases) and research goals. These research goals were focused primarily on implementation science, with a goal of decreasing the time from "discovery" to "implementation." Another key goal was the creation, use, and evaluation of technology that would allow continuous monitoring of brain health, just-in-time interventions, and the management of brain health at the population level. The goal was to create scalable technology allowing the organization to provide customized, continuous, integrated care to large numbers of patients with a relatively small staff of care coordinators and clinicians while improving outcomes and preventing or delaying mental health problems. An interdisciplinary team of researchers would remain involved in the organization at all levels, allowing "on the ground" and rapid research discovery and implementation.

The center is headed by a physician specializing in geriatric medicine who has extensive experience in both clinical and research roles. The center is further staffed by scientists and clinicians from a very wide variety of fields. Fields represented in the center include psychiatry, business, nutrition and exercise science, geriatrics, medical informatics, nursing, statistics, computer science (including human-computer interaction), visual design, public policy, sociology, human factors engineering, data science, and pharmacy. In many studies of interdisciplinary and interprofessional teamwork in medicine, there are a few large groups of professionals grouped by field (e.g., a group of nurses and a group of social workers), and much of the communication energy goes toward bridging these fields. In the case of the EBCC, however, each field is represented by one or two individuals. Furthermore, as discussed below, most individuals in this team have experience working in multiple fields, though not necessarily the fields represented within the EBCC. Thus we characterize the EBCC as an organization made up entirely of boundary actors. We call this a type of “comprehensive interdisciplinaryity” given the lack of strongly delineated groups.

The center initially had a good deal of success in both making progress toward its clinical goals and fund-raising from both private and public sources. However, at the beginning of 2016, funding concerns led to a “pause” in the organization’s grander plans. Despite this, work to improve clinical operations and research on some of the new technologies the center intends to use has continued. Involved parties note that although the goals of the center itself have been scaled down, the team continues to operate, and direct improvements to and research into patient care, technology, and the organization of health care work continue to be carried out. Despite the shift away from the big initial goals, we classify this organization as successful largely because participants do so. They cite the organization’s continued success in obtaining research grants, in clinical improvements stemming from their organization’s research work, and in publication. Furthermore, all participants continue to work closely together and describe the organization as successful in building a research network they find inspiring and supportive.

Results

Factor 1: Leadership

All interviewed participants mentioned in their answers to questions about why the organization worked that much of the success was due to the characteristics and behaviors of the EBCC’s director. Several characteristics were mentioned. For instance, one participant mentioned that the director is good at engaging smart and successful people, that “he’s a great salesman for other scientists.” Others mentioned that his ambition is inspiring, and the fact that he believed so much was possible led them to believe things were possible.

One participant, a firm believer in personality testing, stated that his personality was “one of the strength of the team. His personality—it’s easy to see, but those of us who study personality, have seen his scores—I mean, his type is *called* ‘Inspirer.’” The same person went on to say that the director’s skills in managing and operations were quite limited, but he was good at “injecting ideas and innovation into things” in a way that is very exciting for others. Another participant credited the director’s “energy for the tremendous progress we made in the beginning.”

These characteristics, however, would be helpful in any teamwork situation. The director characterized his own ability to lead a specifically interdisciplinary team in particular like this:

I feel like I’ve been a very good multilinguistic conductor. That I don’t speak deeply, poetically in multiple disciplines, but I understand the language and have been able to translate a lot of these languages and facilitate communications in checking making assumptions and harmonize the disciplines together to produce this vision and mission and operations as a team.

This characteristic of knowing “a little bit about a lot of things,” as one participant put it, was echoed by several participants.

It could also be seen in meetings. For instance, the director attempted to bring a music therapy professor from a nearby college campus into the project to build, as he put it, a “musical architecture” for the center. He spent about 30 minutes listening to the music therapy professor describe what she believed music could do for a health care center, at which point the director admitted that he was “very illiterate about this.” “Educate me,” he requested. “I want to speak your language just a little bit, so I can make connections.” The director received a brief lesson on the basic language of music—tempo, motif, counterpoint—along with insights into how these things might matter for creating a musical architecture that supports brain health. The director followed up this lesson by explaining that new ideas need an “originator,” who, with deep disciplinary knowledge, creates the innovation, a “follower” who is willing to support it, and, after that, a critical mass of others to create a movement. The director explained that he could be the “follower” in this instance. If he learned just a little “disciplinary” language, he might be able to translate and disseminate the innovation to others. The meeting concluded with the director reminding the professor that she was a “big thinker” and inviting her to see what she could contribute to the project. The professor literally squealed in delight at the prospect. In this example, we see two things: (1) director’s ability to identify and draw in talented people with broad thinking and, more important, (2) the director’s attempt to position himself as a boundary actor by learning just enough disciplinary knowledge about a field to act as a bridge between that field and the work the EBCC is attempting to do.

