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**HOW MICRO-PROCESSES CHANGE SOCIAL HIERARCHIES
IN TEAMS**

A dissertation presented

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In partial fulfillment of the requirements

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HOW MICRO-PROCESSES CHANGE SOCIAL HIERARCHIES IN TEAMS

ABSTRACT

Social hierarchies can prevent teams from hearing and using all of their members' contributions. They are also ubiquitous and difficult to change, reinforced by conscious and unconscious factors as well as social-structural systems. Social hierarchies in teams, however, can and do change. This dissertation diverges from recent research focused on the stability of social hierarchies to argue that social hierarchies in teams can become more dynamic over time; it also explores why and how this shift comes about and how it impacts team member relationships and interaction patterns. In chapter 2, "Toward a more dynamic conceptualization of social hierarchy in teams," I theorize about the antecedents and processes that allow teams to shift their social hierarchy, focusing on the importance of socialized schemas, identity, emotions, and behaviors. Chapters 3 and 4 draw from a 31-month ethnographic investigation into these processes in three multidisciplinary "change teams" in primary health care clinics. These teams were specifically charged with moving their organization toward a more dynamic social hierarchy to remain competitive in their industry. I studied how team members did this within their own team. In chapter 3, "Microwedges: Moving teams from rigid to dynamic social hierarchy," I identify and theorize about the process through which an extra-role behavior, over time, helps to create cognitive changes in team members, prompting them to change their task strategies, role responsibilities, and communication patterns to promote dynamic social hierarchy in the team. Chapter 4, "The changing nature of social hierarchy and voice" follows a change team on a weekly basis over 22 months to document a shift to dynamic social hierarchy and to theorize about the relationship between social hierarchy and voice and silence via "opening" and

“closing” behaviors and the team conversation structure. My dissertation extends and generates theory about social hierarchy and voice. It introduces the concepts of *dynamic social hierarchy* and the *microwedge process* to further our understanding of how teams and their members change over time. It also has practical implications for how team members can engage with the social hierarchy in which they are embedded, alter their teams’ processes, and help their organizations rethink entrenched assumptions about the capabilities and preferences of their members.

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CHAPTER 1. INTRODUCTION AND OVERVIEW

Social hierarchies are ubiquitous and ever-present in teams. They can be conceptualized on a spectrum from more rigid to more dynamic; when they are rigid (i.e., the rank ordering of influence between people is static), social hierarchies can prevent teams from recognizing and using all of their members' contributions, which is particularly problematic for teams working in changing environments or on complex tasks. Such hierarchies are difficult to change, reinforced by conscious and unconscious factors as well as social-structural systems. There is some evidence that social hierarchies can become more dynamic, yet we know little about the micro-processes that unfold over time that help create such change.

In Chapter 2, I provide a review and theorize about the factors that impede and contribute to a more dynamic social hierarchy in ongoing teams. I start by discussing how assumptions about the stability of social hierarchies are grounded in a functionalist tradition which has limited research on an important aspect of organizational life—changes in social hierarchies in teams. Teams are a circumscribed place where multi-directional interactions shape emerging relationships and are thus an ideal place to explore a more dynamic conception of social hierarchy. I describe how stable contexts, tasks, and team membership, coupled with reinforcing cognitive and behavioral processes, lend stability to social hierarchies in teams, and I then introduce a more dynamic conceptualization—one in which the direction of influence can change—that enhances our understanding of the full range of hierarchical forces in teams.

In Chapter 3, I present my findings from a 31-month ethnographic investigation into how social hierarchies in teams can become more dynamic. I draw from the processes of the three “change teams” that I observed in primary health care clinics. These teams were specifically

charged with moving their organization toward more dynamic social hierarchy to remain competitive in their industry. Through close observation of their weekly team meetings, coupled with interviews and examination of archival data, I identify the moments in a team's life when a member engages in a *microwedge trigger*—an extra-role behavior that provides information that undermines the status quo and that was not previously held by the team. These microwedge triggers, over time, help to create cognitive changes in team members, prompting them to change their task strategies, role responsibilities, and communication patterns to promote dynamic social hierarchy in the team.

In Chapter 4, co-authored with Michaela Kerrissey, we first demonstrate that a shift from a more stable social hierarchy to a more dynamic social hierarchy is possible in teams, and we then theorize about the “closing” behaviors that the team exhibited before the shift and the “opening” behaviors that were more evident after the shift. We further show that the closing and opening behaviors are exhibited at different times by all team members and that both the within-level and between-level interactions lead to changes in voice behavior. Finally, we discuss the implications of these findings for the social hierarchy and voice literatures.

Each chapter in this dissertation seeks to further our understanding of the dynamic nature of social hierarchy in teams. Chapter 2 introduces the concept of dynamic social hierarchy and explains why it is critical to organizations and why it may have been overlooked by scholars for so long. Chapter 3 looks at the micro-processes that team members engage in over time that can lead to a more dynamic hierarchy. Chapter 4 does a deep dive into one team to argue for a more dynamic approach to studying voice in teams, particularly in teams whose social hierarchy is changing. Together, these chapters illustrate complex but important micro-processes that help teams recognize and use all of their members' skills, abilities, and experiences.

CHAPTER 2. TOWARD A MORE DYNAMIC CONCEPTUALIZATION OF SOCIAL HIERARCHY IN TEAMS

Beyond their performance and work output, teams play a critical role in organizations—teams provide spaces in which relationships between people form and change over time. What may start as a collection of roles soon becomes a collection of people with unique experiences, skills, and interests. How people recognize and defer to one another's contributions is complex and sensitive to many biases, which form quickly and tend to persist, but need not be permanent.

Team processes are emergent and sensitive to contextual factors. Over time, team members learn about each other, their work, and the organizational needs they are addressing, but this learning does not happen in parallel. Team members' evolving relationships change in response to internal and external triggers (Aime, Humphrey, DeRue, & Paul, 2014; Kozlowski & Chao, 2012; Marks, Mathieu, & Zaccaro, 2001; McGrath, Arrow, Berdahl, 2000). If teams fail to respond and adapt to the context in which they work, they become dysfunctional (Ancona, 1990; Gersick & Hackman, 1990). In this paper, I draw on literatures addressing social hierarchy, diversity, and identity to suggest the conditions under which social hierarchies in teams are likely to change.

Teams as changing entities over time

Teams are bounded, structured entities of three or more people with a shared purpose who perform interdependent tasks and have mutual accountability for task outcomes (Hackman, 2002; Kozlowski & Bell, 2003). While bounded, teams may also be embedded in an organization and “individuals carry their pasts with them” as teams create “their own future” (McGrath, Arrow, & Berdahl, 2000, p.95).

Research suggests that teams continually evolve in three complementary ways: via operational processes, developmental processes, and adaptive processes. However, as McGrath, Arrow, & Berdahl (2000) note, these dynamic elements are often undertheorized by studies that focus “on adhoc groups working for short periods of time on tasks arbitrarily assigned to them for experimental purposes” (p.96, see also Alderfer, 1977; McGrath & Tschan, 2004). Studies on operational processes have looked at phases of team task work, the factors that enable task work, and these factors’ implications for task performance (e.g., Bales & Stodtbeck, 1951; Gersick, 1989; Marks, Mathieu, & Zaccaro, 2001). Studies on developmental processes or phases of group development have highlighted the linear, circular, or task-dependent ways that teams evolve over time (e.g, Bennis & Shepard, 1956; Tuckman, 1965, Gersick, 1988; McGrath & Tschan, 2004; Ilgen, Hollenbeck, Johnson, & Jundt, 2005). Purveyors of the adaptive process approach look at the longitudinal, bidirectional relationship between teams and the systems in which they operate (Poole, 1990; Ancona & Chong, 1996, 1999; Ancona & Caldwell, 1992; Kozlowski, Gully, Nason, & Smith, 1999). Research on these processes articulates how interactions and experiences shape the team, its members, its work, and the larger organization. In this paper, I focus on adaptive processes, while acknowledging that changes toward a more dynamic social hierarchy overlap with both operational and developmental processes.

When teams form, their initial social hierarchy may reflect the social hierarchy present in the organization at that moment in time (Alderfer & Smith, 1992). However, team social hierarchy may shift in response to changes in organizational structure (Aiken & Sloane, 1997; Barker, 1993), organizational goals (Truelove & Kellogg, working paper), technology (Barley, 1986), performance pressure (Gardner, 2012), team tasks (Gersick & Hackman, 1990), or team membership (Choi & Levine, 2004). Changes in social hierarchy can move closer to (e.g.,

Gardner, 2012) or further from (e.g., Barley, 1986) vertical hierarchy; social hierarchy can also change from more stable—a hierarchy that persists over time—to more dynamic—a hierarchy that shifts over time (Klein, Ziegert, Knight, & Xiao, 2006). Because social hierarchy determines team members' influence and deference behaviors, a more dynamic social hierarchy allows for patterns of influence and deference to shift as well (e.g., Aime et al., 2014). In this paper, we consider hierarchies that always have the same cascading influence relationships as rigid and those that have changing influence relationships as dynamic. These dynamic shifts are not permanent but instead allow the team to adapt to changes in their contexts, tasks, or membership, which may call for different approaches to successfully reach the team's goal.

Organizational scholars of social hierarchy have not focused on dynamic social hierarchies, instead focusing on more rigid models. This limited focus on dynamic social hierarchy may be due to most researchers' functionalist perspective. This perspective suggests that because these scholars understand hierarchies as inevitably present in organizations of all sizes, these structures must be positively functional—improving efficiency and performance. Following from this interpretation, resulting inequality is justified by a legitimate process that led to it (e.g., Davis & Moore, 1945; Magee & Galinsky, 2008; for a critique of this perspective see Anderson & Brown, 2010; Pfeffer, 1981; Tumin, 1953). Stability is at the core of the functionalist perspective; with the assumption that hierarchies in teams and organizations are efficient and legitimate, research subsequently focuses on how people and team processes reinforce the status quo. Research on teams, however, generally draws more from an interactionist approach, such that “the central feature, the ‘essence,’ of a group lies in the interaction of its members” (McGrath, 1984, p.12). These members need to individually and collectively negotiate and renegotiate their contributions to the team as they respond to changes

in membership and context (e.g., Ancona, 1990; Ancona & Caldwell, 1992; Choi & Levine, 2004). This perspective not only allows for change, but also actively seeks to understand how teams cope with it.

SUSTAINING HIERARCHY-BASED RELATIONSHIPS IN TEAMS

Social scientists have long studied social hierarchies (for a review see Anderson & Brown, 2010); a commonly used definition views social hierarchy in teams as “an implicit or explicit rank order of individuals or groups with respect to a valued social dimension, particularly power and status” (Magee & Galinsky, 2008, p.354; Anderson & Brown, 2010; Bendersky & Hays, 2012; Fragale, Overbeck, & Neale, 2011; Zitek & Tiedens, 2012).

Bunderson and colleagues (2016) recently proposed a different conceptualization of how social hierarchy in teams is enacted—as “cascading relations of dyadic influence.” This theory, while acknowledging that influence tends to flow in one direction in a dyadic pair, suggests that the resulting overall structure of people need not be linear (e.g., the structure can be circular at the team level). If we take this relational conceptualization even further, one can reason that ever-evolving dyadic relationships and not static team rank could determine influence among people. Further, this view invites us to explore how hierarchies can change when relationships between people change. First, however, I should clarify and distinguish between the bases of social hierarchy (i.e., power and status) and the consequences of social hierarchy (i.e., influence and authority). See Figure 1 for a depiction of the antecedents and consequences of social hierarchy.

The two most common bases of social hierarchies are power and status, which can but need not overlap (Fast, Halevy, & Galinsky, 2012; Magee & Galinsky, 2008; Truelove & Kellogg, working paper). Both power and status have been defined in myriad ways. Drawing from a psycho-sociological tradition in organizations, I see power as structural, resulting from

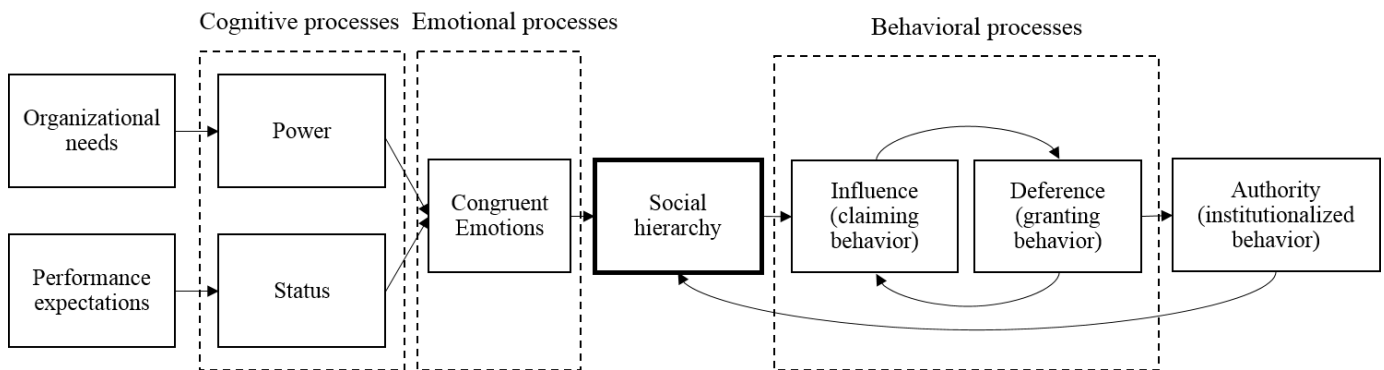
divisions of tasks. This process confers more power on people responsible for tasks believed to be more integral for the organization (Pfeffer, 1981). Status derives from others' perceptions of a person's ability to perform these important tasks (e.g., Berger, Rosenholtz, & Zelditch, 1980; Ridgeway & Walker, 1995; Bunderson, 2003; Anderson & Brown, 2010). An example to clarify the difference between power and status: a highly competent receptionist may have low power in a law firm, but high status based on the respect and admiration she engenders in expertly performing work that others value. On the other hand, an incompetent Partner in the firm could have high power and low status.

Individual emotions often draw from one's high or low power and status. For example, research has found that people whose individual, dyadic, or group characteristics grant them a position of power, or perceived power, feel more positive emotions (Keltner, Gruenfeld, & Anderson, 2003; Kilduff & Galinsky, 2013), more emotions associated with having power such as pride, anger, and enthusiasm (Tiedens, 2001; Tiedens, Ellsworth, & Mesquita, 2000), and a greater sense of distance from others (Magee & Smith, 2013). People who lack power, conversely, feel more negative emotions, including sadness and guilt (Keltner et al., 2003; Tiedens, 2001). Emotions not only reflect people's position of power, but also they inform their behavior, helping to reinforce the existing social hierarchy.

A person's organizational power and status, along with congruent emotions inform that person's perception of their place in the organizational hierarchy. These perceptions affect that person's resulting behavior, particularly dominance behavior. Dominance behaviors have been divided into influence, also termed "claiming," and deference, or "granting" (DeRue & Ashford, 2010; Kilduff & Galinsky, 2013). Dominance behaviors inform how someone interacts with other members of the team, through repeated dyadic- and team-level interactions. If Person A's

influence over one or more individuals is seen as legitimate, then those individuals are likely to defer to Person A (DeRue & Ashford, 2010). Claiming and granting behaviors over time become tacit and, eventually, institutionalized as authority. Authority, therefore, is the *exercise* of power and status, not power and status itself. Once established, patterns of authority cyclically reinforce the underlying social hierarchy.

Figure 1. Social hierarchy formation in organizational teams



Differentiating between the antecedents and consequences of social hierarchies in teams can help inform our theorizing about when and how changes in team social hierarchy come about. This work can also help organizations that use teams to incorporate knowledge and share power across roles and disciplines. For example, in trying to understand the difficulty of asking doctors to change their dominant behavior towards staff and patients, it is important to consider the roles of power and status—dominance behaviors will remain, or revert back to, the status quo, unless there is an underlying cognitive and emotional shift in how doctors, staff, and patients think about contributions and power (Hardy & Leiba-O’Sullivan, 1998; Roberts, 1999; Satterstrom, Polzer, & Wei, 2012).

Equilibrium periods and stable team membership allow for routines that reinforce a rigid hierarchy

For teams embedded in organizations (or systems), overarching organizational power structures generally inform team members' authority (Berger, Rosenholtz, & Zelditch, 1980). These structures are reinforced by shared expectations or social norms (Ridgeway & Berger, 1986). This does not mean that social hierarchy in organizational teams is destined to always mirror that of the organization, but it does suggest that the initial power arrangement in a team, particularly a multidisciplinary team, will likely mirror the power arrangement of the organization in which the team is embedded (Alderfer & Smith, 1992). Since teams are informed by their organizations, it is reasonable to think that their evolution might mirror each other. Below we discuss three stabilizing forces for social hierarchy.

Stable team context. A well-established theory explaining the evolution of teams and organizations is punctuated equilibrium (Gersick, 1988, 1989, 1991; Tushman & Romanelli, 1985; Romanelli & Tushman, 1994). Equilibrium periods (i.e., periods of relative stability) are long and characterize the majority of a team's life, and equilibrium periods breed this inertia via habitual routines (Gersick & Hackman, 1990). Nonetheless, short and abrupt revolutionary periods (i.e., periods of significant change) are able to surmount team and organizational inertia.

Stable team tasks. As a team engages in tasks, its members learn about one another's task-relevant expertise, and effective teams use this growing knowledge to inform who is labeled an expert and granted more authority over time (Bunderson, 2003). If team tasks never change, then the eventual expertise-based hierarchy can continue without any major deficit to team performance, given a strong alignment between members' abilities and their contributions. In this situation, the team may not have the opportunity to experience people's different skillsets, short-circuiting the possibility of a different social hierarchy.

Stable team membership. It is not surprising that as people work together for longer periods of time, they may understand each other's tasks and begin to substitute for each other (i.e., task flexibility). In turn, when people leave a team, that team may experience less social integration, learning behavior, and task flexibility (van der Vegt, Bunderson, & Kuipers, 2010). However, task flexibility confers substitutability but not flexibility in performing new tasks nor in deciding who influences and defers. Likewise, high social integration—"the degree to which an individual is psychologically linked to others in the group"—improves team morale but may also increase similarities in perspectives and expectations, leading the team to maintain a stable social hierarchy (Janis, 1982; O'Reilly, Caldwell, & Barnett, 1989, p. 22).

Periods with minimal change, stable team tasks, and stable team memberships allow routines to form. Routines, or "repetitive, recognizable patterns of interdependent behaviors among organizational actors" (Turner & Rindova, 2012, p. 24), limit the attention and cognitive resources that people bring to their task. Routines are key for team and organizational function, creating efficiencies and improving performance when the routines match the tasks at hand. These taken-for-granted behavioral processes also help reinforce the existing social hierarchy.

Reinforcing cognitive, emotional, and behavioral processes

Why are social hierarchies so difficult to change? Organizational research that draws from psychology suggests that rigidity in hierarchies can be attributed to the higher-ups, the lower-downs, status itself, and underlying cognitive mechanisms. One stream of research on power suggests that those *higher* in the hierarchy prevent change because they are not influenced by those lower in the hierarchy (Magee & Smith, 2013; Galinsky, Magee, Gruenfeld, Whitson, Liljenquist, 2008), unable to see what others offer (Overbeck & Droutman, 2013; Galinsky, Magee, Inesi, & Gruenfeld, 2006), or due to stereotypes about powerful versus powerless people

(Overbeck, Tiedens, & Brion, 2006). A second stream of research suggests that those *lower* in the hierarchy prevent change because they do not think they provide value (Anderson, Willer, Kilduff, & Brown, 2012) and yield to those with more power (Overbeck, Neale, & Govan, 2010), even when it does not benefit them (Kwaadsteniet & van Dijk, 2010; Jost, Banaji, & Nosek, 2004). A third stream of research on *status* suggests that people hold a zero-sum perspective of status that limits change, because those at the top do not want to move down (Pettit, Sivanathan, Gladstone, & Marr, 2013; Pettit & Lount, 2010; Pettit, Yong, & Spataro, 2010; Porath, Overbeck, & Pearson, 2008), while moving up is costly (Bendersky & Shah, 2012). A fourth stream of research suggests it is because there are fundamentally different *cognitive mechanisms* at play for people in positions of higher and lower power, which lead to distinct patterns of change-resistant behavior (Anderson & Berdahl, 2002; Keltner, Gruenfeld, & Anderson, 2003; Lammers, Galinsky, Gordijn, & Otten, 2012; Magee & Smith, 2013).