Factor 2: Belief in Mission

The second factor that facilitated good interdisciplinary teamwork was belief in the mission of the EBCC. Participants spoke both about the importance of the *process* of creation of the vision and mission statements as well as the importance of the mission itself.

Several months were devoted to the writing of a mission and vision statement, a process that took place in the weekly ideas committee meetings and biweekly visioning board meetings. Participants, in general, saw the mission and vision statements as not merely branding, though that was certainly part of the point of the statements, but a true expression of the purpose of the new organization. Questions one might presume had only a superficial importance, such as whether they were seeking to “transform” or “revolutionize” brain health, served as an important tool for developing the future goal and ethos of the organization. Thus, the process was accorded a great deal of importance. The process was also highly participatory, involving all members of the team to contribute both in person in meetings and through e-mail. In observing this process, the researchers noted that most meeting participants spoke frequently at the meetings, and all voices were respected and heard. This level of participation was praised by interview participants. One remarked, for instance, that,

everyone got to—it wasn’t well defined, so everyone got to own it as it evolved. Everyone had a role in figuring out what the mission and vision statement would even be. That’s critical to any group, that everyone feels ownership of that vision and mission.

This process also indicated the “flatness” of the organizational structure, something appreciated by most participants. Informal conversations before and after the visioning board meetings confirmed this sense of an equal power distribution in these meetings, even when the hospital’s CEO was in attendance at the meeting.

By the end of this process, the organization had a mission that interview participants reported as being “inspiring” and “important.” One participant brought up early in the interview that the thing that held the group together was “the vision and the mission. I think the mission is so big and everyone views it as a grand, big thing in a good way.” In other words, the ambitious scope of the mission kept people involved. Others pointed to the fact that the mission was seen as so vital that even though “nobody got paid for anything, but everyone saw enough value and potential [in the mission] to be there.” It became clear that, for many, this was a labor of love, in other words. One participant described the EBCC as “probably the most important thing I’m doing right now, despite not having a contract to do it.”

Finally, there was a sense among participants that the particular group of people was well matched with the mission. In a visioning board meeting, for instance, one participant

remarked that “there are other players in this market, but we do have some competitive advantages, particularly our experience: I think our team is better equipped than any to do this kind of work.” Although this is partially a statement about the characteristics of people in the organization (factor 3), it is also consistently a statement about the fit between mission and people. One participant noted that the group was particularly suited for the mission because its skills were “technically complementary” and went on to list all the things—“clinical operations, health psychology, data warehouse, mobile technology”—that supported and shaped the mission.

Factor 3: Team Member Characteristics

The final factor facilitating good interdisciplinary teamwork has to do with the characteristics of the team members. Multiple participants used a metaphor of “language” to describe themselves, as well as the process of working in an interdisciplinary team. The director, for instance, related that he believed that

we have a critical mass of bilingual disciplinary people, like people who speak two languages in the system. For example, you know, [director of e-health] can speak psychology and informatics, [nudge unit leader] can speaking the aging research and psychology and business. So we have, what I call them, these “bilingual bridges.”

Note that this language recalls the definition of “boundary actors” discussed above. Several participants, similarly, described themselves as translators. This was discussed as both a reason that communication between participants of different disciplines went well and as a potential solution when things were not going well. One participant discussed, for instance, his frequent difficulties in understanding one of the design faculty members involved in the center, stating that he “just didn’t feel like [we] spoke the same language,” but that with others was able to make sense of things and move forward. Another participant mentioned that they, in particular, often mediated between these two participants, acting as a “translator.”