Position-based schema. Underlying these streams of research is the idea that people use their position (high or low) to inform how they perceive themselves and others, how they feel, and how they behave (most often in a way that is congruent with their authority). Studies on social hierarchy also examine how people use their position in a team to understand other members' deference patterns (Tiedens & Fragale, 2003; Fragale, 2006; Fragale et al., 2012; Kwaadsteniet & van Dijk, 2010), usefulness (Gruenfeld, Inesi, Magee, & Galinsky, 2008), and motivation (Inesi, Gruenfeld, & Galinsky, 2012). These studies suggest that people inform their expectations of others using position-based schemas. A schema is “a cognitive structure, a network of associations that organizes and guides an individual's perception,” which allows for a “readiness to search for and assimilate information in schema-relevant terms” (Bem, 1981, p. 355). Studies suggest that position is so important that it can overpower more tangible cues such

as a changing context (Galinsky et al., 2008). Position-based schema therefore plays a large role in reinforcing hierarchies by leading to differences in cognition and behavior across positions that support the existing arrangement in the social hierarchy (Magee & Galinsky, 2008).

Work identity. Another important cognitive factor in reinforcing the existing social hierarchy is role identity—specifically professional, occupational, or work identity. While there are many definitions of role identity depending on the researcher’s theoretical tradition (Pratt & Foreman, 2000), I draw from Ashforth (2001) who defines roles as behavioral expectations associated with positions in a social structure that are enacted in an emergent and negotiated way among individuals. Roles can therefore vary between stable (i.e., institutionalized) and fluid (e.g., during times of transition between roles) depending on the individuals and their context. Role identities are the “goals, values, beliefs, norms, interaction styles, and time horizons” that are associated with the role (p.27).

Professional identity is a subcategory of role identity that has received increasing attention from organizational scholars (e.g., Pratt, Rockman, & Kaufmann, 2006). Professional identities are those associated with professions, such as law and medicine. Different professions carry with them different levels of prestige, which is defined as admiration or respect and can be seen as a corollary to power and status (e.g., Creed, Searle, & Rogers, 2010; Norredam & Album, 2007). For example, in his study of medical professionals, Shortell (1974) found that professionals who had active or dominant relationships over patients (e.g., neurosurgeon and cardiologist) were ranked as having higher prestige than those who had passive or cooperative relationships over patients (e.g., psychiatrist or preventative medicine) and that physicians had higher prestige than non-physicians (e.g., technicians and nurses). In organizations, social hierarchies are often based on both profession and role within that profession—in medicine,

doctors over nurses and senior doctors over junior doctors (Battilana, 2011). Research on occupational or work identity suggests that non-professionals also have an identity that is connected to their formal job title (DiBenigno & Kellogg, 2014). For the remainder of this paper, I will use “work identity” synonymously with occupational and professional identity.

When teams in organizations coalesce, their members are often drawn from different occupations that carry with them different levels of status. As Edmondson and Nembhard (2009) summarized: “Salient demographic differences such as profession (e.g., marketing vs. engineering) tend to evoke judgments about relative status, expertise, and ability to contribute meaningfully to the task” (p. 128). In stable contexts, work identities may help determine the social hierarchy of the teams indefinitely, especially if work identities were central to the original logic behind team formation and remain embedded in the team’s purpose. For example, when a manager creates a multidisciplinary team and emphasizes the importance of bringing in a doctor, a nurse, and a receptionist, it makes these particular work identities and identity-based expectations salient in the group. However, there is an opportunity for other identities to come to the forefront in more dynamic contexts, as I will describe below (Aiken & Sloane, 1997; O’Malley et al., 2014).

Position-congruent emotions and behavior. Research on the role of power on behavior suggests that being in a position of power promotes approach or “proactive, goal-oriented behavior” (Kilduff & Galinsky, 2013, p. 818; Keltner, Gruenfeld, & Anderson, 2003; Magee & Galinsky, 2008). As power increases it also promotes the expression of positive emotions while decreasing perception of others’ negative emotions (Anderson & Bedahl, 2002; Keltner, Gruenfeld, & Anderson, 2003). Lack of power does the opposite. So, someone’s perception of their own power creates emotions, which help align behaviors. If schemas, emotions, and

behaviors align with one's position in the hierarchy, it is not surprising that these factors work together to recursively reinforce disparate positions of power in the social hierarchy.

In the section below, I will address each of these factors and suggest a novel conceptualization that moves away from stable hierarchy and toward dynamic social hierarchy. Figure 2 depicts how these stabilizing and changing factors interact to reinforce a stable or dynamic social hierarchy, while Table 1 provides examples of these factors and the literature they are drawn from.

Figure 2. Sustaining and changing hierarchy relationships in teams

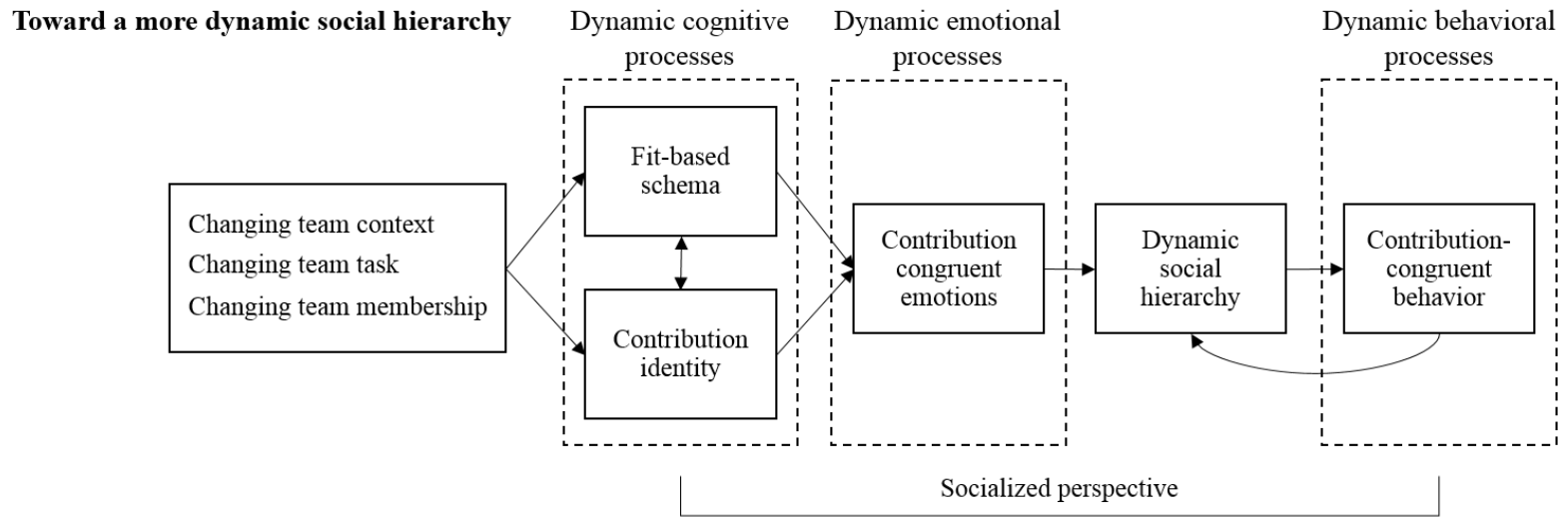
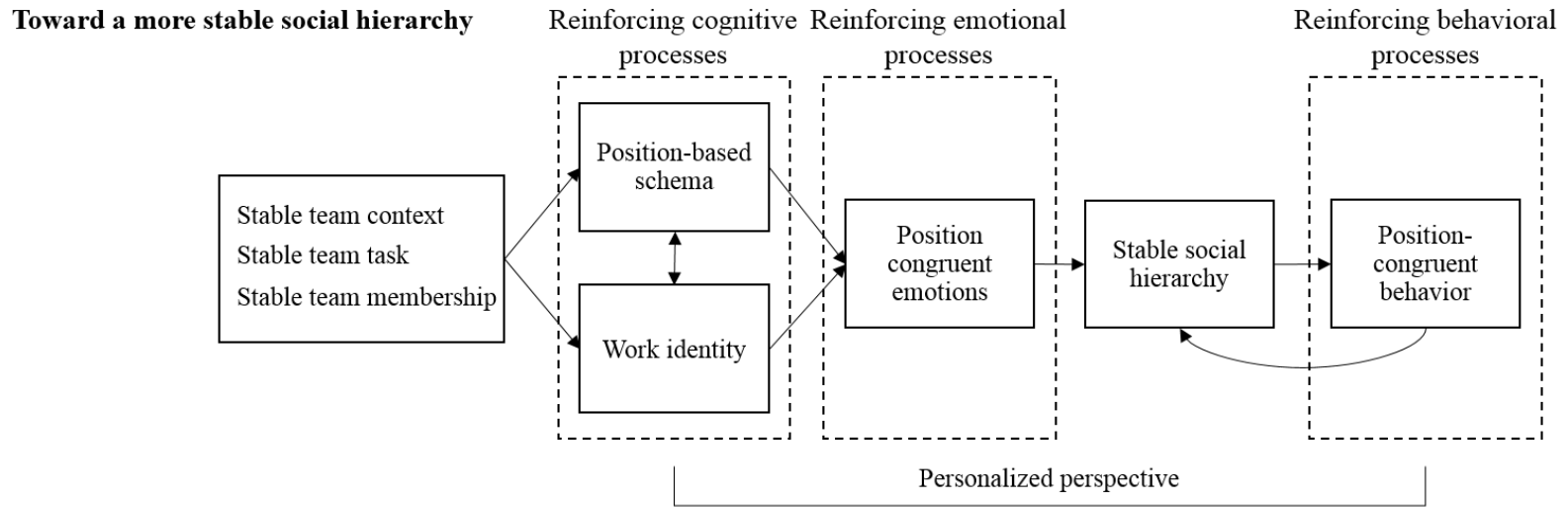


Table 1. Examples of sustaining and changing social hierarchy in teams

Sustaining social hierarchy in teams	Changing social hierarchy in teams
<p><i>Stable context:</i> stable organizational needs, social expectations, and technology For example, an organization experiencing success in an established industry (see Tushman & Romanelli, 1985)</p>	<p><i>Changing context:</i> organizational needs, social expectations, and technology in flux For example, an organization in an industry that is shifting from a more bureaucratic structure to a more team-based structure (see Tushman & Romanelli, 1985)</p>
<p><i>Stable team tasks:</i> the work and the way the work is carried out is consistent or incrementally different</p>	<p><i>Changing team tasks:</i> the work or the way it is carried out changes significantly</p>
<p><i>Stable team membership:</i> no turnover</p>	<p><i>Changing team membership:</i> low to moderate turnover</p>
<p><i>Position-based schema:</i> position of self and others in the team hierarchy is salient, informing expectations of self and others For example, on a medical team: a doctor knows she is higher in the hierarchy so feels like she is the default leader on every task, even if it's outside of her skill set (e.g., implementing a new electronic medical record) (see Berger, Rosenholtz, & Zelditch, 1980)</p>	<p><i>Fit-based schema:</i> differences in experience and skill are salient, so the expectation is that the team will search for and uncover areas of expertise among members to address new organizational needs For example, on a medical team: a doctor knows the receptionist is computer savvy, has strong relationships with staff, and has the organizational skills needed to lead the task of implementing a new electronic medical record (see Bunderson, 2003)</p>
<p><i>Work identity:</i> individual identity is based on profession and position within a profession For example, in a team working on improvement efforts: a doctor identifies with her profession and, further, identifies with her place in the profession (experience, specialization) while a medical receptionist similarly identifies with her profession and place in the profession (experience, specialization) (see Pratt et al., 2006)</p>	<p><i>Contribution identity:</i> individual identity draws from both the team identity and an individual's multiple identities; identity is emergent, negotiated among individuals, and sensitive to the situation For example, in a team working on improvement efforts: a doctor may draw from her leader identity to identify as the team spokesperson, while a medical receptionist may draw from her problem solver identity to identify as the team database builder (see Ashforth, 2001; Cheng, Sanchez-Burks, & Lee, 2008; Edmondson, Roberto, & Watkins, 2003)</p>
<p><i>Position-congruent emotions:</i> individuals high in power display emotions associated with higher power (e.g., positivity, pride, anger), while individuals low in power display emotions associated with low power (e.g., negativity, fear). (see Keltner, Gruenfeld, & Anderson, 2003; Tiedens, 2001; Tiedens, Ellsworth, & Mesquita, 2000)</p>	<p><i>Contribution congruent emotions:</i> individuals who feel they can make a contribution display emotions generally associated with higher power and status regardless of their position (see Martorana, Galinsky, & Rao, 2005)</p>
<p><i>Position-congruent behavior:</i> individual behavior legitimizes an individual's identity and schema <i>Claiming:</i></p>	<p><i>Contribution-congruent behavior:</i> individual behavior benefits the team and goes beyond existing role expectations <i>Claiming:</i></p>

For example, a biology student's role stays limited to running lab experiments to fulfill his subject-specific role on the research team even though he has the capacity and interest to write a needed computer program

Granting:

For example, deference on the research team mirrors organizational hierarchy, wherein students defer to postdocs, who defer to untenured faculty, who defer to senior faculty

(see DeRue & Ashford, 2010; Magee & Galinsky, 2008)

For example, a biology student writes a needed computer program as part of a research project, exceeding his expected skill set

Granting:

For example, on a research team with many levels of students and professors, a senior engineering professor defers to a biology student who has the relevant content knowledge and programming skills required for a certain task

(see DeRue & Ashford, 2010; Joshi & Knight, 2015; Van Dyne, Cummings, & Parks, 1995)

CHANGING HIERARCHY-BASED RELATIONSHIPS IN TEAMS

The theorization of stable social hierarchies can be at odds with the view that teams are spaces for members to learn and grow; this latter, more growth-based conceptualization, requires fluidity in roles (Hackman, 2002). Teams can also be a space where experimentation and individual, team, and organizational change originate (Higgins, Weiner, & Young, 2012; Howard-Grenville, Golden-Biddle, Irwin, & Mao, 2011). This interactionist perspective of teams has conceived of status distributions in teams as an ongoing social process that emerges from relationships among people, not from the people themselves (Berger, Rosenholtz, & Zelditch, 1980; Ridgeway & Berger, 1986).

The tension between, on the one hand, a functionalist perspective of stable social hierarchies and, on the other, an interactionist view of team development, can be resolved by considering that the former takes a more *personalized* perspective of social hierarchy, while the latter takes a more *socialized* perspective. Scholars have drawn this distinction at the individual level with regard to power motive (e.g., Bunderson & Reagans, 2011; Magee & Langner, 2008; McClelland, 1970; Winter, 1973); those with a personalized power motive “see power as a means for advancing personal concerns related to domination, control, or prestige” (Bunderson

& Reagans, 2011, p1186, summarizing McClelland, 1975) while those with a socialized power motive “see power as a means for advancing collective interests and concerns” (p. 1186).

Personalized perspectives have implications at the team level, since individuals who want to maintain and advance their position may do so at the expense of the group (Pettit, Yong, & Spataro, 2010; Porath, Overbeck, & Pearson, 2008).

At the team level, a culture that emphasizes individuals’ position in the power structure, either through a position-based schema or through emphasis on their work identity, promote a personalized power motive among its members. Power motives vary based on how people have been socialized and the context in which they find themselves (e.g., Winter, John, Stuart, Klohnen, & Duncan, 1998); socialized power can be promoted by rewarding the team instead of individuals, therefore shifting the team toward a collective orientation (Van der Vegt, de Jong, Bunderson, & Molleman, 2010).

Soon I will introduce the concept of a fit-based schema and show how this type of schema along with a contribution identity, contribution-congruent emotions, and contribution-congruent behavior, emphasize a collective orientation—namely where individuals use their skills, abilities, and preferences for the benefit of the team and organization. First, however, I need to address the question: why would teams want to have a more dynamic social hierarchy? After all, much of the literature documents ways in which rigid hierarchies are functional, efficient, and helpful (e.g., Halevy, Chou, & Galinsky, 2011; Magee & Galinsky, 2008; Ronay, Greenaway, Anicich, & Galinsky, 2012).

In their review of this literature, Halevy and colleagues (2011) suggest that a rigid social hierarchy: 1) creates a psychologically rewarding environment because you know where you are heading, 2) motivates performance via incentives to move up the hierarchy, 3) capitalizes on the

complementary psychological effects of having versus lacking power, 4) supports division of labor and coordination, and 5) reduces conflict and enhances voluntary cooperation. Each of these benefits, however, has a corollary downside. For example, psychological benefits may be concentrated in those who accept the hierarchy as valid and consistent with their beliefs, especially those with high power; one can imagine that those who do not view the hierarchy as legitimate may not share in the psychological rewards (Anderson & Brown, 2010). Similarly, low-power individuals and groups who do not have opportunities to rise in the hierarchy may be less motivated to strive for power or status, resulting in lower contributions from these members. The well-documented human inclination to self-sort into high and low positions (e.g., Tiedens, Unzueta, & Young, 2007) may help coordination, but only if the positions are then able to change to match new tasks and information (Aime, Humphrey, DeRue, & Paul, 2014). As a final example, reducing conflict may help some teams, but if other teams have too little friction, they might benefit from the type of conflict that spurs innovation (De Drue, 2006; Todorova, Bear, & Weingart, 2014). Given the many positive and negative features of hierarchy, effective teams use the benefits of hierarchy while minimizing the downside of stability by seeking ways to adapt to change.

Antecedents for a more dynamic social hierarchy in teams

Changing team context. Teams must adapt to their environment to remain useful (Gersick & Hackman, 1990; Ancona & Caldwell, 1992), so it is reasonable to assume that there would be more stability in a team during equilibrium periods and more team change during revolutionary periods in the organization (e.g., Gersick, 1991). Organizational change is considered divergent when it significantly moves away from “role division among organizations” and/or “role divisions among professional groups in a field” (Battilana, 2011, p.

817). Research on divergent organizational change suggests that it can be caused by “external shocks such as social upheaval, technological disruption, competitive discontinuity, and regulatory changes” (Battilana, 2011). Because the team is embedded in an organization, which in turn is embedded in an industry and a society, changes at any of these levels can result in changes within team contexts. Below I will provide two examples: technological and social.

Barley (1986) documented technology acting as a force for changing role relations in organizations and in task teams. In his landmark CT scanner study, Barley (1986) drew from an interactionist perspective in which “structure is understood as an emergent property of ongoing action” (p. 79). In his study, the use of a new technology by members of the profession “radiologist”—a dominant profession—and more or less experienced members of a submissive profession—“technologist”—resulted in selective role reversals, with only technologists who were experienced. Barley suggests that one of the ways this reversal happened was through the changes in interactions within task-performing teams—in this case, the information flowed from experienced technologists to novice radiologists, who deferred to and learned from technologists. This instance specifically exemplifies the more general phenomenon wherein external changes lead to changes in expertise recognition and attribution, which in turn lead to corresponding changes in social hierarchy.

Organizational change in response to societal changes can be gradual—such as intermittently allowing minorities to join (Thomas & Gabarro, 1999) or slowly addressing climate change (Henderson, Gulati, & Tushman, 2015)—or sudden—such as immediately diverting resources and production during times of war (PBS, 2007). Aiken and Sloan (1997) studied the impact of the AIDS epidemic on hospitals and the effect of the epidemic on the status of doctors and nurses delivering care. The scholars compared hospitals with no structural change

(where AIDS patients were left in general wards) to hospitals that created AIDS wards in order to understand how change in treatment context affected interactions between doctors and nurses. They found that in the hospitals with no structural change, doctors continued to be highly specialized while nurses were not, and authority continued to reside in doctors. In hospitals that created AIDS wards, however, the role structure between doctors and nurses changed dramatically. In these wards, nurses specialized alongside doctors, gaining and demonstrating skills and knowledge (see: Stein, Watts, & Howell, 1990). Over time, nurses gained authority by demonstrating that their specialized ability to care for AIDS patients, a skill set that was important to the organization wherein they competently performed much-needed work. Doctors still maintained technical and professional dominance, but nurses gained responsibility and autonomy, granting them previously unforeseen authority. Like Barley's (1986) technologists, these nurses demonstrated the principle that changes in context—in this case an epidemic that led to reorganization—can lead to expertise recognition in previously overlooked people, in turn leading to a more dynamic social hierarchy.

Changing team task. Changes to the team's task, in addition to changes in team context—whether they are brought about via external changes to the team's goals, explicit changes in assignments, or the team deciding to change its work—can destabilize the team's social hierarchy. McGrath's task circumplex (1984) organized empirical evidence about group task performance by categorizing tasks along four quadrants (generate, execute, negotiate, choose). Not every individual is equally effective at tasks along each quadrant; however, the team allows different individual skills and abilities to be pooled. Thus members become more interdependent, and the team as a whole is more capable of completing the task at hand (Hackman, 2002).

Changing team membership. Internal role transitions can also push the team's social hierarchy to be more dynamic. When members enter or exit the team, the team's social hierarchy may be temporarily in flux as the team renegotiates and redistributes responsibilities (Moreland & Levine, 1982). An exit that underscores new information about the team, such as the distress of a member, may trigger reflection as team members determine how to rebuild the team; this forced reflection can help hasten changes that support a more dynamic social hierarchy, as members seek to prevent similar membership losses in the future (see Chapter 4).

We know from research on organizational change that changes at one level are often insufficient to change hierarchy, since there are several layers of reinforcing processes that sustain the status quo (e.g., Gioia and Thomas, 1996). Even when team context shifts, tasks change, and members who were skilled at previous tasks struggle to tackle new tasks, the team may not allow other members the opportunity to demonstrate that they possess needed skills. This suggests that, in addition to changes in contexts, tasks, and/or membership, changes to the team's cognitive and emotional processes play critical roles in facilitating changes to the team's social hierarchy.

Shift to more socialized schema, identity, emotions, and behaviors

In this section I suggest that the same factors that at times provide stability to a team's social hierarchy (i.e., position-based schema, work identity, position-congruent emotions, and position-congruent behavior) can be conceptualized in a more dynamic and collectively-oriented manner (i.e., fit-based schema, contribution identity, contribution-congruent emotions, and contribution-congruent behaviors). Exploring these factors from a socialized perspective allow us to uncover and better understand how teams can adapt in moments of change.

Our conceptualizations of a fit-based schema, contribution identity, and contribution-congruent emotions draw heavily from research on diversity, especially research that suggests that team members may not initially recognize each other's deeper-level task and relational attributes. Yet in this understanding, these emotional and/or political attributes become increasingly relevant and salient to the team and the individual over time (e.g., Harrison & Klein, 2007; Harrison, Price, & Bell, 1998; Harrison, Price, Gavin, & Florey, 2002; Jackson, May, & Whitney, 1995; Philips & Loyd, 2006). This research stream suggests that people evaluate others on not only their surface-level attributes, but also their deeper-level attributes. These attributes can be either task-related or relations-oriented. Jackson, May, & Whitney (1995) suggest that surface-level task attributes include organizational tenure, team tenure, department/unit membership, membership in task-relevant external networks, formal credentials, and education level. Deep-level task attributes include knowledge, skills, abilities (cognitive, physical), and experience (p. 212). Both surface- and deep-level attributes are contextually determined—in one team, organizational tenure might be a highly relevant and salient surface-level attribute, while in another team, credentials are relevant and salient in a deeper way (Bunderson, 2003).

Surface-level task attributes align with our conceptualization of position-based schema and work identity, wherein occupation and educational attainment confer different levels of prestige or status (Creed, Searle, & Rogers, 2010; Norredam & Album, 2007). While both occupation and educational attainment may be excellent proxies for deeper-level task attributes in some situations (e.g., the assumption that because a team member has a PhD she should lead the team's analyses), these surface-level attributes are not an effective proxy in every situation (e.g., the assumption that because a team member has a PhD she should lead the team's presentation to a client). Deep-level task attributes, on the other hand, become visible to team

members only through experience, as they observe other team members' performance across time and across situations. Assumptions made using deep-level attributes are not based on position but rather on observed knowledge, skills, abilities, and experience, so while they are not always accurate (and are highly susceptible to surface-level biases), they more closely mirror the skills held by the team member. For example, the assumption that the team member who has worked most closely with the client, and is additionally an excellent public speaker, should take the lead in presenting to the client is grounded on that person's knowledge, skills, and experience, yet might overlook the fact that the person does not have an advanced degree.

Teams often give different members the lead in different situations, but the social hierarchy literature may not capture this because we do not often follow teams day-in and day-out to see how they respond to changes in their context. Furthermore, teams form habitual routines; so, their inertia for change is very high and they take a long period of time to discern change (Gersick & Hackman, 1990). For example, I observed multidisciplinary health care teams tasked with shifting their clinics to a more team-based structure in order to improve care delivery (see Chapter 3). Team members utilized strongly position-based schema, based on training and deeply-held cultural assumptions, so I had to observe the teams over a year to a year and a half to start seeing some of the teams shift to a more dynamic social hierarchy. Below I will argue that while position-based thinking, identity, and emotions are readily accessible and widely used, it is possible for contribution-based thinking, identity, and emotions to form given time, helping to encourage a more dynamic social hierarchy.

Fit-based schema. In a position-based schema, information that is consistent with the hierarchy is more readily accessible, and information is processed differently depending on your place in the hierarchy. In a fit-based schema, team members rely more on observations of past

work to form expectations of each other's ability, experience, and interests (Bunderson, 2003). The realization that expertise is distributed is critical, because it allows team members to search for and use available information to inform how new tasks are distributed and who should take the lead. This realization of a fit-based schema, however, depends highly on first-hand experience and cannot easily be bypassed by managers trying to redistribute tasks. For example, in primary care, managers have recently been redistributing team tasks in response to new industry standards. Yet, if a manager takes a task that had previously been done by a doctor (e.g., measuring the blood pressure of a diabetic patient) and gives it to medical assistants who are lower in the hierarchy but may have the training to perform the task, the doctor may continue to do the task unless that doctor personally acquires evidence that the medical assistant has the skill and ability to execute the task effectively. This paradigm can lead to duplicated work and wasted time. Like any schema, a fit-based schema emerges from experience intimately related to the way an individual understands the world around them—in this case, acknowledging that skills and knowledge are distributed among all.

Fit, however, is not just limited to individuals' skills or preferences, but indeed to how these would best serve the team. Taking team goals and needs into account prevents a position-based schema from re-emerging if people with more power are assigned to the tasks that they like best. Fit-based schema among team members allow a changing social hierarchy to take hold.

Contribution identity. Identity researchers have long established that individuals in organizations have multiple identities (e.g., Ashforth, Harrison, and Corley, 2001; Ramarajan, 2014). While in many teams, especially multidisciplinary teams, the identities that may become most salient are individuals' work identities, identities based on the specific attributes individuals contribute can also emerge. Combining both social identity theory and identity theory, Ashforth

(2001) suggests that people have two levels of identity—personal identities formed around a person’s “idiosyncratic attributes” as perceived by others, and social identities, which form around membership in a group. I propose that contribution identity has both a personal identity component (i.e., a person’s knowledge, skills, experience, preferences) and a social identity component (i.e., a shared team identity). This type of identity emerges regularly in teams and can overwhelm other identities. For example, in a research team, a member’s identity might initially be based on position (e.g., tenured faculty, junior faculty, graduate student, research assistant, etc.), disciplinary background (e.g., psychology, management), or institution (e.g., Harvard, Wash U). Over time, however, the team forms a transactive memory system (Lewis, 2004) where team members understand who has certain skills and interests and members become identified by their contributions to the team (e.g., she’s the teams person, he’s the identity person, she’s the statistics person). Moreover, because contribution identity is based more on skills, ability, and experience, it is more malleable than a position-based work identity and can allow the team to search for needed attributes when a new task arises.

In teams where contribution identity is more salient than work identity, team members who have the capacity to take on new or different tasks may be more proactive, stepping outside of the existing social hierarchy to address the situation at hand; additionally other team members may be less likely to penalize them for this deviance. This results from someone’s decoupling somewhat from their position in the hierarchy, which could previously limit them taking initiative regarding those higher in the hierarchy. At the same time, if proactive behaviors correlate with contribution instead of position, team members might be willing to encode others’ initiative as intuitive despite an “incongruous” position in the social hierarchy (Anderson, Ames, & Gosling, 2008), making penalties less likely. As individuals demonstrate task competence and

contribution to the team, their position in the social hierarchy may change as other members' expectations change (Anderson, Willer, Kilduff, & Brown, 2012), even if just for the duration of the task. If this happens repeatedly, over time the social hierarchy may become more dynamic. In other words, the team may become more responsive to the situation or task, instead of remaining fixed to members' position in the hierarchy.

The collective-orientation of a team members' contribution identity may also buffer individuals who might otherwise experience professional identity threat. Professional identity threat is a perception of risk when Member A's professional group feels vulnerable as a result of another professional group impinging on Member A's profession's occupational jurisdiction. This perception results in Member A expending effort to protect their professional boundaries instead of engaging in teamwork (e.g., Hogg & Terry, 2000; McNeil, Mitchell, & Parker, 2013; Steele, Spencer, & Aronson, 2002). Yet, crossing occupational jurisdictions is a critical part of teamwork as people negotiate new tasks that cut into areas previously the domain of particular professional groups (Wrzesniewski & Dutton, 2001). Collective identity can diffuse professional identity threat (Mitchell, Parker, & Giles, 2011) and allow for more flexible work arrangements, in the best interest of the team without threatening individuals.

Contribution-congruent emotions and behaviors. Emotions are critical to people's experience of power and their willingness to be proactive in their team (e.g., Drescher, Korsgaard, Welpe, Picot, & Wigand, 2014; Martorana, Galinsky, & Rao, 2005; Tajfel & Turner, 1986). Positive emotions and emotions associated with high power—such as anger or pride—have been found to lead to proactive behaviors, while negative emotions correlate with inhibition (Keltner et al., 2003). Martorana and his colleagues (2005) theorized that lower-power people would be most willing to challenge the hierarchy when they experienced a sense of power, felt

high-power emotions, and believed the hierarchy illegitimate. These authors suggested that lower-power people would have to feel emotions incongruent with their position in the hierarchy in order to take action. However, if team members focus more on contribution than position, they may experience emotions that promote action when they believe they can make a contribution, regardless of their position in the hierarchy. In these cases, emotions that lead to action could decouple from position-power and instead couple with contribution expectations. This in turn would allow contributions to undermine stable social hierarchies, as people took on position-incongruent emotions and behaviors for the benefit of the team.

Literature on extra-role behavior provides evidence that position-incongruent but contribution-congruent behavior does occur. This literature finds that people take actions outside of their position for the benefit of the organization (e.g. Van Dyne, Cummings, & Park, 1995). While there are a variety of categories of extra-role behaviors, two categories are more likely to happen in a dynamic context (as opposed to a stable context), *challenging/promotive* and *affiliative/prohibitive*. The latter category, *affiliative/prohibitive*, has been used to describe behaviors where a more senior person prevents behavior that would hurt a more junior person. The former, *challenging/promotive*, describes “employee voice” and “taking charge,” which have received a great deal of scholarly attention (Morrison & Phelps, 1999; for a review of the employee voice literature see Morrison, 2011). Challenging means the behavior focuses on changing the status quo, while promotive means that it is meant to be constructive to the organization. In speaking up (voice) and taking charge, a lower-power person contributes recommendations or actions, respectively, that are meant to change how work is currently done (e.g., Detert & Burris, 2007, p. 869; Morrison & Phelps, 1999). Challenging/promotive behaviors do not occur—instead organizational silence prevails—when lower-power people fear higher-

power people's reaction (e.g., Detert & Edmondson, 2011; Milliken, Morrison, & Hewlin, 2003). Whether these behaviors are well received and lead to change depends on the congruence between the lower-power speaker and the higher-power recipient regarding the lower-power person's contribution (Burriss, Detert, & Romney, 2013). This suggests that both challenging/promotive behaviors and organizational silence are "collective-level phenomena" (Morrison & Milliken, 2000, p. 707); this has implications for teams, as teams that share a fit-based schema and use contribution identities may be more likely to engage in contribution-congruent behaviors.

IMPLICATIONS FOR THEORY ABOUT SOCIAL HIERARCHY IN TEAMS

Methodological implications: time frame, team-level differences, and context

Change takes time, and change processes demand examination over the duration of an entity's existence, whether that entity is an organization or a team (Van der Ven & Poole, 1995). This does not mean that any study of social hierarchy requires a longitudinal approach; however, it does suggest that if the object of the study is to understand how social hierarchy changes or what it looks like when it is dynamic, longitudinal approaches would be appropriate. Some scholars who explore more dynamic aspects of social hierarchy are already moving in that direction (Kilduff & Galinsky, 2013).

Klein and colleagues (2006) studied medical teams in health care, an industry known for its strict adherence to a stable social hierarchy that is based on work roles, examining specifically extreme action teams—an example of teams quickly adjusting to a changing context and team composition—and found dynamic delegation and shared leadership between junior and senior doctors. The teams had strong hierarchy, and "dynamic delegation rest[ed] on and reinforce[d] status and expertise differences among members" (p. 618), but these differences did not result in

a rigid hierarchy. Rather, the hierarchy shifted, permitting the team to be responsive to their environment while novices could learn. Also of note, the action teams studied were together for 15 to 60 minutes, about the length of a lab study (p. 595); however, these action team members were drawn from three crews that rotated members every few weeks, and these crews existed within a wider organizational context. The data collection—observations and interviews—used to construct Klein et al.'s (2006) findings spanned three years, suggesting that long periods of time play a key role in the dynamics these scholars discovered.

Change does not happen uniformly within a team, because people may be more or less anchored to the status quo. The literature on diversity suggests ways to study change processes over time. Jackson, May, & Whitney (1995) pushed scholars to think about how teams moved from surface- to deep-level evaluations; they suggest that, at the team level, it is important to understand patterns or differences—what happens when part of the team is still anchored on surface-level attributes, while the rest of the team begins to use more deep-level attributes. They point to the importance of considering mediating states and processes across individual, interpersonal, and team levels to understand the shift from one type of attribute to the other. Similar considerations may be needed to understand how teams shift from more stable to more dynamic social hierarchies or to understand how dynamic social hierarchy manifests. Also, contrasting how change occurs for higher- versus lower-power people might be informative. As Bunderson and Reagans (2011) wrote:

[The] evidence suggests that when social hierarchies are unstable, high- and low- ranking actors appear to reverse roles when it comes to their approach and avoidance behavior. Lower-ranking actors become more proactive, goal-directed, and risk-seeking; higher-ranking actors become more reactive, defensive, and distracted. This suggests that learning and innovation in unstable social hierarchies may begin with and emerge from the lower rank. (p. 1191)

Role reversal would, of course, impact the social hierarchy on the team. While bidirectional influences are likely, it is important to understand when more unstable social hierarchies lead to changes in behavior and when changes in behavior destabilize the hierarchy.

Context is also critical for the study of social hierarchy, particularly in organizational teams. Individuals are embedded in teams, in turn embedded in organizations and societies, creating interdependencies across levels. Team scholars have long studied adaptive processes (Poole, 1990; Ancona & Chong, 1996, 1999; Ancona & Caldwell, 1992; Kozlowski, Gully, Nason, & Smith, 1999) and highlighted teams' need to adjust to their context to remain effective. Studying social hierarchy in teams without context, or in teams operating outside of their usual context, would prevent researchers from understanding antecedents of a dynamic social hierarchy, namely the causes and effects of a changing context, changing team tasks, and changing team membership.

Not all contexts are created equal for studying changes to social hierarchy or observing dynamic social hierarchy. These undercurrents might be difficult to observe in organizational teams working on stable tasks, with stable team membership, during equilibrium periods. Looking at industries or organizations that actively change their structure or respond to societal and regulatory demands might provide more examples of changing hierarchies. Health care organizations have been going through a significant transition period as they move to more team-based structures (e.g., Grumbach & Bodenheimer, 2004; Kilo & Wasson, 2010; Wynia, Von Kohorn, & Michell, 2012), so may be a particularly interesting industry in which to study changes in social hierarchy. Professional service firms also increasingly face client demands to deliver integrated services, leading them to use teams to force collaboration among professionals whose social status was previously tied to independent work (Gardner, 2015). To compare

stabilizing and destabilizing processes to social hierarchy within the same teams, it may be fruitful to explore teams with a long history (e.g., NASA teams, Lakhani, Lifshitz-Assaf, & Tushman, 2013; Lifshitz-Assaf, 2015) who encounter external shocks and are forced to adapt to a new environment.

Lastly, measures used to operationalize social hierarchy also need to be explored. Stable social hierarchy and dynamic social hierarchy map onto the disparity—“differences in concentration of valued social assets or resources...vertical differences that, at their extreme, privilege a few over many”—and variety—“differences in kind of category, primarily of information, knowledge, or experience among unit members”—measures described by Harrison and Klein (2007, p. 1200). If we conceptualize a position-based or rigid hierarchy in which asymmetry is important, it will be critical to measure distance between members and differences in dominance levels across high and low members; measures such as the coefficient of variation or the Freeman or Gini indices are suitable. However, if the social hierarchy is conceptualized from a contribution-based or dynamic perspective, then using measures that capture levels of variety such as Blau’s index might be more appropriate.

Exploring the non-zero sum dimension of social hierarchy

Scholars increasingly explore the non-zero sum dimensions of social hierarchy—if one does not think of social hierarchy in terms of one absolute rank, none must move down when some move up (Hurwitz, Pettite, & Blader, 2016; Yu & Greer, 2015). This may be especially true in teams that use schemas and identities, such as a contribution identity, that are not rank-based. In these teams, members may have more opportunities to form positive performance expectations of each other, because team members engage in proactive behavior regardless of their position in the social hierarchy. For example, if other team members have seen Member A

demonstrate his knowledge, skills, and experience, they may feel less threatened and more likely to agree when Member A tries to influence them. This phenomena may have a cascading effect across team members.

Absence of threat, however, may not be the only emotion to undermine a zero-sum perspective of social hierarchy. Relief and pride in others might also be important to explore. As Gardner (2012) and other scholars have documented, many teams work under intense performance pressure, in addition to time and crisis pressure. These pressures cause teams, which otherwise relied on the specialized knowledge of people who hold positions low in the hierarchy, to defer to the generalized knowledge of people higher in the hierarchy. However, that fallback does not imply that those higher in the hierarchy appreciate or even welcome the additional work. In health care, burnout is a huge concern among doctors (Linzer et al., 2005; Shanafelt et al., 2012), who have long complained that they perform tasks that could be done “by someone with far less training” (Sibert, 2014). Creating conditions such that non-doctor team members do not just take on the unwanted lower-status dirty work (Abbott, 1988), but also have the authority to conduct meaningful work that taps into their deep-level attributes (Aiken & Sloane, 1997), might be a collectively beneficial source of relief for overworked higher-power team members. Also, having a collective orientation may mean that the team recognizes that when individuals gain greater authority over tasks where they have relevant expertise, the team overall performs better and gains more power in the organization.

Delegation that doctors experienced in the teams that Klein and colleagues studied (2006) is an example of a process facilitated by pride in others. In apprenticeship settings where more senior team members train more junior team members, the success of the junior members provides intrinsic satisfaction and pride for their mentors (Kram, 1983). The process of training a

protégé necessarily involves disrupting social hierarchies; protégés are meant to increasingly claim authority and exert influence, and their mentors can grant them deference in some situations and not defer in other situations until the protégé shows competence—this is naturally understood as a dynamic process of learning and sharing power.

CONCLUSION

Change in social hierarchies within teams over time is not just possible; this ability for dynamic shift also has important implications for organizations, teams, and team members. Yet, the processes that lead social hierarchies to be dynamic have received scant scholarly attention, while the processes that lead to stability are well established. I argue that this pattern results from a functionalist perspective or bias in the social hierarchy literature, which can be addressed by studying hierarchy from a more interactionist lens. This lens, along with an exploration of schema, identity, emotions, and behaviors as socialized or collectively oriented, can help researchers better understand dynamic elements of social hierarchies.

CHAPTER 3. MICROWEDGES: MOVING TEAMS FROM RIGID TO DYNAMIC SOCIAL HIERARCHY

Ninety years ago, Mary Parker Follett extolled the benefits of shifting from “power-over” to “power-with” (Follett, 1925). Follett described a behavioral change—a change from centralized to decentralized leadership. However, underlying that behavioral change was a change in social hierarchy, specifically a change in power and status: workers who were once seen as dispensable instead became integral as managers gained a better understanding of the knowledge and experience that they possessed. While social hierarchy, its benefits, and its drawbacks have increasingly been the focus of organizational and team studies (Anderson & Kilduff, 2009; Bunderson, Van der Vegt, Cantimur, & Rink, 2016; Fiske, 2010; Halevy et al, 2011; Magee & Galinsky, 2008; Ronay, Greenaway, Anicich, & Galinsky, 2012; Van der Vegt, de Jong, Bunderson, & Molleman, 2010), there has been limited empirical and theoretical work on *how* and *when* teams shift from a more rigid to more dynamic social hierarchy (with a few notable exceptions, e.g. Aime, Humphrey, DeRue, & Paul, 2014; Drescher, Korsgaard, Welppe, Picot, & Wigand, 2014; Klein, Ziegert, Knight, & Xiao, 2006; Martorana, Galinsky, & Rao, 2005). Thus, despite many years of advocating for more diverse participation and leadership, our field of organizational studies know little about how individuals in teams change the social hierarchy in which they are embedded.