Underlying much of this bilingualism was the experience of participants. One striking characteristic shared by all of the participants interviewed in this study was their experience in working in interdisciplinary settings. One participant noted that because there were so few people in his field who did his kind of work, he naturally found himself working with people unlike him. Another participant recounted how his experience was shaped by working at a center with a wide variety of disciplines, listing specific people: a biomedical engineer, a nurse,

an industrial organizational psychologist, an anesthesiologist, we had people in the center who were anthropologists and medical informaticians and, of course, physicians. There were probably three more physicians just coming in as I was leaving

who were interested in systems. I was surrounded by these people who were the center of my intellectual life, and then my mentors were all physicians . . . so I was exposed to a lot of disciplinary backgrounds, which was very comfortable to me.

Listening to introductions in meetings revealed that many other participants had similar experiences, listing roles and identities that rarely boiled down to a simple “geriatrician” or “psychologist.” Some discussed how this experience led them to communicate better, for instance, learning to “check assumptions” because they had been in “situations where one word meant so different to one person than another, like you’re saying ‘music therapy’ does that mean *listening* to music or *playing* music?”

More fundamentally, however, all participants interviewed described their career paths as “atypical,” “unconventional,” or “unusual.” The analytics director laughed when asked about his career path, stating he was “kind of unconventional, because a psychometrician would usually go to work for an educational testing company. There’s not that many of us with my training in the health sciences.” The most varied and unusual career path of all was one individual who had done everything from construction and farming to teaching, finally taking an all-research position. He began his academic career by obtaining a PhD in sociology, and his first job out of graduate school was indeed in that field, but he reports now that he “wouldn’t even be able to recognize a sociology journal these days.” Others in the organization had stronger disciplinary or subdisciplinary academic identities but have worked in multiple types of departments. The director of e-health, for instance, maintains a strong disciplinary identity in his specific subfield of engineering but has worked in engineering schools and medical schools and is now in a school of informatics. On one hand, this speaks to the aforementioned characteristic of experience in interdisciplinary settings but also to his own varied and idiosyncratic career path. This participant described himself and his experience as “unique.” The director himself said that his career path was highly “unconventional,” both personally in that he was a recent immigrant who had to work his way up from delivering newspapers, and professionally in that although he “officially graduated into being a researcher by becoming an Independent Investigator, but that wasn’t enough . . . I wanted to change the world and be *embedded* in the health care system and mentor people, oh my god this is *so unconventional*.” Informal conversations with a wide range of meeting participants confirmed that department and discipline-hopping career trajectories were common in the organization, not just in the core group. In other words, a large number of members of the organization had the kind of multiple identities and backgrounds that are often characteristic of boundary actors.

Several participants, in fact, reported that the EBCC had a structure that supported boundary actors. During its foundational phase, the EBCC has been organized as

“working groups” of varied sizes and internal organizations arranged like spokes around a central core that, rather than being a closed-off circle, has remained somewhat porous and changeable. This central core crystallized over time around two key committees: informally, the ideas committee and, more formally, the visioning board. The ideas committee meeting, in particular, was supportive of boundary actors in two ways. One, it acted as a freewheeling brainstorming session whose main purpose was not to make decisions but rather, as the director once put it, to “find creativity in chaos.” The meetings made clear that actors could always comment on things outside their disciplinary realms of expertise and, more important, to ask as many questions and drag the discussion in any direction that seemed important at the time. Although ideas committee meetings were often structured as “presentations,” presenters rarely made it through all of the slides they prepared, and the meetings often ended at points only loosely connected to where they started. This meeting, thus, became a space where a lot of the “translation” described above took place. Because participants were rarely concerned with getting through the whole agenda, they were able to take the time to explain, ask questions, and relate concepts to different fields.

Note that not all participants viewed these meetings wholly positively. The theme of “chaos” as opposed to “structure” in a meeting was a common theme of premeeting chat, with participants coming down firmly on one side or the other. In fact, over time, attendance dwindled, and the director was warned that if the meetings continued to be so loosely organized, the ideas committee, highly prized by the director, might vanish altogether. One participant mused that the ideas committee acted as a sort of weed-out mechanism that retained those members who were comfortable with less definition and more exploration, and this “weeding out” favored people who were inclined to work well together despite disciplinary differences:

So, you know, not everyone liked these ideas committee meetings, but I think, in a way, that led some people who might not have worked well in the [EBCC] to walk away. So, that left the people who were really, kind of, comfortable with uncertainty and with flexibility.