Social hierarchies—the rank ordering of dyadic influence in groups—are pervasive (Bunderson, Van der Vegt, Cantimur, & Rink, 2016; Magee & Galinsky, 2008); we live in them every day. They form quickly as people fall into patterns of dominance and deference based on social and task-relevant cues (Bunderson, 2003; Tiedens & Fragale, 2003). Social hierarchies are prevalent in teams, regardless of whether the team is a microcosm of the larger organizational

power structure or is a newly formed team of peers (Alderfer & Smith, 1992; Bendersky & Hays, 2012; Klein et al., 2006). In many knowledge-based organizations, perceived expertise and competence is an important base of power, but perceptions often fall prey to pre-existing rank-based assumptions (Bunderson, 2003; French & Raven, 1959; Gardner, 2012). This is problematic because scholars have found that teams perform best when they recognize and utilize the expertise present in all of their members regardless of rank (Aime et al., 2014; Drescher et al, 2014; Ely & Thomas, 2001). While we know that some teams come to rely less on social surface-level cues and more on deep task-based cues over time, we do not know the process that leads from one to the other (Bunderson, 2003).

We do know that change in social hierarchy requires the participation of those higher and lower in the hierarchy and an understanding of the role of power in preventing and facilitating change (Battilana, Leca, & Boxenbaum, 2009; Hardy & Leiba-O'Sullivan, 1998; King & Pearce, 2010; Meyerson & Scully, 1995). Research on the role that leaders play in helping their teams move to more dynamic social hierarchy has focused on the behavioral (e.g., leader inclusiveness, leadership climate), structural (e.g., job design), and combination of behavioral and structural activities (e.g., empowerment) that leaders can engage in (Hackman & Oldham, 1980; Kirkman & Rosen, 1999; Maynard, Gilson, Mathieu, 2012; Nembhard & Edmondson, 2006). However, research has increasingly suggested that fostering a climate where people speak up does not mean that new information will be listened to or will effect change (Burris, Detert, & Romney, 2013; Fast, Burris, & Bartel, 2014; McClean, Burris, & Detert, 2013). Additionally, structural approaches to change in teams were popular several decades ago, but have not been a focus of study in recent years (Seibert, Wang, & Courtright, 2011), and the focus on leaders has

necessarily happened “at the expense of understanding the dynamic and social processes” in teams (DeRue, 2011, p.124).

In a complementary approach, scholars have increasingly focused on the emergent nature of change—change at the team-level that is driven by the interpersonal dynamics of individuals in the team (Kozlowski & Chou, 2012; Aime et al., 2014; Contractor, DeChurch, Carson, Carter, & Keegan, 2012). In a longitudinal simulation, Aime and colleagues (2014) found that power in the form of expressed influence can transition between team members if a task calls for different areas of expertise, and that teams that engage in these dynamic power transitions were more creative than other teams (provided team members viewed the transitions as legitimate). Aime and his colleagues (2014) did not study the power transitions per se but rather measured the degree of power transition using team questionnaires at the end of the study. Their study demonstrates the importance of a more dynamic conceptualization of influence in teams, but it leaves open the question of how teams become more dynamic over time.

A promising approach to exploring the process of moving toward dynamic social hierarchy is focusing on people lower in the hierarchy who would most benefit from such moves. Voice—the expression of “ideas, information, and opinions about work-related improvements”—is a means by which social hierarchy can change (Van Dyne, Ang, & Botero, 2003, p.1360). Deter and Burrell (2007) suggest that the content of what people voice to those higher in the hierarchy has the potential to “challenge and upset the status quo of the organization and its powerholders” (p.869), yet Morrison and Milliken (2000) suggest that employees often stay silent because they are in an environment that is not conducive to speaking up. So under what conditions do people speak? Who is more likely to speak? These questions have motivated scholars to engage in a rich discussion of mechanisms and antecedents related to

voice (e.g., Detert & Treviño, 2010; Kish-Gephart, Detert, Treviño, & Edmondson, 2009; Detert & Edmondson, 2011; Morrison, Wheeler-Smith, & Kamdar, 2011; Liang, Farh, & Farh, 2012).

However, as Morrison (2011) laments, much of the voice literature has relied on assessments done by the person who does or does not speak up and his or her supervisor, and most of these studies have been cross-sectional. These dyadic, cross-sectional approaches miss information about how one team member's voice behavior is received by team members who are higher, lower, or at the same level of the hierarchy and what, if any, changes it creates in the team as a whole. This is particularly important since team studies, such as those on learning, have found a reinforcing loop between individual actions and the team's ability to learn and change (Brooks, 1994). Yet there has been limited research into how voice leads to changes in the status quo for the speaker, the recipient, and the team. Without studies that look at the interplay of voice and team members' reactions over time, we miss information both about voice and about how it can help individuals and teams change the rigid hierarchy they are embedded in. How do team members lower in the hierarchy share information and perspective with group members who are higher in the hierarchy? What are the immediate and longer-term consequences of doing so? How do lower- and higher-power team members dynamically move toward dynamic social hierarchy? These were the questions that guided this study.

Questions that seek to understand how and when changes occur lend themselves to a longitudinal inductive qualitative approach. This approach is particularly helpful for understanding how events unfold over time (Langley, Smallman, Tsoukas, & Van de Ven, 2013). Capturing events over time is critical for the study of teams, which have lifecycles and experience growth and change at different points in time (Kozlowski, Gully, Nason, & Smith,

1999; Gersick, 1988, 1989; DeRue & Morgeson, 2007). I therefore selected this approach to understand how teams move to dynamic social hierarchy.

Understanding how hierarchy can change in teams is critical to organizations because, as Emerson (1962) observed, small group settings are the places in organizations where power and influence are negotiated and determined. In this study, I focus on multidisciplinary teams to understand how team members who occupy higher and lower positions in the social hierarchy interact to create changes to their team's social hierarchy. I observed team meetings, since they provide opportunities for team members to try out new roles that diverge from and challenge the organizational status quo (Howard-Grenville, Golden-Biddle, Irwin, & Mao, 2011; Ibarra, 1999). I inductively derived a process model that shows how extra-role behaviors that undermined the status quo provided a team with new information that was sustained by repetition or by fellow team members, helping to create cognitive and team process changes such that the team, over time, moved toward dynamic social hierarchy.

RESEARCH METHODS

I conducted a longitudinal inductive qualitative study to build theory about how team members helped their team transition from rigid social hierarchy toward dynamic social hierarchy. I used these methods because they are particularly well-suited for building and elaborating theory about how processes unfold over time (Creswell, 1998; Langley et al., 2013). I chose a setting that fit the conditions outlined by Martorana et al. (2005), where the existing hierarchy's legitimacy was increasingly called into question and where people felt they could create change. Within that setting, I chose clinics and teams that were interested in engaging in change efforts in their clinic and whose behaviors indicated that they believed they had the ability to create change.

Research Setting

I decided to pursue my research at Peoplehealth (all names are pseudonyms)—a public, academic health care system that had operated as a traditionally hierarchical organization. Like many leaders, managers, regulators, and insurers in the health care industry, leaders at Peoplehealth were trying to make the organization less hierarchical to improve performance (Starr, 1982; IOM, 2001; Scholle et al., 2013). Like many health care organizations nationally, Peoplehealth was seeking to shift its primary care clinics toward team-based patient-centered medical homes. The medical home model encouraged the creation of multidisciplinary health care teams, seeking to improve communication and coordination in order to make care more efficient and more responsive to patients (Crabtree et al., 2010; Kilo & Wasson, 2010; Nutting et al., 2009).

In this effort, Peoplehealth was faced with problems such as those described by organizational scholars Nembhard and Edmondson (2006): “a well-entrenched hierarchy exists in medicine, making it difficult to speak across professional boundaries (e.g., physician vs. nurse vs. therapists) to collaborate for learning” (p.943). In addition, health care professionals were increasingly aware that patients were frustrated by their “inability to participate in decision making, to obtain information they need, to be heard” (IOM, 2001, p.49). Doctors in particular had a poor reputation for sharing power and decision making with patients despite efforts to do just that (Karnieli-Miller & Eisikovits, 2009; Roberts, 1999). Peoplehealth was aware that employees lower in the hierarchy and patients often played a limited role in change processes, which was a common concern for organizations like Peoplehealth (Han, Scholle, Morton, Betchtel, & Kessler, 2013). I was interested in Peoplehealth’s new plan to use multidisciplinary change teams that included staff members and patients to create change in its primary care clinics.

Legitimacy for change in the organization. Since legitimacy is an essential foundation for changes in hierarchy (Martorana et al., 2005; Aime et al., 2014), it is important to note that the move to team-based medical homes was viewed as legitimate at Peoplehealth. In fact, the changes the organization was attempting to implement in 2012 were the culmination of a process that stretched back decades (Starr, 1982). Many of the ideas about health teams and medical homes that surfaced in the 1970s found a foothold as large, well-respected organizations called for changes in how health care is provided (IOM, 2001; Future of Family Medicine Project Leadership Committee, 2004; for a review see Kilo & Wasson, 2010). Like other award-winning health care organizations, Peoplehealth was at the forefront of this movement, consolidating hospitals and clinics and launching electronic medical records across all of its sites in the early 2000s. By 2010, Peoplehealth had decided that all of its primary care sites would become accredited medical homes and had created several senior leadership positions to oversee these changes.

Opportunity for changes in hierarchy. The process of adopting a medical home model was a disruption to the existing social hierarchy on at least two levels. At one level, it meant that senior leaders started to oversee clinics more closely and began to make decisions that had traditionally belonged to clinic managers. At a second level, it meant that power traditionally held by doctors was supposed to be redistributed between doctors, staff members, and patients if clinics were to operate as multidisciplinary teams—a requirement for being a medical home.

Data Collection

In line with other studies that look at change across time (Kaplan & Orlikowski, 2013; Gersick, 1989), I collected data using a longitudinal inductive approach to understand what was happening over time from a variety of perspectives (Creswell, 1998). Overall, I spent 31 months

in the Peoplehealth organization. This approach allowed for observation of the change process. It also allowed me to understand how different people experienced and contributed to the change process and how their position in the hierarchy and the context in which they were embedded might have impacted that experience. Importantly, my observations were informed by theories of interpersonal and team dynamics and change processes overlaid on what I was seeing.

Partnership Group. The Partnership Group created and launched the change teams across Peoplehealth. It was created to support the senior leader overseeing the shift to medical homes in Peoplehealth's primary care clinics, so it was not affiliated with any particular clinic. Observing the group provided me with information about the larger organizational context of the multidisciplinary change teams, as well as an understanding of the initial conditions under which they were created, which is important given the influence of early events on a team's trajectory over time (Ericksen & Dyer, 2004; Hackman, 1987). As a participant observer I volunteered to take notes and provide the group with summaries of their meetings and email exchanges. I attended 42 meetings (approximately 65 hours) of the Partnership Group from May 2012 until June 2013. After I stopped participating in the group in 2013, I was able to continue interviewing the senior change leader for the duration of the study and so continued to have access to senior-level conversations and documents.

Change teams. While observing the Partnership Group, I learned about all the Peoplehealth primary care clinics and was able to watch several change teams launch. I purposely engaged in theoretical sampling, as is standard in qualitative studies, selecting change teams that were excited about creating change, thereby serving as a place to observe this process unfold. I sought to vary whether or not practices were residency sites, since the presence of young doctors might affect how teams engage with change efforts. Different clinics were also

part of different regional learning collaboratives, including an intense academic one, so I wanted to ensure that all the sites that I studied were not part of the same collaborative. I chose to study the change team at three clinics: North, Central, and South. The clinics operated independently in different neighborhoods, but as part of the Peoplehealth system they were similar to each other in terms of technology, equipment, staff credentials, patient population, and access to auxiliary services. I observed them from their first or second team meeting in the summer of 2012 until June 2014.

The change teams were multidisciplinary, with at least one member from each major discipline at the clinic (i.e., a senior doctor, junior doctor, manager, non-physician faculty member, nurse, medical assistant (MA), receptionist, and patient), and some teams also included a social worker, physician assistant, or multiple doctors (see Table 1). The managers and doctors (and the faculty member who led the North change team) held roles that were high in the traditional medical hierarchy, while staff members and patients held roles that were lower in the hierarchy (there was only one physician assistant on these teams and that person held an in-between position). Two clinics had piloted change teams during the months before the official change teams were launched, and these change teams were the first opportunity many members had to work in a stable multidisciplinary team. The change teams were encouraged to generate their own purpose statements describing the organizational change work they were engaging in (see Table 3).

Table 2. Change teams' previous experience, composition, and meeting times

Clinic	Previous Experience	Change Team Members	Change Team Meeting
North	A behavioral health faculty, medical assistant, and patient were part of another improvement team for approximately six months before the change team	Operation manager ² Behavioral health faculty ¹ Senior doctor ¹ Junior doctor ⁵ Junior doctor Nurse ² Medical assistant ³ Receptionist ³ Patient ³ Patient ²	2 hours / every week
Central	An operation manager, one senior doctor, physician assistant, nurse, one medical assistant, and receptionist were part of another improvement team for seven months before the change team	Medical manager ² Operation manager ¹ Senior doctor Senior doctor Junior doctor ² Physician assistant ¹ Nurse ³ Medical assistant Medical assistant ² Receptionist ³ Social worker ² Patient	1 hour / every two weeks (met for 2 hours initially)
South	There had not been an improvement team in recent years before the change team	Medical manager ² Operation manager Senior doctor ¹ Nurse practitioner Nurse Nurse ² Medical Assistant Medical Assistant Receptionist Receptionist ³ Patient ¹ Patient ⁴	2 hours → 1.5 hours → 2 hours / twice a month

¹ Denotes that this person served as team leader at some point during the study; ² indicates that this person was not present for some part of the time either because they joined the team late or they took a leave of absence; ³ indicates this person quit and was replaced; ⁴ indicates this person quit and was not replaced; ⁵ indicates this person graduated

TABLE 3. Purpose statements generated by the change teams at North, Central, and South

Clinic	Team-generated Purpose
North	“To improve patient experiences and outcomes by building an efficient, creative, and joyful workplace”
Central	Didn’t have a formal purpose statement but discussed: listening, including a broader perspective, patient and staff satisfaction, thinking creatively, seeing the whole, making people feel like shareholders and stakeholders even if they are not; having an improvement focus and measuring progress
South	“[Change team] is dedicated to looking at [South’s] processes and developing realistic and sustainable improvements through teamwork in which all aspects of the clinic have representation, including the patient, to develop a holistic approach to patient-centered care. To make a more functional and efficient clinic for patients and staff, leaving time to go the extra mile. To provide a system in which patients can connect efficiently with the practice at all levels.”

I wanted to understand how team members, which included individuals at different levels of Peoplehealth’s traditional medical hierarchy as well as patients, created change. Over time, I realized that the change that was most interesting to me was occurring within the teams themselves. My data collection involved observing the interpersonal interactions—micro-processes—that led to change (Howard-Grenville et al., 2011). Because I could not do this through interviews or surveys alone, I attended as many of the change team meetings as possible: North had weekly two-hour meetings, and I attended 78 of 89 (88%); Central had hour-long meetings every other week, and I attended 46 of 52 (88%); South’s meetings varied between one and a half to two hours twice a month, and I attended 22 of 35 (63%). I sat at the table as the team met, and I took verbatim notes on my laptop. I also collected team emails and meeting minutes, so I have information for all but six of the meetings during the observation period. I spoke with team members before and after meetings and conducted unstructured interviews throughout the study period to clarify or better understand topics that had come up during the team meetings. If the change teams traveled to conferences or other clinics, I went with them. To

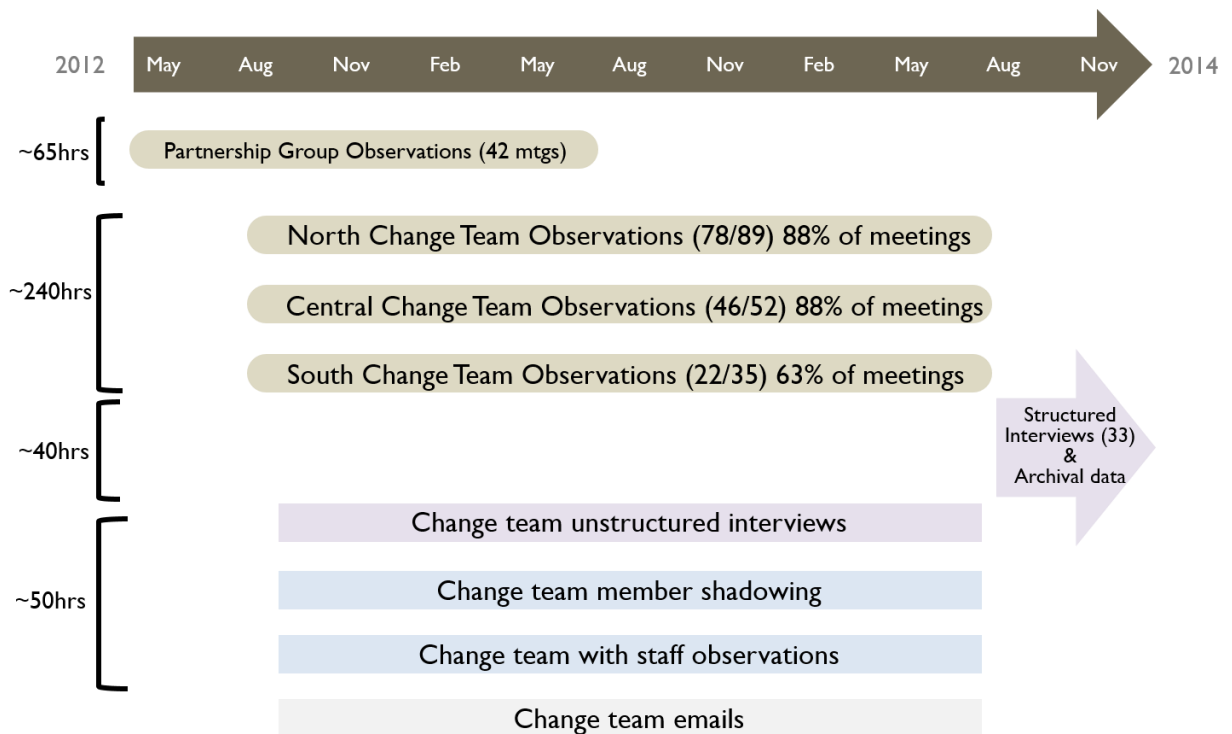
better understand each clinic and its roles, I shadowed at least one person from each role during their workday and attended several all-staff meetings where the teams engaged with all the clinic's managers and employees.

Conducting fieldwork work requires building rapport with informants and what Corbin and Strauss (2008) call "sensitivity" to gain a deeper appreciation for their perspective, interests, and concerns, since these are entwined with their day-to-day work (Golden-Biddle & Locke, 1993). I shared a similar education background with the managers and doctors that I observed in the change teams. They were curious about my academic program, which often served as a starting point for inviting me into their conversations. The vast majority of staff members were female and minorities who invited me to join them for meals or breaks. I spoke in Spanish (and later translated my interviews) when informants felt more comfortable in that language. The patients on the change teams that I observed were all female and were not at the clinics as often as other team members, so I sought them out before and after team meetings and interviewed them outside of the clinic throughout the study period to ensure that I was capturing their perspective. At the end of the observation period, I conducted semi-structured interviews with team members (except for one staff member at North, one at Central, and three at South) about their experience on the team, what they saw as the team's greatest impact and challenges, what they learned as a member of the team, and the team's relationship to the clinic and organization. I also interviewed one clinic manager at South, two managers at Central and North, and four Partnership Group members. The 33 semi-structured interviews ranged between 20 minutes and four hours, with the majority lasting an hour. I stopped collecting data in December 2014. Over the course of my observation period, I spent roughly 240 hours at change team meetings, over 50

hours shadowing change team members and conducting unstructured interviews, and an additional 40 hours conducting semi-structured interviews.

Archival data. I also collected archival material including clinic profiles and patient demographics to understand structural similarities and differences between the clinics. To better understand how the change to medical homes was being discussed in the organization, I collected information from the clinics’ internal websites, workforce surveys, correspondence from executives and leaders to employees, memos and materials used to explain the changes Peoplehealth was undertaking to employees, and newspaper articles and cases written about Peoplehealth. See Figure 3 for a summary of the data collection process.

Figure 3. Data collected at Peoplehealth



Analytic Approach

My focus on the microwedge process in helping teams transition to dynamic social hierarchy developed over time. The core concepts developed in this study were the result of ongoing iteration among data collection, analysis, writing, and reflection (Corbin & Strauss, 2008). I used a timeline approach to trace events over time that allowed me to engage with concepts in a flexible way, which was crucial since what I observed at one point might be very different from what I observed in the same individual or team at a later point. My analytical approach loosely fell into four stages that cycled over time: descriptive memo writing, open coding of key periods and events, analytic memo writing, and comparing my findings with the literature. The process of writing descriptive and later analytical memos helped me discover that early individual behaviors helped shape team interactions much later.

In the first stage of analysis, descriptive memos helped me capture and explore some of the interactions that were puzzling. Why, for instance, was a receptionist on the team being asked by her manager to “fluff” (speak extra politely) to doctors when the clinics were trying so hard to encourage open participation? It was in engaging with these puzzles that discrepancies between espoused and enacted behaviors became much more salient. Once I noticed these discrepancies, I realized that others, particularly staff members and patients on the team, had not only noticed the discrepancies but were engaging in a great deal of sensemaking that informed how they interacted with their team (e.g., the receptionist suggesting that doctors fluff back). I had the opportunity to probe my observations during unstructured interviews before and after meetings. As I worked through these puzzles to describe the relationships between the individuals that I was observing, I made sure to capture and incorporate the team and clinic contexts.

In the next stage, once most of my observations were complete but before I conducted semi-structured interviews, I began open thematic coding, line-by-line, of the transcripts and

emails (Charmaz, 2006). In order to get a sense of what team dynamics looked like across my period of analysis and to spot different patterns, I coded meetings from the beginning, middle, and end of my observation period and then coded from there, tracing themes of interest as they developed over time.

In trying to analyze how key events and changes came about, I shifted into writing analytical memos supplemented by more focused coding in which I started to concentrate on power dynamics and the impact this had on participation. I also wrote case histories about key people, tracing their stories, and then analyzed these narratives to more deeply understand the relationships that were unfolding on the team. It was during this process that I began describing behaviors as microwedges, which was initially just a shorthand way of suggesting that these behaviors seemed to have interesting downstream implications. Through constant comparison, I was able to compare events and roles across clinics to better understand how the teams were interacting with the broader organizational context in which they were embedded (Glaser, 1965).

I was immersed in the literature throughout every stage but particularly after key themes had emerged from my data. I compared my observations with existing theories to better understand what I was observing. My analysis also relied heavily on writing and discussing my observations and emerging constructs with colleagues, especially with the two research associates who helped me organize and code sections of my data (Golden-Biddle & Lock, 2007). Though there is a difference between writing for analysis and writing for an audience (Charmaz, 2014), both helped to push my theorizing process and forced me to engage with new theories and literatures, as is often the case with inductive work. These discussions were critical for theorizing as they provided moments of reflection and realization (Weick, 1995).

MICROWEDGE PROCESS IN THE EMERGENCE OF DYNAMIC SOCIAL HIERARCHY

Analysis across the teams over time indicated that the behavior of one member (e.g., a change team patient) at one moment in the team's life might impact the way others (e.g., change team doctors) thought about their own behavior at a later point in time. I called this a microwedge process trigger—an extra-role behavior providing information that undermines prevailing conceptions and was not previously held by the team. I use Van Dyne, Cummings, and Parks' (1995) definition of an extra-role behavior:

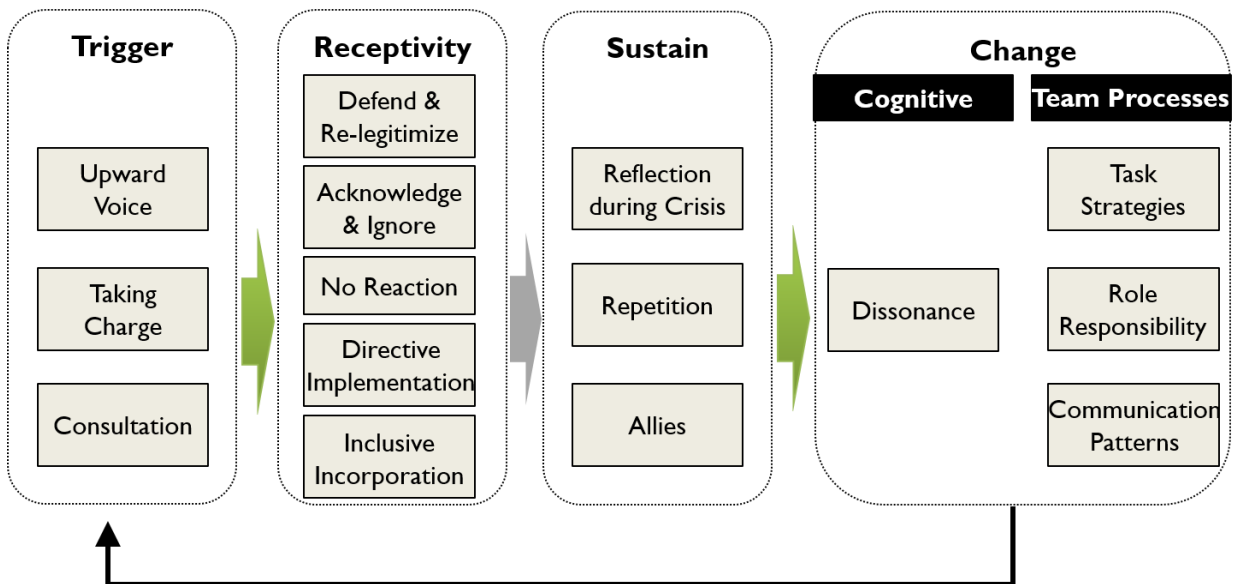
[Behavior] which benefits the organization and/or is intended to benefit the organization, which is discretionary and which goes beyond existing role expectations (p. 218).

These behaviors could be exhibited by any member of the team, and I did indeed observe doctors and managers engaging in them; however, I found that staff members and patients were more likely than doctors and managers to engage in extra-role behaviors, especially earlier in the life of the team. When doctors went outside of existing role expectations, for example taking on responsibilities that managers performed, these behaviors served to reinforce the existing hierarchy and did not undermine the status quo, so I did not code them as extra-role behaviors. When a doctor told the nurse on the team “no one is going to tell you, you look at the list and decide [which patients to contact for preventative care]” (North, 12/6/2012), I did not code this as an extra-role behavior. The doctor's statement did undermine the status quo in asking the nurse to take on more responsibility, but the doctor did not provide additional information that was not previously held by the team, even when it was solicited—in this case by the nurse who (with the help of the receptionist) tried to better understand how these decisions had been made to get a better sense of how she might make them. Information that supports the behavior

undermining the status quo was critical in the absence of a setting in which staff and patients felt comfortable making decisions that were not traditionally in their domain.

Staff and patients commonly provided new information that supported their extra-role behavior precisely because it was undermining the status quo. They seemed compelled to explain why they were speaking or acting out of role, and it was this information that the team could now incorporate into their shared team knowledge (i.e., a transactive memory system) that helped them keep track of what team members thought or what they could do (Lewis, 2004). All extra-role behaviors were not microwedge process triggers, and in this paper I only focus on the ones that became triggers.

Figure 4. Microwedge process model



In the microwedge process model (Figure 4), I depict the three ways that extra-role behaviors manifest in my data: upward voice, taking charge, and consultation. Upward voice has been widely studied and defined. The definition that most closely mirrors my data is Detert and

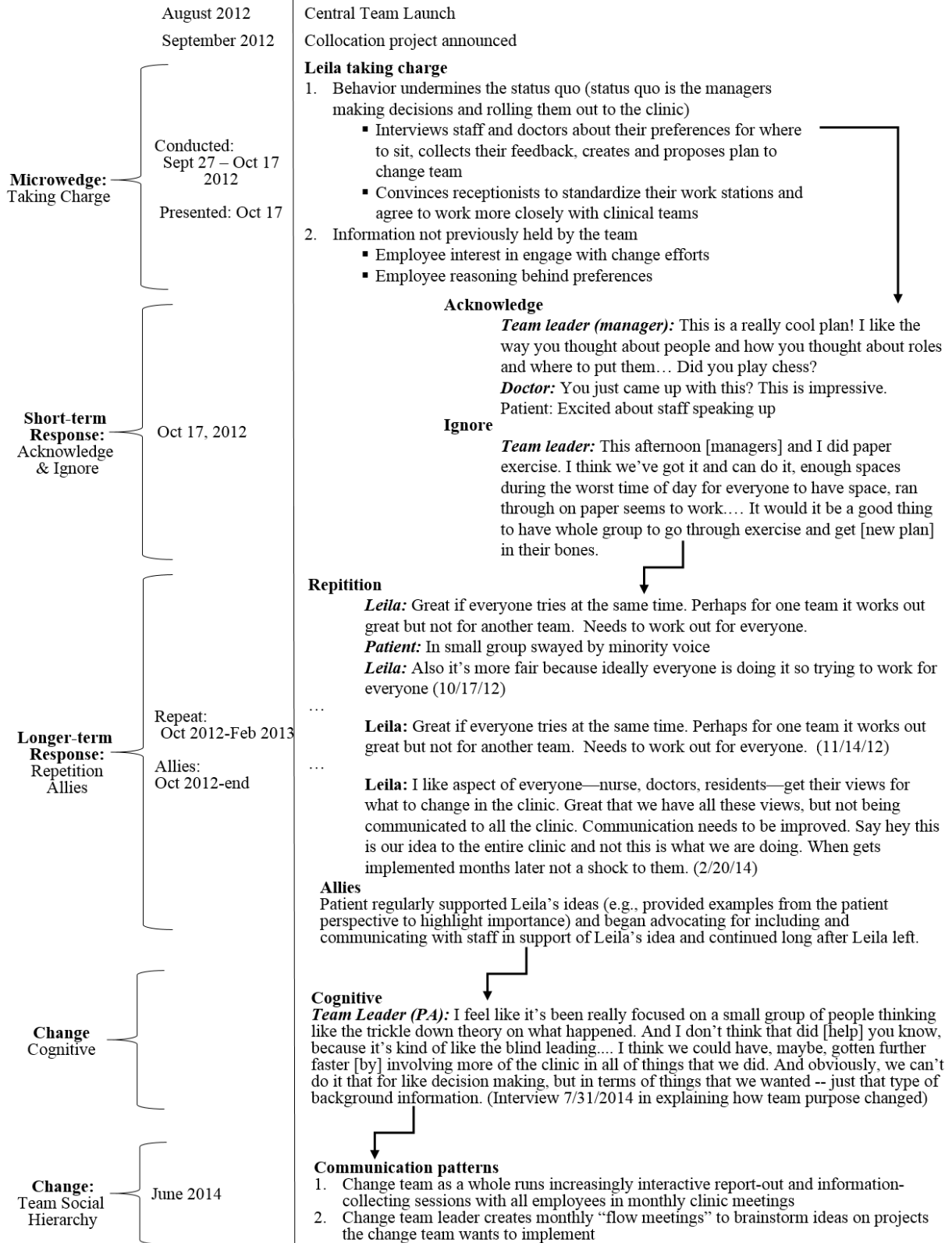
Burris' (2007): "[The] discretionary provision of information intended to improve organizational functioning to someone inside an organization with the perceived authority to act, even though such information may challenge and upset the status quo of the organization and its power holders" (p.869). Taking charge is a different type of extra-role behavior that does not fall into the voice category. Morrison and Phelps (1999) describe taking charge as discretionary behavior that is change-oriented and aimed at improving how work is executed within the organization. While upward voice provided verbal information via questions, disagreements, or suggestions, taking charge in my data involved action (or reports of past actions) that demonstrated capabilities that were previously not associated with the role of the person taking action. Consultation is defined as "[soliciting] and listening to employees' suggestions or concerns on work-related issues" to improve organizational functioning (Tangirala & Ramanujam, 2012, p. 252). Consultation is different from more diffuse actions leaders take such as encouraging inclusiveness and fostering a climate for speaking up (Nembhard & Edmondson, 2006; Maynard, Gilson, Mathieu, 2012). In my data, consultation involved managers and doctors (members of the team who were higher in the social hierarchy) attempting to change the status quo by actively putting staff and patients (members on the team who were lower in the hierarchy) in positions where they could engage in upward voice or taking charge behaviors.

While the three extra-role behaviors (upward voice, taking charge, and consultation) that I observed were the triggers, my contribution is the process model that answers the questions: What happened after team members engaged in these extra-role behaviors? How did this result in changes to the social hierarchy? In my process model, these three extra-role behaviors can elicit a range of shorter-term responses that vary from least to most receptive. Regardless of the short-term response, these extra-role behaviors become microwedge triggers through three

mechanisms that sustain them over time and help create cognitive and process changes in the team.

I ground this conceptual process in two narratives that will help illustrate each step. The first narrative focuses on a taking charge behavior that Leila, a receptionist at Central, engaged in early in the life of the team (see Figure 5). The second narrative focuses on the upward voice that Betty, a patient at North, displayed several months after the team started working together (see Figure 6). I will use these narratives and several additional microwedge process examples to illustrate the process model.

Figure 5. Microwedge process example: Taking charge



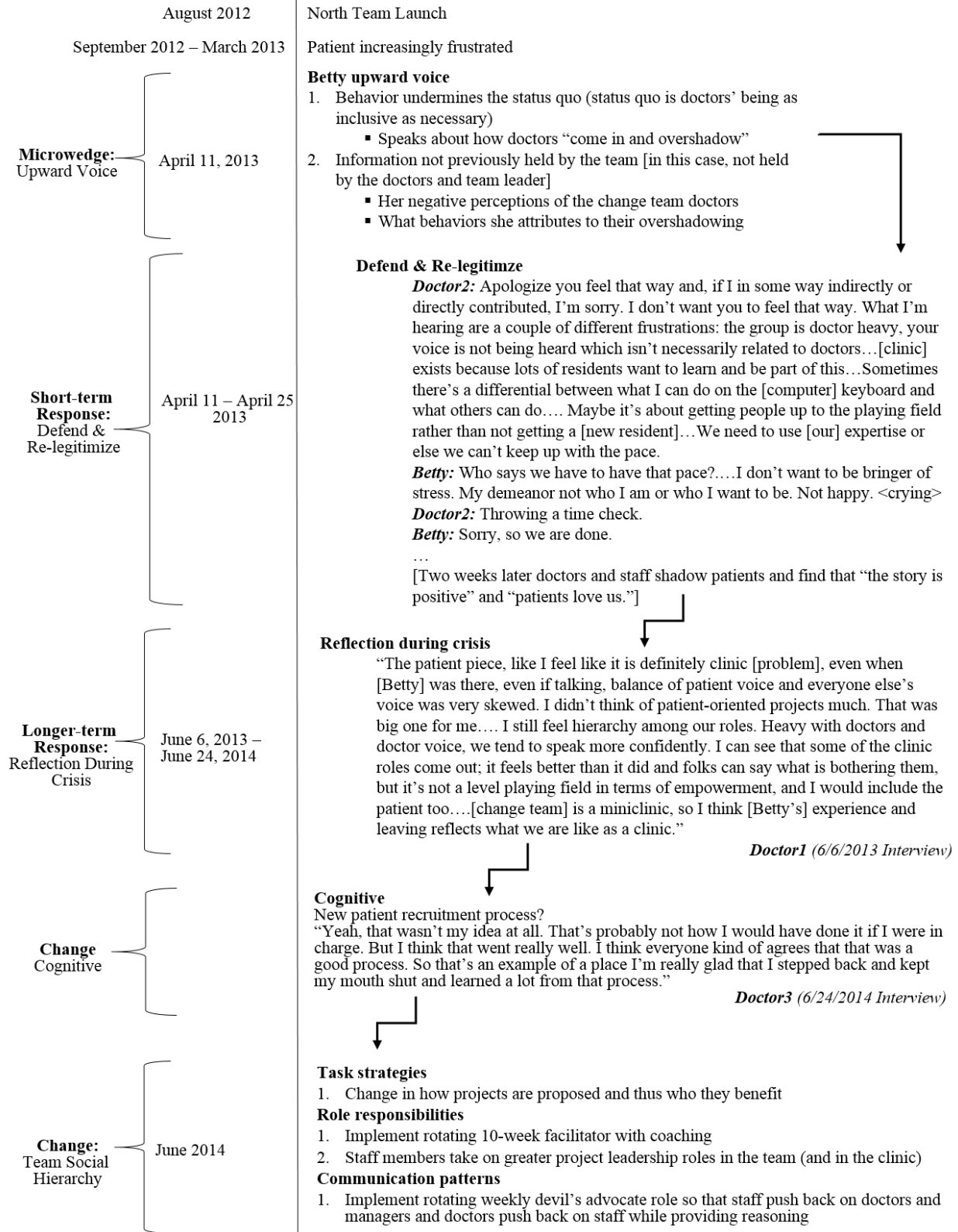
Taking charge. A taking charge extra-role behavior provides new information and undermines the status quo through actions or reports of past actions. Leila, the receptionist on the change team at Central, was known in the clinic for being highly motivated and competent. During a change team meeting (9/27/2012), the team leader (a clinic manager) announced that the team would take on a collocation project—getting employees in the clinic to sit with their clinical teams instead of with their role peers—and handed out floor maps instructing the team to think about where people should sit before the next meeting. Leila took it upon herself to spend her breaks over the next 20 work days talking to her receptionist colleagues as well as medical assistants, nurses, and doctors, asking them where they wanted to sit and why. Leila said: “Who am I to say that nurses, MAs [medical assistants], and others move? Why don’t I ask them what they think? So I did. I went and asked them and they liked it. Haven’t asked everyone but the ones that I did liked it” (10/17/2012). Leila drafted and revised the floor map until the employees she approached signed the back of her sheet to show that they liked her plan. During the same few weeks, she got the receptionists to standardize their work stations and to agree to change where they sat to work more closely with the clinical teams. When she shared her work, Leila showed the floor plan, explained how it worked, and explained why people in different roles had the preferences that they did.

Leila’s taking charge behavior undermined the status quo by showing that a receptionist was self-motivated to take on the organizational work that had previously been in the domain of higher-power employees (i.e., managers). Specifically, it demonstrated that a receptionist could solicit and process information from people across the clinic, including doctors; that a receptionist could propose a reasonable solution to an organization-wide problem; and that a

receptionist could convince her colleagues to adapt their work to be more team-based. It also provided new information to the change team about the clinic's willingness to work with them.

Taking charge behavior occurred throughout my observation period, but the nature of the acts changed over time: they were more direct (i.e., happened within the purview of the team) when the psychological contract (in this case the espoused goal of having all roles contributing to the change effort) was stronger and were more indirect (i.e., happened outside the team and were presented to the team once they led to a successful outcome) when the psychological contract was weaker (See Table 4a's taking charge).

Figure 6. Microwedge process example: upward voice



Upward voice. In my data, upward voice consists of questions or disagreement that names and starts casting doubt on the existing, mostly taken-for-granted, hierarchy in the change teams. As was common in medical hierarchies (IOM, 2001), patients on the change team were low in the social hierarchy because they were outsiders and because they lacked clinical expertise—I observed this to be the case despite the fact that the teams were working on organizational change. The first patient on the North team, Betty, had been at the clinic for over three years and with the change team since its pilot phase and said she saw her role on the change team as putting “a bug in their ear” and identified strongly as a change team member. She referred friends to North, telling them “you have to be my spy” and calling them to ask “how we did.” She said “I refer to [the clinic] as we.” Betty had an undergraduate degree in management and helped run a small business; in her previous job she had helped with project management and worked in a “group similar to [the change team] to test and retest.” Betty was retired and said she used to “look forward to coming. I’d jump out of bed and run to [the change team].”