Attendance did in fact dwindle and then stabilize, resulting in a smaller but consistent group whose remaining members were comfortable with the sometimes ambiguous and chaotic process of translation and exploration found in the ideas committee. It was this “final” group that reflected unconventional career paths and multiple identities most closely. In other words, it was not that the ideas committee necessarily taught anyone the value of interdisciplinary work, but it weeded out those who were not suited to the kind of interdisciplinary work being done at the EBCC.

Discussion and Conclusion

Our findings mirror much of the existing research on interdisciplinary teamwork, thus reconfirming the results of many previous studies. In particular, the focus of participants in the study on learning the “languages” of various disciplines before being able to work successfully with others and seeking out “translators” to bridge disciplinary gaps in understanding is a common theme in the literature on boundary actors (Keshet et al. 2013) and boundary objects (Lee 2005; Star and Griesemer 1989) that is reflected observations and interviews. In addition, the fact that the director of the EBCC is both inspiring and skilled in managing boundaries provides further confirmation of the importance of leadership in the success of an interdisciplinary team. Finally, the role that a shared mission and vision plays in the success of an organization is a finding that is consistent across much of the literature as well. However, there are some characteristics of the case that present novel findings as well.

First, the attention paid to the process through which the mission was created and not merely the mission itself presents a novel finding. Although some research has focused on the desirability of formulating teams around problems (e.g., Klenk et al. 2010), less research has focused on how problems are refined and made into missions that can inspire loyalty and sustain creative energy. The case here suggests that the highly participatory and long, painstaking process were positive features in the mission’s creation. Furthermore, the fact that the process was not merely wordsmithing but rather a substantive contribution to the direction of the center meant that the resulting mission was not perceived as superficial or merely advertising but rather a real, vital, and urgent purpose. The mission became a sort of boundary-negotiating object (Lee 2005) through which the relations between this interdisciplinary group came to understand their role in a very “flat” organization. These two things put together led to a high degree of buy-in from participants.

Second, unlike previous studies, the participants, including the director, did not merely point to key personnel who acted as “translators” between disparate groups; rather they consistently described *themselves* as translators and connected this to backgrounds that brought them into frequent contact with people outside their fields. The lack of strong, linear disciplinary histories, additionally, may have made participants more likely to accept alternative ways of thinking about problems, given the relative weakness of their commitment to disciplinary norms. It is here where we see the advantages of having an organization composed entirely of “boundary actors.” Relying on boundary actors as go-betweens, although an effective method of bridging disparate groups, can introduce inefficiencies (Keshet et al. 2013) and does not necessarily create the kind of comprehensive interdisciplinarity needed to solve truly boundary-crossing problems (Rhoten et al. 2009). An organization of “boundary actors,” however, may cut out the middle man

by, in essence, making all participants middle men and may be better suited to produce innovative solutions to complex problems.

Finally, and most crucially, we find that it is not simply disciplinary knowledge coupled with “interdisciplinary disposition” (Rhoten et al. 2009) that produces people who thrive in interdisciplinary organizations. Rather, an organization that is as comprehensively interdisciplinary as the EBCC is best served by individuals who not only have experience in interdisciplinary settings but who have followed idiosyncratic career pathways and who see themselves as fundamentally unconventional from a disciplinary standpoint. Although this case does not illustrate that strong disciplinary anchoring is necessarily harmful for interdisciplinary or interprofessional collaboration, it does call into question previous research arguing that strong disciplinary anchoring of team members is a necessary component of interdisciplinary teamwork (e.g., Simonton 2004).

It may be, rather, that disciplinary competence tends to precede interdisciplinary success because the academic system is set up to reward disciplinary success, which provides the resources necessary to engage in interdisciplinary work. Many academics, especially at the early stages of their careers, however, perceive interdisciplinarity and having multiple disciplinary commitments as a risk to their careers (Rhoten and Parker 2004). We can therefore draw policy implications from this important final finding. If weak commitment to disciplinary norms and unconventional career histories are supportive of interdisciplinary work, it may make sense to reward, rather than punish, such deviations from “typical” career paths. Current academic incentives, like promotion and tenure practices, tend to favor conventional, single-discipline careers and strong disciplinary identities. Yet it may be that atypical career paths that involve “department hopping” among disciplines may be better preparation for the kind of boundary-crossing, interdisciplinary work that many universities and other research settings claim to value.

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