I followed Betty closely throughout the fall of 2012 and through the summer of 2013. I noticed that she looked increasingly frustrated during meetings, and when I asked her how she felt, she said: “I think right now [medical assistant] who is more vocal feels shut down. [Nurse] is shut down. [Receptionist] is sometimes. It’s not good. Sometimes something in me senses it, and I feel like a protective bear and jump in” (3/15/2013). While Betty was concerned about people not participating, she thought that the team had a lot of promise. She described the doctors as “tenacious,” “hot” about getting work done quickly, and she said they would do an “excellent job.” She thought that team dynamics would change and even out. That lasted until April 11, 2013, when the team was deciding whether to replace one of its three doctors, who was a graduating resident, even though the team had only one representative of every other role. The

doctors and receptionist wanted to replace the resident to ensure that at least one resident was always at meetings. Betty thought there were too many doctors on the team. The rest of the staff members wanted to accept the replacement and move on, and the medical assistant tried to help Betty, telling her “you can’t have expectations” and to focus on the fact that the team’s work was getting somewhere. Betty, however, told the team’s doctors and leader:

I did a lot of thinking after the last meeting, about the whole [change team] and what’s not working for me. I think you are used to doctors doing certain things, but we are a distinct group and work in another way, but you [doctors] come in and overshadow.... Now how many times have people said something and the behavior is different. ... You don’t need multiple levels. [Doctors] on the team have strong opinions and personalities and other roles don’t have that. (April 11, 2013)

Betty was direct in her criticism of doctors’ behaviors on the team, and she did not make this statement lightly. Her voice was trembling and it was difficult for her to speak, but she took it upon herself to confront the doctors. Her assessment of the team was shared by staff members on the team when they spoke to me informally outside of meetings, but they never raised these issues in the team.

This moment of upward voice challenged the status quo by introducing a picture of the doctors that was jarringly different from how they viewed themselves. Betty provided doctors with information they did not have, including how a patient perceived their behavior and how their personalities overshadow the rest of the team. This insight into the team’s dynamics had previously been hidden from the doctors—they knew that doctors, in general, were known as dominant but they described themselves as contributors who encouraged other people. The doctors on the three change teams that I studied volunteered to join the team for no additional pay, often working on team projects through their breaks or in the evenings because they said they wanted to get to know and work collaboratively with staff and patients to improve the clinic for everyone. The attending physician on the North team described herself as “in sync with the

mission and vision of Peoplehealth... to work with the underserved and [be] more progressive.” In their public profiles, the doctors’ interests included social justice, poverty, and activism. The doctors on the team were “not in it for the money,” and it was well-known that this particular field of medicine was not lucrative. Instead, they said and reiterated during my entire observation period that they were pursuing careers in primary care because of their commitment to helping patients and their communities. Betty’s information was in clear contradiction of the doctors’ stated intentions and descriptions of themselves and their behavior.

The upward voice acts that I observed criticized problems due to hierarchy. I observed upward voice by team members who had low satisfaction and believed that the psychological contract of the team had been violated; it is not surprising that these acts were received negatively by the team, as I will describe in subsequent sections. Scholars had proposed that these behaviors were more likely to occur in stable environments (Van Dyne et al, 1995; Staw, Sandelands, & Dutton, 1981), but I observed them happening in an environment characterized by change (see Chapter 2). Yet the nature of the change these clinics and teams were undergoing involved reducing hierarchy, so it is not unreasonable that upward voice acts would emerge in this type of changing environment.

Leila and Betty’s microwedge process triggers were two of 20 that I have observed in these teams. See Table 4a for a list of six additional microwedge trigger examples (three taking charge acts and three upward voice acts at different phases) whose development I will trace alongside the two narratives.

Table 4a. Additional microwedge process examples by phase

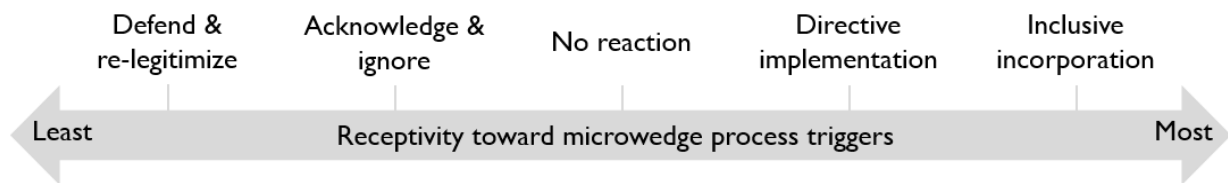
#	Team	Role	Approach	Microwedge trigger
1	North	Receptionist	Direct	<p><i>Taking Charge:</i> “I was not savvy with Excel when I got here, but [manager] said you need to manage this, so after two months I was OK...I will let the whole clinic know how to do [Excel tracking].”</p> <p><i>Context:</i> This statement followed the team’s realization that several doctors did not know how to do this Excel task which was their responsibility as clinic team leaders.</p>
2	North	Receptionist	Indirect	<p><i>Taking Charge:</i> Creates change in how receptionists check in patients (i.e., creating specialized workstations) by leveraging her role on change team to pitch ideas directly to her manager. Once it succeeds she brings it back to her team.</p> <p><i>Context:</i> Action follows inability to get her ideas on change team agenda so decides to do outside of team.</p>
3	North	Patient	Direct	<p><i>Taking Charge:</i> Thought change team was focusing on what patient could do without thinking about why patients weren’t currently doing it. Used Haitian patients she works with as an example of why culture matters.</p> <p><i>Context:</i> The change team was being asked to help the clinic figure out how to address problem areas like diabetes and was brainstorming ideas and talked about clinic staff going into community but was perceived as unrealistic. Patient was a health aide and worked in people’s homes.</p>
4	Central	Doctor	Direct	<p><i>Upward Voice:</i> Doctor described why she thought medical assistants (MAs) should help lead clinical team huddles.</p> <p><i>Context:</i> Doctors at this clinic were inundated with information about how MAs could lead huddles, but this was not happening in the clinic.</p>
5	Central	Patient	Direct	<p><i>Upward Voice:</i> Patient says managers need to get clinic on board with them by doing simple things like using project management software and important things like visioning sessions.</p> <p><i>Context:</i> Patient had worked in Canada at a health care organization that worked on change, and she felt that the clinic managers (including the team leader) were relying too much on themselves and too little on basic management tools and approaches that would allow other people to take on work.</p>
6	South	Medical Assistants and Receptionist	Direct	<p><i>Upward Voice:</i> Talk about how “stupid” it is that clinic has a committee to deal with “unfair” treatment of employees around vacation because it is actually a problem with managers.</p> <p><i>Context:</i> Ongoing issues between managers and staff that many doctors [including team leader] were not previously aware of.</p>

Timing. It was not a coincidence that Leila’s extra-role behavior occurred early in the life of the team while Betty’s extra-role behavior happened later. Early in these teams’ lives, when members were getting to know each other, discussing projects, and generally working hard to maintain a psychologically safe environment, team members gave each other the benefit of the doubt. During this early phase there was also limited evidence that the higher-power members of the teams would act unjustly or against the teams’ egalitarian purpose. When the teams were still in the glow of their inclusive purpose statements and stressed the need for participation to improve their clinics, Leila did just that. During the months that followed, at all three clinics, people on the change teams reverted to the ingrained medical and managerial hierarchy, and Betty’s extra-role behavior was in response to that shift.

Responses to Microwedge Triggers

The change teams had shorter-term responses to the microwedge process triggers that varied widely but fell on a spectrum from least to most receptive to the information presented (see Figure 7). The spectrum was in large part determined by the type of trigger as well as the phase of the team during which it occurred.

Figure 7.



Shorter-term responses to microwedge triggers. The responses to Leila and Betty varied, but the manager and doctor at Central and North, respectively, were generally on the least receptive end of the spectrum. The manager at Central acknowledged Leila’s contribution and

proceeded to ignore it in favor of a manager-developed plan. The doctor at North who was the main advocate for having three doctors on the team defended the existing team structure, and the team as a whole engaged in re-legitimizing behaviors both in the moment and two weeks later when they engaged in an exercise that required them to shadow clinic patients.

Acknowledge and ignore. When Leila reported the work she had done to construct a new seating plan, the immediate reaction was positive (see Figure 5). The patient on the team was particularly excited that the change team had allowed Leila to take on the project:

Patient: If you had thought of this before [the change team] started, would you have shelved it? If this process wasn't happening, if this occurred to you, would you have brought this up?

Leila: I had spoken to [submanager] about the nurses' station.

Patient: Now you feel like there is potential?

Leila: I feel like now change can happen with this team instead of feeling that I say something and nothing happens.

Patient: It's great that you can feel like talking about this!

Later in the same meeting, however, the manager returned to the topic of collocation by saying that she and her fellow managers had in fact developed their own seating plan and were open to input from change team members not on the plan itself, but on ways for employees to “get [the managers' new plan] in their bones.” Leila and the patient convinced the manager to at least begin with a trial of the managers' plan and collect feedback, but as soon as the trial was done, the essentially unaltered plan took effect immediately. Leila followed up for months about incorporating employee feedback, noting that the new plan was “working for some but not others,” but the manager explained that the plan was not very flexible—it had to take computer spaces into account and prioritize the needs of doctors, especially since two new doctors were joining the clinic. By December, Leila said, “This is all lies! They say they want to improve, but they are not changing, they are not improving.” Leila decided to not just leave the change team, but also the clinic two months later.

Defend and re-legitimize the status quo. After Betty’s microwedge trigger, Doctor2 addressed each of Betty’s concerns and explained why her perceptions were inaccurate. He explained how resident doctors are not like attending doctors because they “may speak similarly but don’t have the same perspective.” He went on to say that as a residency site the clinic “exists because lots of residents want to learn and be part of this,” which is noteworthy since he is telling a patient that the clinic exists for doctors. Doctors were not the only ones who defended the status quo—staff members also reined in members who challenged the status quo. During Doctor2’s exchange with Betty, the receptionist on the team chimed in:

In the beginning of the change team, I didn’t like it. I wanted to quit, but I thought ‘let’s try it out’ and then I ventured off and tried [change projects] on my own and now I like it. We are getting along. It’s just respecting your ground.

This receptionist had previously been frustrated by how her ideas were not taken up by the team, so she took them outside the team (see Table 4a, microwedge trigger 2). This receptionist attempted to communicate the message that the change team is the wrong place to bring up your ideas and opinions. She also told Betty that she should respect “your ground”—that she shouldn’t tread on the territory of others in the clinic. The receptionist helped to legitimize the status quo by suggesting more than once during the meeting that Betty should shadow her to learn how things are done at the clinic. Betty engaged in repetition, raising her concerns during the next few meetings, and then quit the team. The team reacted to the news of her departure by letting out a collective sigh of relief and talking about how Betty was probably busy or perhaps not feeling well enough to continue attending. They then avoided talking about Betty during meetings for the remainder of my observation period.

During the early and middle phases of the North change team, I observed that doctors used analytical language and carefully worded logic when responding to the concerns raised by

patients and staff members that they did not understand or agree with. Patients and staff members lacked the verbal finesse to argue with doctors directly and often expressed their frustration non-verbally with vacant looks, drawn faces, or they sat as far away as they could and leaned back. I made a note of this in my transcripts, but doctors and managers rarely commented on people's non-verbal behavior.

No reaction. After either upward voice or taking charge, a common response was no response—no one said or did anything other than move on to the next topic on the agenda. Observing this response, it looked like the contribution was not heard or at least not acknowledged. For example, in response to learning that several doctors in the clinic could not do the Excel task that they were responsible for leading in the clinic teams, the receptionist on the North change team shared that she had Excel skills, had acquired them as part of her job training, and was willing to teach the clinic how to do the needed tasks. No one said anything about this moment of taking charge during the rest of the meeting or the following few meetings (see Tables 4a, 4b, 4c; microwedge trigger 1). It seemed like no one heard what she said. Much of the time, no reaction meant no change in the moment, but it did not necessarily mean no change later on.

Directive implementation. Directive implementation happened when a team member, often a doctor or manager, decided that a certain aspect of the hierarchy needed to change and then attempted to change it (as through a consultation act). For example, the faculty team leader at North decided that doctors should not lead all the preventative care clinic team meetings and that nurses—the next group down the clinic hierarchy—should lead them instead. This approach often failed to create short- or long-term change because it did not use people's experience, skills, and interests to match them with tasks and continued to rely on hierarchy. In this case, the

nurses were not interested in leading, there were not enough of them to attend all the team meetings, and they also lacked the Excel skills needed for the task.

Inclusive incorporation. Having team members, particularly team leaders, make changes based on the content of microwedge triggers did happen. (For an example, see Tables 4a, 4b, 4c; microwedge trigger 3.) It mostly happened toward the end of my observation period, once the teams had significantly changed team processes.

Longer-term responses to microwedge triggers. Based on the shorter-term responses that both Leila and Betty experienced, it might seem that their microwedge triggers failed to create change. I did not, however, find that to be the case. While all the teams certainly lost competent and enthusiastic members, their impact did not leave with them. There were three main ways that I saw microwedge triggers endure: repetition, allies, and reflection during crisis. Only repetition required the person who originally introduced the microwedge to sustain it.

Repetition. Leila and Betty both engaged in repetition—that is, being persistent in sharing the information they contributed during their initial microwedge trigger—while they were still on the team. One of the benefits of repetition was to engage other members of the team. Leila was successful at getting the patient at Central to vocally support her work and information; over time, the medical assistant, physician assistant, and a doctor on the team also increasingly came to believe that clinic employees should be more involved in the change team work. Repetition, however, came at a personal cost and likely played a role in their decisions to exit their teams.

Repetition is a well-known and important aspect of minority influence (Nemeth, 1986). Persistence provides opportunities for fellow team members to hear the content of the information being shared and to re-examine their own assumptions related to that information.

While minority members—in this case a receptionist who was acting out of role and a patient who was an outsider—may not be highly regarded, their information can affect decisions later in the life of team. Nemeth (1986) found that minority members' persistence can lead to divergent thinking in the group because it encourages the team to consider a wider range of alternatives than it might have otherwise. In the microwedge triggers that I observed, repetition could lead to change on its own, but more often it took an additional path, through allies or moments of crisis and reflection.

Allies. Allies are people who support and use the information contained in a microwedge trigger. Since a microwedge triggers can have multiple pieces of information, allies gravitate to the piece that resonates most for them. At Central, Leila's microwedge trigger over time won over allies who continued to evoke Leila's information even after she had left the team. The patient explained to me that Leila was "a willing voice in the wilderness" who had great ideas, and that after Leila left the patient wanted to support the remaining staff so that they too could share ideas. Staff member allies, on the other hand, adopted the novel information that Leila introduced—clinic employees want to be and should be more involved with change team work.

Reflection during crisis. At North, Betty's name and her comments about doctors were not brought up during team meetings, but they also endured. Betty had provided everyone on the team, particularly the doctors, with an explicit picture of the reality as she saw it on the team. It was a negative reflection that planted itself in the minds of the doctors, even the third doctor who was not in the room on April 11 and heard a more toned down version of Betty's comments in subsequent meetings. It was the juxtaposition—the interpersonal incongruence—between how doctors perceived themselves and what they heard from Betty that started to cause doctors to think more and think differently about their role on the team.

The team experienced a minor crisis when Betty left since they were required to have a patient on the team. It would, however, take the medical assistant and then the receptionist quitting the team for the focus to shift away from the idea that the team leader and doctors' were dominating the conversation. When the medical assistant left, she said:

I decided to leave [the change team]. It was a good experience, and I learned a lot, but it's getting stressful. I'm leaving for two hours and letting down other MAs; we are so short staffed that every person counts. I feel like nothing happens and so I feel like I'm not a good groupmate. I'm going to miss you. I learned so many things, not just about teamwork but me, too. (MA, 7/11/13)

While the receptionist said the following when she left later that month

So this will be my last [change team meeting]. [Replacement] is really eager, and I'll still be voicing my opinions and will give suggestions. I think it's time for a fresh face and new ideas... I'm not leaving on a sad note—I'm not depressed or burnt out—but it's time for fresh thoughts and ideas, OK? (Receptionist, 7/25/13)

Though they did not talk about hierarchy when they left, in light of Betty's comments, their departures caused the remaining two doctors on the team to re-examine their own behavior:

For a few weeks I felt like it was kind of just me running my own meeting, which was fine. We were working on some projects, and it's still kind of a joy. But I think that kind of stark contrast—you know, I feel very young in this job—a young physician, a resident... I kind of learned the fact that, just being a doctor, people listen to you more than they probably should and especially for organizational management decisions since I have absolutely no training or knowledge base to apply to that. But since I'm a doctor people listen. (Doctor3, 6/24/2014 Interview)

It was after employees started quitting and not participating that the Central and North change teams were willing to seek and receive support and advice from other members of the clinic and organization. This was when they started meeting more regularly with the senior Peoplehealth leader in charge of medical homes. These resources had been available to them throughout, but it was after this moment that they started to more seriously embrace new perspectives.

Shorter- versus longer-term responses to microwedge triggers. Time mattered in how team members reacted to the microwedge triggers. Immediate responses were not indicative of future responses. This should not be a surprise, since social hierarchy is so difficult to change and has a large influence on day-to-day behavior (Magee & Galinsky, 2008; Thompson, 1961). The clinics and change teams that I observed were under external (industry) pressure and internal (negative evaluations from employees and patients who did not feel listened to) pressure to change. However, change team members' intentions to create change were not sufficient to immediately incorporate the information they were receiving from the microwedge triggers in their team.

One reason that I observed for the lack of short-term receptivity to microwedges triggers was a discrepancy between team members' beliefs that there was a problem of hierarchy in primary care clinics and their lack of belief that there was a problem on their own team. This was evident across the three teams but particularly at South, where the team leader (a doctor) and lead manager were adamant about the problem of people not speaking up in health care generally and in their clinic specifically, yet he (like other doctors) spoke so much on the change team that it was difficult for staff members to contribute. This is why allies and reflection during crisis were so important for everyone, but particularly for doctors and managers. It was no longer sufficient to think about and discuss problems abstractly, ignore them, or attribute them to other people, but rather they had to face concrete evidence that they had contributed to creating a bad situation in their change team. It was in thinking about their own behaviors that change in the team could start occurring.

Table 4b. Shorter- and longer-term responses to additional microwedge trigger examples

#	Shorter-term Response	Longer-term Response
1	<i>No response.</i>	<i>Repetition:</i> Receptionist reminds the team of her Excel skills when the topic comes up. <i>Allies:</i> Team members, including doctors, remind team that receptionists have this skill.
2	<i>No response</i> to ideas when brought up initially in team. <i>Inclusive incorporation</i> when she brings back success story.	<i>Repetition:</i> Receptionist brings up this idea (and other ideas) in the team more than once. <i>Allies:</i> In this case her ally was her manager who was not yet a team member.
3	<i>Inclusive incorporation:</i> The team immediately acknowledged current shortcomings and jumped on this idea, especially the senior doctor.	<i>Repetition:</i> Patient brought up her idea several times to help guide conversation back to culture. <i>Allies:</i> Second patient on the team jumped to support first patient's idea. Soon doctors and other members were working on figuring out problem and thinking about how to incorporate culture, including inviting Haitian doctor from another clinic who had a very successful approach.
4	<i>Directive implementation</i> by the doctor herself led to a lot of frustration for her clinical team.	<i>Allies.</i> A turning point came when the doctor invited her MA to join the change team. This MA became an outspoken member of the team and started working with the doctor to suggest how she and other MAs could take on more of a leadership role in the clinic.
5	<i>Acknowledge and ignore</i> by the manager and team leader who did not understand the suggestion.	<i>Repetition:</i> Patient brought up this idea regularly, helping push clinic to use consultants that came in to speak with clinic about change and interpersonal issues.
6	<i>Acknowledge and ignore</i> by the doctor who is sympathetic but has no idea how to be helpful.	<i>Repetition:</i> One medical assistant brings this issue up regularly.

TABLE 4c. Cognitive and team process changes that resulted from microwedge triggers

#	Cognitive Changes	Team Process Changes
1	Doctors and managers talked about importance of receptionists taking lead instead of doctors; receptionists agreed but pushed back against responsibilities perceived as unfair—would give them more work than other roles.	<i>Role responsibilities:</i> Change team, particularly doctor, brought in evidence from other clinics and own team to convince clinic that receptionists should lead or co-lead preventative care clinic groups. <i>Communication patterns:</i> Change was going to be difficult to implement in clinic and change team doctors and staff became vocal advocates, explaining why it was important to clinic.
2	Doctors realized they did not understand some of the proposed staff changes and needed to give staff ability and time to explain and show them how their approach worked.	<i>Role responsibilities:</i> New receptionist was proud of proposing and carrying out ideas that helped change team solve problem: “I’ve learned to work better with a team, make decisions—quicker decisions, know putting in my opinion is not going to offend anybody, getting closer with the doctors...[It] is a whole new world to be an influence like that. I thought it was fun, I enjoy it... I love going to [change team]!”
3	Doctors and staff members internalized patient’s idea (adopting it as their own) and engaged in deep critique of how things worked in their clinic.	<i>Task strategies:</i> The team had been contemplating things doctors could ask patients to do differently and their focus changed to what doctors could do differently. <i>Communication patterns:</i> Doctors took lead on raising clinic awareness (panel with community members and Haitian patient), changing how doctors and staff worked with diabetic patients in clinic (new patient groups).
4	The doctor proposing the change realized that she could not just force her staff to be leaders and it was the act of inviting the MA on her clinical team to join the change team that made her more cognizant of what she did not know.	<i>Role responsibilities:</i> The MA the doctor worked with (and later other MAs in the clinic) took on more responsibilities during team huddles. They saw this as an important part of their work because it was an opportunity to share information with and make requests of the doctor that made the team’s work easier and more on time because there were fewer unnecessary interruptions during patient visits.
5	Team leader started to understand the patient’s suggestion and sought more information for how to do it.	<i>Ongoing when I stopped observing.</i>
6	Doctor became much more aware that there were issues that were plaguing staff that he had not previously been aware of and could perhaps help staff work on.	<i>Communication patterns:</i> Though the question was not tackled head-on, there was a change in willingness to bring up the topic and to discuss it.

Individual and Team Changes

Change happened over time. After Betty spoke out about overshadowing doctors, nothing seemed to come of it until she had quit the team, and even then the full force of her information did not start creating changes in team processes for months. People higher and lower in the hierarchy on the team helped sustain the status quo initially and engaged in change over time. I saw that team leaders had to use that information and make changes to the team's processes before other team members had the opportunity to gain greater influence.

Cognitive changes. There were changes at all the clinics, but the changes varied in type and degree. Cognitive changes are changes in perceptions and beliefs. They are changes in how individuals perceive themselves, their team members, and the ways in which people in different roles can behave. This type of change comes about through dissonance and an awareness of that dissonance. The dissonance is the difference between taken-for-granted beliefs that permeated the team and the evidence that team members were gaining which suggested that their beliefs were not accurate—that they were in fact counterproductive and that different possibilities or realities were possible.

At Central, Leila's information was taken up by other members of the team who created more dialogue about including the clinic's input in more of the change team work; it became part of the team's work routine to bring ideas to the clinic and ask for their feedback. There were also changes in how different team members, particularly receptionists and medical assistants, were perceived by the team. When Leila engaged in her extra-role behavior in October 2012, the team was surprised and impressed by her work; however, when a receptionist who replaced her engaged in high-level work more than a year later, the work was taken in stride—there was a new taken-for-granted assumption that receptionists could find and take on significant organizational problems.

Similarly at North, reflecting on Betty's comments in light of team members' departures began to impact doctors' and the team leader's perceptions of themselves. In addition to Doctor3 realizing that people "listen more than they probably should" to him just because he is a doctor, he also started trying to limit his contributions to "where I actually have an area of expertise or a thoughtful critique" and to consciously defer to other people's suggestions. However, he was also aware that "I don't keep my mouth shut as much during the meetings. I don't know if it's on purpose or not, but I can't help myself." This resident doctor and the attending doctor on the team discussed what would happen if they tried to build a new team without changing something, since their good intentions had not previously helped sustain the team. Their conversation and conversations with the faculty team leader included how to give the non-doctor team members more skills to help them make contributions and take on more responsibility on the team.

Greater dynamic social hierarchy. While cognitive changes were important, team behaviors and processes needed to change before members of the team who were lower in the social hierarchy could have more influence. I observed three aspects of team processes that changed: task strategies, role responsibilities, and communication patterns.

Task strategies. Who the work benefited changed over time. Projects were still suggested to help the team fulfill its purpose of making the clinic (and becoming itself) more team-based and responsive to patients and staff; however, "team-based" was interpreted differently. Initially, it had been interpreted as helping doctors by taking the load off of them and delegating work to staff. Over time it was interpreted more broadly as helping non-doctors gain responsibility and say over their work, especially at North. One of the main ways this came about was in changing who was proposing and selecting team projects after it became clear that good intentions were not sufficient:

Faculty: Even though patient experience is the thing we pick, we don't make your experience awesome. How do we make sure [to include] patient voice? We say driven by patient voice and aligned by organizational goals...how do we do that?

...

Patient2: I think leadership.

Faculty: Case in point, we invited you for 2 days and this conversation doesn't take you into account, we are not setting up this conversation to get your voice.

Manager: I agree.

Doctor1: To me, the goal is thinking about how [the change team] as a team works with how to pick a new project, [and we] need [patient's] opinion there as team member. (11/21/2013)

There were clearly many good intentions in the exchange above but by articulating them, the faculty, manager, and doctor limited how much the patient could contribute. Moments like this helped raise awareness about the need for structural change. As the North team became more cognizant of how projects were proposed and selected, Doctor1 worked to alter the process that the team had defaulted to. Since doctors were more likely to be the first to volunteer and describe new projects (sometimes using all the available time), their projects were often selected. The next time they selected projects, Doctor1 told her fellow doctors to let staff and patients describe their projects first. Doctor1 felt this was not sufficient and occasionally intervened to bring different voices in. In one case when a scheduling project was suggested, the two patients on the team were very enthusiastic about it but the rest of the team was reluctant to take it on. Doctor1, who was now the team leader, told the rest of the team that they should take it on "to honor the patients... they seemed to think it's really important." Team members also started suggesting that patients might see things in the clinic that others could not see.

Role responsibilities. The teams also changed who carried out the work and who decided who carried out the work. Initially, doctors and managers carried out the work and assigned staff members to particular tasks. By the end of my observation period, staff members were more

likely to volunteer and lead projects when they had task-related skills and an interest in doing the work. The team leader at Central said the following:

I think [Receptionist3] actually in terms of getting tasks done and moving us forward was probably one of the most, is probably one of the most, influential people. She is one of those people who will get it done and volunteers to, so that was really helpful from a change team standpoint. (7/13/2014 Interview)

Receptionist3 said the following about the change team at Central:

They respect every single idea; it doesn't matter where the idea is coming from. [Team leader] will listen to every single idea from anyone. Everything is helpful. Then she will get the ideas together. It's like a conversation and all of them were talking about the same idea. (7/21/2014 Interview)

As the change team experienced the work of the staff, they realized that other staff members in the clinic could also take on greater responsibilities. The change team at Central pushed to include receptionists in the daily clinic team check-in ("huddles") and to have medical assistants play a more leading role in huddles. The Central team doctor said the following about working with the medical assistant in the change team and in the clinic:

So I think it's kind of flushed out the scope of [MA's] role, and I think it's made her perceive herself as someone who, you know, gathers important information and communicates important information and is in a role as a caregiver in a slightly broader way than probably what she had signed up for... So I think it's reasonable for her to be taking on my responsibility and not just through kind of taking night nursing classes, but actually in her day-to-day work. (7/9/2014 Interview)

The medical assistant felt as though her role had blossomed in a good way and attributed it to the change team's work:

I was like oh my gosh, we've really done all these things, we've really changed, you know. I spoke in our last [change team] meeting, which was yesterday, and I told [doctor/medical director] we've come a long way from many years ago with the huddles, MAs doing the snap shots, we didn't do any of this! Like the job for the medical assistant was grab your label, call the patient, do the files, and you're all set. Whether the doctor wanted to share with you why the patient was here or not all depended on the doctor. Or we'd question why is that patient acting like that. Now it's like we sit here with these huddles and sometimes it's not

always necessary to say he was here 5 months ago with a rash... But now we feel more engaged; we are doing a lot more for these patients.
(6/27/2014 Interview)

The medical assistant welcomed the changes even though they came with additional work responsibilities because she had played an important role in creating the change, and the new work benefitted her. She was not simply taking on tasks that the doctor no longer wanted to do; rather, she was taking on tasks that allowed her to learn more about the patients and work more collaboratively with—influencing the work of—the doctor, nurse, and receptionist on her clinical team.

The North change team took a more extreme approach to changing role responsibilities. The team doctors and faculty member decided to have each team member facilitate the change team for six weeks and offered coaching via the team faculty member who was no longer leading the team (the senior doctor was now team leader). The nurse who was very soft-spoken and avoided public speaking went first, and after six weeks said that she was learning so much that she asked to facilitate for ten weeks. She then started helping to facilitate nurse meetings in the clinic. The receptionist facilitated next and said that she “[learned] to keep people on track and pull people in. It’s just a whole different thing, if you’ve never done it it’s like oh my God I get to do this in front of all these people. But I liked it, I thought it was a good time. We had fun.” The manager was impressed and said that the people on the change team “changed drastically.”

Similar to Central, by watching what the staff members on the change team were capable of doing, the doctors and managers decided to push for staff members in the clinic to have a greater influence:

Doctor1: Having preceptor [a faculty doctor] run huddle didn’t happen because they didn’t understand what was happening.... Should a Medical Assistant run it?

...

Manager: Sorry don't mean to talk, we need to empower medical assistants if we want them to work. Poor [MA2] doing all the work on the list. [MA2] or other medical assistants are calling shots—we are going to huddle now, let's go.

...

Doctor1: What do you think about who should be running huddle?

Medical Assistant2: [An] outside preceptor won't work but a medical assistant would work well because it would be more hands-on. [An MA would] know when [they] need a swap, know if their primary doctor is here. It's doable for the medical assistants. The only thing that would not work is evenings and medical assistants leaving for lunch, but since it's at the beginning [it] might be fine.

...

Doctor1: We need to set [an] expectation [in the clinic] that medical assistants run clinic huddles. (10/3/2013)

Toward the end of my study period, Receptionist2 volunteered to teach clinical teams that included doctors and the clinic's medical director how to use a new colon cancer screening test that the change team was helping to roll out; she was widely praised as the clinic adopted the test. Also, over time, through repeated exposure, the change team realized that receptionists who had Excel skills were the best suited to lead or co-lead preventative care clinic team meetings and started educating the clinic to allow receptionists to play this role. Staff members on the change team had a greater influence on the clinic now, and their peers were watching:

I know that [the receptionist staff] really like [the change team] because they feel it's a place where if they have an issue that they think that they would like help with, they will go to [Receptionist2]—you know because [Receptionist2] is on the [change team] now—and say: 'You know, can you bring this up' or 'Can we work on changing this?' So they feel they have a voice somewhere. (Manager, 6/24/2014 Interview)

The Receptionist2 at North said the following about her experience on the change team:

I've learned to work better with a team, making decisions—quicker decisions. Learned putting in my opinion is not going to offend anybody. Getting closer with the doctors. I don't know, I guess just being part of a group. I guess it is a whole new world to be an influence like that. I thought it was fun, I enjoy it... I love going to [change team meetings]!... It's free to say whatever you want to say... and if people don't like it, then they can tell us they don't like it, but I think everybody has a good, a great relationship. I think we do. (6/27/2014 Interview)

Notably, rotating facilitators in the change team did not just train staff to lead, but it trained doctors and managers to follow.

Communication patterns. Change team members increasingly had say in tasks where they had specialized knowledge or which would affect the work that their peers would do in the clinic. The nurse at Central said:

Every subject somebody would speak more. Like for example when we talk about colon screening, [MA1] one of the MAs who's been doing a lot of hard work on it was the person that talked more than anyone else because she knows what she's doing. (6/30/2014 Interview)

The change team at North also experienced this, but the doctors, particularly the team leader, were concerned that the staff and patients had a more difficult time pushing against the doctors. The doctors were now much more aware of their role and were at times reluctant to push against the staff and patients, which meant that the team was not using the best information they had because no one wanted to disagree or accidentally cut someone off. Doctor1 said the following to the team:

We've just been reflecting on this last year and meeting with folks and thinking about what's working in our meetings and what's not. One of the things we want to make sure we're doing is having space for different opinions and that we're not just all moving forward on the same consensus because our group has gelled really well. We all like each other, but sometimes that means we might not hear the minority opinion as much. So I want to make sure that we're really actively seeking that out in each other and listening for that. [Devil's advocate] is one way to try to do that. (6/19/2014)

Having a Devil's advocate was not a new idea for the team, but assigning someone to that role every meeting was new. The Devil's advocate encouraged people to engage in dissent:

Doctor1: Yeah, start there and add question to exit ticket; use this for [a] subsequent agenda.

Nurse: Part of me thinks—do this for all of [clinic team meetings], but the agenda won't happen again... If we pilot and everyone says yes, then start next week.

Doctor4: That was good Devil's advocate.

Faculty coach: Good job, [nurse]!

[Nurse smiling and turns red]

...

Nurse: Do we care? We want them to learn, but what are we going to do with this information?

Receptionist: Great Devil's advocate

Faculty coach: You go girl! (6/26/2014)

The nurse generally avoided conflict in the team, so it was interesting to observe how she became more comfortable voicing disagreement to help the team. It was also interesting to note the change in interaction among staff members. Whereas at the start of the team's life staff members protected themselves and their occupation from having more work "dumped on" them; at the end of the team's life, they were volunteering and supporting each other.

Staff members from the team were starting to interact differently with the other doctors and managers in the team and the clinic. When Receptionist2 was facilitating a meeting and the manager was interrupting frequently, Receptionist2 told the manager to raise her hand and wait her turn, which surprised the manager who expressed approval and then raised her hand more often. The manager was excited to talk about how Receptionist2 said: "Listen, grow up, you're a third-year [resident], it can be done in three weeks" to a doctor in the clinic who was complaining about how he was scheduled. The manager said that she knew Receptionist2 well and that Receptionist2 would never have said that before the change team, but that now that Receptionist2 had strong rapport with doctors in the clinic, she pushed back when doctors were being unreasonable. The other receptionists in the clinic noticed and talked about it.

The change teams also became more aware of their role as a symbol of what was possible for the rest of the clinic. The North and Central change teams both discussed the importance of showing the rest of the clinic what it looked like for someone who was not a doctor to lead the team and to lead projects. The change teams decided that whoever was leading the specific project being discussed should represent the team, which meant that receptionists, medical

assistants, and nurses were much more likely than before to speak on behalf of the change team to the clinic, to Peoplehealth leadership, and at conferences.

At the start of the change team, managers and doctors alike talked extensively about the importance of staff members speaking up and taking on more work, but they were not yet ready to listen and cede responsibilities. By the end of the study period, they were no longer talking very much about staff speaking up, but they were asking and expecting staff members to lead the work.

The team at South changed the least, but there were still changes. A medical assistant on the change team said the following about her experience on the team:

We're always at the table, all of us here. And I like the way it's open, you know, like we're all open, we're all the same even though it's a doctor, nurses, and everything... Here I feel like it's a non-stress environment. We talk—it's almost like a therapy type of session, you know... Like, if I'm on vacation or if I'm not there because they're short staffed, [doctor] will be like oh [MA1], we missed you on the [change team] because we value your opinion, which is nice to hear. (8/20/2014 Interview)

The second medical assistant on the team who rarely said more than a handful of words in meetings for over a year was very talkative by the end of the study period. I asked her what had changed, and she said she felt comfortable with the team but underlined how the team's level of openness and inclusivity did not translate to projects or changes in the clinic:

I find [change team] is almost like a little event session, which is what I like about it. You can voice how you feel and what you think should change. What are the changes? I don't know, but that's almost like an event session, it's what I think of this. (9/21/2014 Interview)

The doctors and managers also became more aware of the information that staff and patients brought into the team and tried to solicit more from the staff on the team and in the clinic. A manager on the team said: "I think as a leadership team, we were starting to talk about how to elicit more from the staff themselves and have them take ownership for things and then

how to affect change using the [change team].” These efforts, however, were not yet mirrored by other members of the team.

I observed three differences that seemed to contribute to the different levels of change between North, Central, and South: team ineffectiveness, manager and doctor powerlessness, and clinic disarray. Team members varied in their exposure to teams, particularly high functioning teams, and they were mostly not aware that these were topics that people studied or knew much about. Doctors in particular were often asked to lead groups and projects with no training on how to do so, and their success was therefore dependent on their personalities and ability to carve time out to prepare for meetings. The South change team was led by a doctor who was well-liked by staff and patients alike. He had a challenging panel of patients since he seemed to attract the sickest, most elderly patients in the clinic, and he would spend as much time with them as they wanted. The day that I shadowed him, he skipped lunch, took no water breaks, and was still seeing patients when I left in the evening. The medical assistant who worked with him wore sneakers, jogged in the hallways to keep up with him, and tried to get him to eat and drink between patients—she said that she loved working with him and felt responsible for his well-being. Yet, this doctor had no training in facilitation and no time to prepare for meetings. The South team started eight projects and made progress on four during my observation period, compared to Central who started 20, making progress on 15, and North who started 38 and made progress on 20. With so few projects to work on, it was difficult for the team at South to have much opportunity to allow people to demonstrate their abilities and interests, hindering the shift toward dynamic social hierarchy.

Powerlessness in people higher in the hierarchy and clinic disarray also had significant impacts on the change teams’ ability to move toward dynamic social hierarchy. The doctor who

led the change team at South said that he volunteered to lead the team because the change team was his “chance to have a voice and to work on change projects; there’s not an opportunity to do that if you’re not in some sort of leadership administrative role.” The manager who joined the clinic and team halfway through my observation period said:

It was shocking to me because I just felt like these are doctors—probably some of the most empowered people in society and yet they just felt so unable to—like they didn’t have any faith in that anything they said would actually be valued or make any difference. For instance, a lot of them would just keep quiet. (10/16/2014 Interview)

The manager who helped co-lead the change team at South from the start “helped” the team by letting them know all the ways in which Peoplehealth would not allow them to experiment with the projects they were proposing. She talked about how people know when they are a “cog in the wheel,” which over time may have discouraged the team from trying to tackle substantive projects.

Clinic disarray affected all the clinics but particularly South and Central. Moving to medical homes involved a great deal of work for the clinics, especially for the clinic leadership, which was increasingly being told what they needed to do by Peoplehealth leadership. At South, the medical assistant watching this take place said the following:

You know there are too many changes in management. Like, if you saw [Manager1] was the manager, now it’s not. Now it’s [Manager1B]. [Manager2] that was the manager and now it’s not. Then it’s [Manager3] and now [Manager3] is not here. (9/21/2014 Interview)

This medical assistant further said that it was difficult for the change team to work with the clinic leadership on change because “there are too many projects going on that [the clinic leadership] can’t really focus on one.” She and others often wondered what the point of making changes was since they did not know whether the new clinic leadership, or more importantly Peoplehealth leadership, was going to accept their changes. This limited the team’s work and limited doctors,

managers, and staff members on the team, limiting opportunities for the team to shift toward dynamic social hierarchy.

DISCUSSION

The microwedges process model contributes to our understanding of how teams can move their team from a rigid to a more dynamic social hierarchy. It fills a theoretical gap in the social hierarchy literature, which is increasingly focusing on the dynamic aspects of power (Aime et al., 2014). The microwedges process proposes that changes in team social hierarchy require a dialectic approach—one that bridges top-down and bottom-up efforts recursively over time. The teams and its leaders were nominally working toward engaging the perspectives of everyone on the team; however, those lower in power pushed back through behaviors that provided specific information on how that psychological contract was not being upheld and suggested ways in which the team and its tasks could be improved. Over time, this specific information that countered team members' taken-for-granted assumptions created dissonance, prompting changes in team processes that helped the team over time to move toward dynamic social hierarchy.

The processes that the three teams engaged in to move away from social hierarchy and toward dynamic social hierarchy followed different paths, but all the paths relied on team members' interactions and information. Engaging in a microwedge trigger, whether to demonstrate their capacity for higher-level work (taking charge) or to question the taken-for-granted social hierarchy (upward voice), allowed team members to introduce new information that was now shared by the team. Earlier in the life of the team, the microwedge triggers were not incorporated into the teams' processes—that only happened later, after team members experienced dissonance between what they knew staff members were capable of taking on and

what staff members were being allowed to do, which led to cognitive changes followed by process changes that fostered greater dynamic social hierarchy.

Research exploring the shift toward dynamic social hierarchy has emphasized the importance of emergence—the role that team members and their interactions play in creating increasingly distributed leadership functions within the team (Drescher et al., 2014; Aime et al., 2014). Using an inductive approach, I identified the role that information, particularly information from those lower in the hierarchy, played in creating opportunities for change. Studies on psychological safety have emphasized the role that managers and leaders play in creating an environment in which people speak up (Edmondson, 1999; Nembhard & Edmondson, 2006). However, people higher in the social hierarchy may not want to increase the influence of others because it threatens their own position in the hierarchy (Pettit, Yong, & Spataro, 2010; Porath, Overbeck, & Pearson, 2008). In my setting, managers and doctors expressed interest in having staff and patients take up more influence, but good intentions were not enough. In fact, doctors and the faculty member in the North change team realized that they needed to put processes in place that would build up their staff—and which in some cases forced them to learn to be led by staff members on the team.

In looking at different types of microwedge triggers, it became clear that they varied by who proposed them and by timing. Whether a team member was an employee or an organizational outsider mattered—patients were much more likely to notice and to speak up directly about hierarchy than were employees who were socialized into accepting the hierarchy. Martorana et al. (2005) suggest that for lower-power people to take action, they need to feel powerful and believe both that the hierarchy is illegitimate and that it can change. In teams, team members may experience these emotions and beliefs at different times. In fact, it may be that

team members who have these feelings and beliefs can influence others via microwedge triggers, allowing their colleagues to see that people lower in the hierarchy can be powerful—a picture that starts making other team members question assumptions about the legitimacy of the social hierarchy. Building a shared picture may be an important initial condition in helping team members’ diverse perspectives coalesce around a common understanding of their social hierarchy and what a possible different hierarchy looks like—a first step to creating the conditions for dynamic social hierarchy.

I demonstrate the importance of team context in influencing whether an extra-role behavior creates change, unlike previous research which has emphasized individual delivery or willingness to speak (e.g., Morrison, Wheeler-Smith, & Kamdar, 2011). Van Dyne and colleagues (1995) suggested that how well a person executes their extra-role behavior determines how it is received within the group or organization:

We believe that effective execution involves constructive framing, specificity, factual documentation, sensitive delivery, and appropriate timing... If these ideas are communicated effectively, the behavior will be viewed as constructive and the employee will receive positive feedback. (p.268)

Leila’s microwedge process trigger was offered as a specific suggestion informed by her communication with clinic members and was delivered in response to the team leader’s request for input. She received positive feedback in the moment, but the positivity of the feedback did not reflect the team leader’s willingness to use the information that Leila collected. In this example, delivery and immediate feedback did not mean the information was going to cause change in the moment. I did not see differences in responses based on how much specificity, documentation, or sensitive delivery a person engaged in. Timing did matter, but not in the way suggested by Van Dyne and colleagues (1995). In the early and middle phases of the teams’ life, there were not significantly better or worse moments—the extra-role behaviors simply were not

going to create immediate change because the teams were not ready to process the information. However, the extra-role behaviors themselves helped to create the change that made the team more receptive to them later in the life of the team.

Burris et al. (2013) found that it is not simply how well an employee executes voice but rather the agreement between the employee and his or her manager about the employee's level of voice that leads to ratings of higher performance and lower turnover. The responses to microwedge process trigger and extend that finding by suggesting that while there may be agreement between employee and manager about an employee's voice, that agreement is not necessarily indicative of whether the information provided will be acted upon by the manager. It might simply mean that the manager thinks highly of the employee's effort and doesn't penalize him or her for it (i.e., the Central manager thought Leila was doing a great job speaking up, but she was not ready to use any of Leila's suggestions). In the teams that I observed, whether or not the extra-role behavior resulted in short- or long-term change was less dependent on the individual's execution or doctors' and managers' perceptions of whether team members were speaking up, but rather was more dependent on the team's capacity to listen and incorporate the information contained by the extra-role behavior.

As Morrison (2011) noted, much of the existing work on voice is cross-sectional, often sampling one or two points in time. This approach makes it difficult to understand how people's voice behaviors are received and incorporated over time. The microwedge process model provides information about how voice, especially the voice of lower-power team members, can create changes in other team members, especially members higher in the social hierarchy, and how those individual changes can create team-level changes. It also suggests that people lower in the hierarchy are not the only ones who need to enact and learn from extra-role behaviors.

Higher-power people are not just responsible for creating a psychologically safe environment, but also for enacting and learning to exhibit behaviors that had previously been associated with lower-power people, such as listening, being influenced, and being led.

Implications for Practice

Many organizations are interested in using teams and having employees speak up as a way to better use all of their available resources. Health care organizations in particular are in the midst of trying to decrease rigid social hierarchy and its impact, but they are not the only ones. Multidisciplinary teams are widely used across industries and have members who vary in power and ability to influence the team. An understanding of the roles that team members lower in the hierarchy can play and the responses that team members higher in the hierarchy can cultivate would help organizations struggling with dynamic social hierarchy think concretely about the mechanisms that can start to break down barriers in these teams.

Limitations and Implications for Future Research

This study explains a change process in a single organization, albeit three separate clinics in that organization. While it can be problematic to draw conclusions from a single site, the focus on process rather than outcomes decreases this problem. A perhaps more significant issue is that Peoplehealth was actively trying to decrease hierarchy and was under internal and external pressure to do so. This created a level of legitimacy that—like other scholars have suggested—helped support the change process. For organizations that are not under pressure to change, there may be opportunities to create unit- or team-based versions of legitimacy to help support change.

This study also raises several questions for future research. First, I have proposed a model of how certain extra-role behaviors can cause cognitive changes in other team members. I saw that some roles were more likely than others to perceive problems with hierarchy and voice

issues. Future research could explore how the voice of one lower-power member affects the likelihood that another lower-power member on the team will speak up, while considering moderating issues like how higher-power team members respond shorter- and longer-term. Second, organizations engage in many interventions to try to empower their staff, so it would be interesting to look at whether the intervention has changed the perceptions and increased the information held by team members to help them draw upon each other's areas of expertise, or whether it only made people talk more about the importance of speaking up. Third, research on voice has found that the presence of voice behaviors correlates with improved team performance. In the short-term, it may be the case that team performance temporarily suffers as members integrate voice information, undergo cognitive changes, and begin to experiment with new team processes. It may be important to measure the timing and degree of change that the voice behaviors create so that the relationship between voice and performance can be better understood.

CONCLUSION

Organizations across industries have a long and successful tradition of operating hierarchically; however, when they are forced to change—like the many health care organizations in the United States moving toward dynamic social hierarchy—they can struggle to create an environment where people lower in the hierarchy can take on more responsibilities and decisions. Research on voice looks at the actions that those higher in the hierarchy can take and the beliefs that those lower in the hierarchy should possess to enable everyone to speak up and contribute (Edmondson, 1999; Detert & Edmondson, 2011; Liang, Farh, & Farh, 2012). I argue that this may be insufficient for creating change. In the setting that I observed, voice was encouraged when the teams launched, which helped create a dynamic where people did speak up.

However, that was short-lived, as decades of training and culture led the team to revert back to the status quo that its members were used to. Yet the teams did eventually start shifting their assumptions and changing their reliance on social hierarchy because of team members' extra-role behaviors. By demonstrating their capabilities and planting a seed in the minds of those in power, team members were able to be the change that they eventually helped to create.

CHAPTER 4. THE CHANGING NATURE OF SOCIAL HIERARCHY AND VOICE

Exploring a change in social hierarchy, voice, and silence

Social hierarchy, silence, and voice have a large impact on the day-to-day life of employees and on organizational performance. Studies on the antecedents, dimensions, and consequences of each of these topics have increased since 2000, but these topics have mostly been studied from a static perspective (for reviews see Anderson & Brown, 2010; Morrison, 2011). However, if social hierarchy changes—if it becomes more or less rigid—then voice and silence may also change. In this paper, we take a longitudinal qualitative inductive approach to build theory about the relationship between rigid and dynamic social hierarchy and voice and silence in teams.

While there are many definitions of social hierarchy, we define social hierarchy as the rank ordering of dyadic influence (Bunderson, Van der Vegt, Cantimur, & Rank, 2016; Magee & Galinsky, 2008). This definition draws from the work of Bunderson and colleagues (2016), which suggests that because influence and deference are a response to “perceived merit (e.g., based on expertise, experience, and networks) and formal authority” they flow one way within a dyadic pair. The social hierarchy is then the aggregate of those pairs. We diverge from Bunderson et al.’s (2016) definition in which they view the relationships as always cascading in a single direction. While we agree that many hierarchies cascade in one direction much of the time, we propose that some of the time—as the team context and tasks change—the direction of the influence will also change. We view hierarchies that always have the same cascading influence relationships as rigid and those that have changing influence relationships as dynamic.

Employee silence and voice have been studied as “separate, multidimensional constructs” (Van Dyne, Ang, & Botero, 2003, p. 1359). In general, silence leads to withholding input while

voice leads to contributing input. Employee voice has been defined in a number of ways (Morrison, 2011); we use Detert and Burris' (2007) definition of voice as “the discretionary provision of information intended to improve organizational functioning to someone inside the organization with the perceived authority to act, even though such information may challenge and upset the status quo of the organization and its power holders” (p. 869). Employee silence, on the other hand, has been defined as “intentionally withholding ideas, information, and opinions with relevance to improvements in work and work organizations” (Van Dyne et al., 2003, p.1360).

In teams, those who have more influence and are higher in the hierarchy may be more likely to share input to improve organizational functioning, while those who have less influence and are lower in the hierarchy may be less likely to engage in voice behaviors, especially toward those above them in the hierarchy (Tost, Gino, & Larrick, 2013). They may also be more likely to withhold information, disagreements, and suggestions (Anderson & Berdahl, 2002; Galinsky, Gruenfeld, & Magee, 2003). However, if these influence patterns were to change, then voice and silence behaviors could change as well. Below we will offer evidence that voice and silence indeed change when social hierarchy changes and theorize about the relationship that enables this to happen.

Social hierarchy, voice, and silence at the individual and team levels

In studying the relationship between social hierarchy and voice in teams, it is important to explore similarities and differences in behaviors between team members. Voice and its antecedents have mostly been studied from the perspective of the participant and/or the manager (Morrison, 2011). While there has been limited attention to the variance of silence and voice within teams, especially over time, there has been research that crosses individual, team, and

organizational levels. For example, research has explored the impact of group voice climate on individual voice (Frazier & Bowler, 2015; Morrison, Wheeler-Smith, & Kamdar, 2011), of group (average) voice on group performance (Walumbwa, Morrison, & Christensen, 2012), of voice on the unit (Detert, Burris, Harrison, & Martins, 2013), of procedural justice climate in teams on silence (Tangirala & Ramanujam, 2008), and of silence at the organizational level (Morrison & Milliken, 2000). Yet all of these studies measure either individual voice or average responses about voice and silence to create an aggregate score for the team or organization.

Variance in voice and silence behaviors within a team have been underexplored even though researchers have identified it as an important area to study. Similarly, variance in these behaviors over time has also received scant attention despite being a pressing concern for organizations engaged in change. After reviewing the state of the voice literature, Morrison (2011) suggested that researchers should look at voice from multiple perspectives and explore changes in voice over time to “gain a more dynamic picture of this phenomenon” (p. 404). Looking at both the differences in voice behaviors among team members as well as looking at the difference in the behaviors that contributed to voice is particularly important in teams, especially in teams with members who are higher and lower in the hierarchy. Therefore, a fruitful place to explore these differences and changes is in multidisciplinary teams, whose members span different occupational groups and whose social hierarchies may be in flux.

RESEARCH METHODS

To demonstrate that a team’s social hierarchy can change and to theorize about how this change affects voice and silence behaviors, we draw on data from a multidisciplinary team, the North team (all names are pseudonyms), in a health care organization, Peoplehealth, over its first 22 months. Although the state of prior research in social hierarchy and voice can be

characterized as intermediate or mature, the research questions and constructs that we explored were open-ended and new, so a qualitative inductive approach was most appropriate (Edmondson & McManus, 2007).

Like many health care organizations, Peoplehealth was experiencing internal pressure (e.g., financial pressure, employee pressure, and patient dissatisfaction) and external pressure (e.g., financial pressure, a need to expand capacity, and changing industry standards) to create change in their clinics. One of the main ways they decided to carry out this change was through the use of change teams— multidisciplinary teams charged with redesigning how care was delivered. These change teams were therefore embedded in a shifting context and responsible for new tasks, which provided a forum for members from different occupations to work together regularly over several years. As Chapter 2 suggests, these contextual factors provide teams with the opportunity to evolve from a more stable to a more dynamic social hierarchy, so a change team was a fertile place to study how interactions between members from high- and low-status occupations change over time.

As part of a larger data collection, I collected observational, interview, and archival data on the organization, three outpatient clinics, and their three redesign teams over 31 months. For this study, we will focus on the redesign team at North Clinic. Of the three teams, the North change team met most frequently—once a week—and experienced the most change, so it provided the richest data to explore voice and silence.

As with all teams research, it is important to classify the type of team we studied. Hollenbeck, Beersma, and Scouten (2012) provide a dimensional scaling framework for classifying teams using three dimensions: temporal stability, skill differentiation, and authority differentiation. The North team was temporally stable with moderate changes in team

membership, operating much like a ‘real team.’ This team had high skill differentiation since members came from different functional backgrounds, but the team did not have maximum functional differentiation since doctors and patients had multiple representatives. The change team included one or more members from the following occupational groups: senior doctor, resident doctor, nurse, medical assistant, receptionist, behavioral faculty, manager, and patient. The North team operated in health care, an industry known for high authority differentiation. In this organization, when the team formed, team leaders were doctors, managers, or faculty members with doctoral degrees. A faculty member was the team leader on the North team for half the study period and a senior doctor was the leader for the second half. While the question of authority differentiation and whether it changes over time is the focus of this study, a fourth dimension that is worth highlighting is level of team autonomy. Change teams operated under the purview of organizational leaders as well as clinic managers, but teams were responsible for identifying, prioritizing, and carrying out their own tasks.

Data Collection

The North team participated in structured launch meetings in August of 2012 and started working together on a weekly basis the following month. Between September 2012 and June 2014, the team met 89 times—they met for their regularly scheduled 2-hour meetings at North clinic 82 times, at a learning conference 6 times, and at another clinic where they conducted observations 1 time. I attended 71 meetings, creating real-time transcripts, and recorded 7 additional meetings that I then helped transcribe, for a total of 78 meetings; 73 transcripts were used in the analysis. Team meeting minutes and emails were collected throughout, including for the missed meetings. The transcripts were cleaned by myself and two research assistants. The cleaning involved removing identifiable information, replacing names and locations with

pseudonyms, correcting typos, adding missing punctuation, and ensuring a consistent format. Once cleaned, the files were parsed in SAS by a statistician to create data files by meeting, by speaker, speaker role, speaking order, and by whether the speaker was a team member or a guest (the team sometimes invited guests to join for part of or all of a meeting). This format allowed us to quantify how much and when each team member spoke (word count) and how many speaking turns they had (turn taking) during each meeting. These quantifications are approximations based on the transcripts that were created in real time. We also drew from team emails, field notes from 20 hours of team member shadowing, and 23 semi-structured and unstructured interviews.

Analytical Approach

This inductive longitudinal field-based research used a grounded theory approach (Charmaz, 2014). The qualitative data helped us understand the content of the discussion while the quantified qualitative data helped us explore patterns over time (Berger, Rosenholtz, & Zelditch, 1980). We used the data in these two ways so that we could understand it more deeply—it would have been inefficient and inaccurate to try to understand speaking patterns over time without using the quantified data.

We had conducted extensive qualitative exploratory coding and were interested in understanding what the interactions between team members looked like at different points in time, so we used the quantified data to inform our qualitative coding. To maximize the variance between meetings, we selected the 10 meetings in which there was the most and least disparity in participation between team members from high- and low-status occupations (six meetings in 2012, seven in 2013, and seven in 2014). Occupational background can inform positions of power and status in teams, and we found that to be the case in the teams we studied (see Chapter

3). As the researcher most familiar with the data, I coded the transcripts, capturing how the team members were interacting.

The first step was then to look at all the specific instances that seemed to limit and to facilitate participation, which allowed us to see more generalizable categories. The next step was to examine and refine these categories by looking at the next 10 transcripts with most and least participation disparity, for a total of 20 transcripts. We looked at the data and emerging categories and compared that to what team members reported when they were interviewed and shadowed at different points in time. We cycled through this several times while consulting the literature to understand how it informed what we were seeing. We were interested in patterns of participation over time, so we also created measures of participation—turns taken and word count for each person in each of the 73 meetings. As we analyzed our data, we realized that our data and findings addressed issues of social hierarchy and voice at the team level that were critical for organizations—such as how does social hierarchy affect voice? As well as, what factors are important to consider at the team level when trying to increase the voice of those lower in power? Our data collection approach allowed us to explore these questions.

SOCIAL HIERARCHY OVER TIME AND THE BEHAVIORS THAT SUPPORT IT

In examining participation (turn taking and word count) of all team members over time, we find a substantial gradient in meeting participation by occupational status. For instance, over 73 meetings, the senior doctor spoke 53,590 words, whereas the most talkative junior doctor spoke 30,956 words, the most talkative nurse spoke 18,886 words, and the most talkative medical assistant spoke 10,150 words. The most talkative receptionist spoke more (17,965 words) than the nurse and medical assistant for the time she was on the team but less than the physician (see Table 5). Since everyone did not attend every meeting, Table 5 also includes

words per meeting attended. These participation patterns are expected since occupational status conveys status to individuals in teams (see Chapters 2 & 3), and higher-status members are more likely to participate (Galinsky, Gruenfeld & Magee, 2003). Table 5 displays participation for each team member, highlighting differences between those in higher-status occupational groups (i.e., the behavioral faculty, doctors, and manager) and those in lower-status occupational groups (i.e., the nurse, medical assistant, receptionist, and patient). While being a patient is not an occupation, patients were team members, and we grouped them with the staff because they had lower status.

Table 5. North team composition, tenure, facilitation, turns taken, and word count

Person	Team tenure	Team facilitator	Turns taken	Words per turn	Total words	Words per meeting attended
High status (average)			2,419	13	30,660	636
Behavioral faculty	9/12-7/13 *	9/12-7/13	3,538	13	45,492	858
	10/13- 6/14 ^					
Senior doctor	9/12-12/13	8/13-12/13 ¹	4,177	13	53,590	893
	1/14-6/14 *					
Junior doctor 1	9/12-6/14	7/13-12/13 ¹	2,578	12	30,956	584
Junior doctor 2	9/12-6/13		1,022	14	14,783	477
Junior doctor 2a	6/13- 6/14	9/13-12/13 ¹	782	11	8,478	369
Manager	7/13-6/14		586	11	6,727	269
Low status (average)			872	11	9271	339
Medical assistant 1	9/12-7/13		710	9	6,273	179
Medical assistant 2	8/13- 6/14	6/14- 6/14	980	10	10,150	363
Nurse 1	9/12,	1/14-3/14	1772	11	18,886	363
	1/13-8/14					
Nurse 1a +	9/12-12/12		339	10	3,257	271
Receptionist 1	9/12-7/13		1796	10	17,965	513
Receptionist 2	8/13-6/14	3/14-6/14	1038	11	11,733	405
Patient 1	9/12-5/13		822	12	9,520	381
Patient 2a	10/13- 6/14		1148	11	12,796	673
Patient 2b	10/13- 6/14		338	12	3,894	205

* Designated team leader (changes after Faculty's medical leave), ^ Designated team coach, ¹ rotate facilitation duties, + Maternity leave coverage

Despite these overall differences in participation, we argue below that the social hierarchy in this team shifted from more stable—and ordered like a typical medical hierarchy—to more dynamic, and we explore how this change related to voice and silence and their antecedents.

A shift in team social hierarchy

Social hierarchy has been measured in variety of ways—it has been inferred based on members' occupation or participation, and it has been compiled using self-described measures (for a review see Berger, Cohen, & Zelditch, 1972). In this paper, we determined social hierarchy by looking at project leadership, decision-making patterns, and participation patterns in the team.

Project leadership shifted across occupational roles. The team worked on one or more project at any given time, starting 38 projects and making significant progress on approximately 20 projects during the observation period. The team proposed and voted on projects that would then have a leader who would coordinate work with the clinic, implement some (if not most) of the work, and report the state of the project during team meetings. For the first 10 projects the team worked on, six projects were led by a team member in a high-status occupation (i.e., doctor or faculty member) and four projects were co-led by team members in both high- and low-status occupations (i.e., staff or patient).

Having every project led or co-led by a member in a high-status occupation exacerbated the concern that those in lower-status occupations expressed. During the first year of the team's life, the patient, receptionist, and medical assistant were often frustrated and skeptical about having influence on the team's work and skeptical that the team could create change that would

help people like them. Before the medical assistant walked out of a meeting in 2012, this exchange took place:

Faculty: [MA] is beyond discouraged with [the change team,] overwhelmed by life at [North] and doesn't think [the change team] can do anything... I'm not sure she wants to stay on [the change team]... [MA] ultimately you need to do what is right for you. You want to not come today? I'm not trying to pressure you.

Medical Assistant: [quiet and indistinct]

Faculty: It's about you and it's not about you. Don't be sorry. We should be sorry.

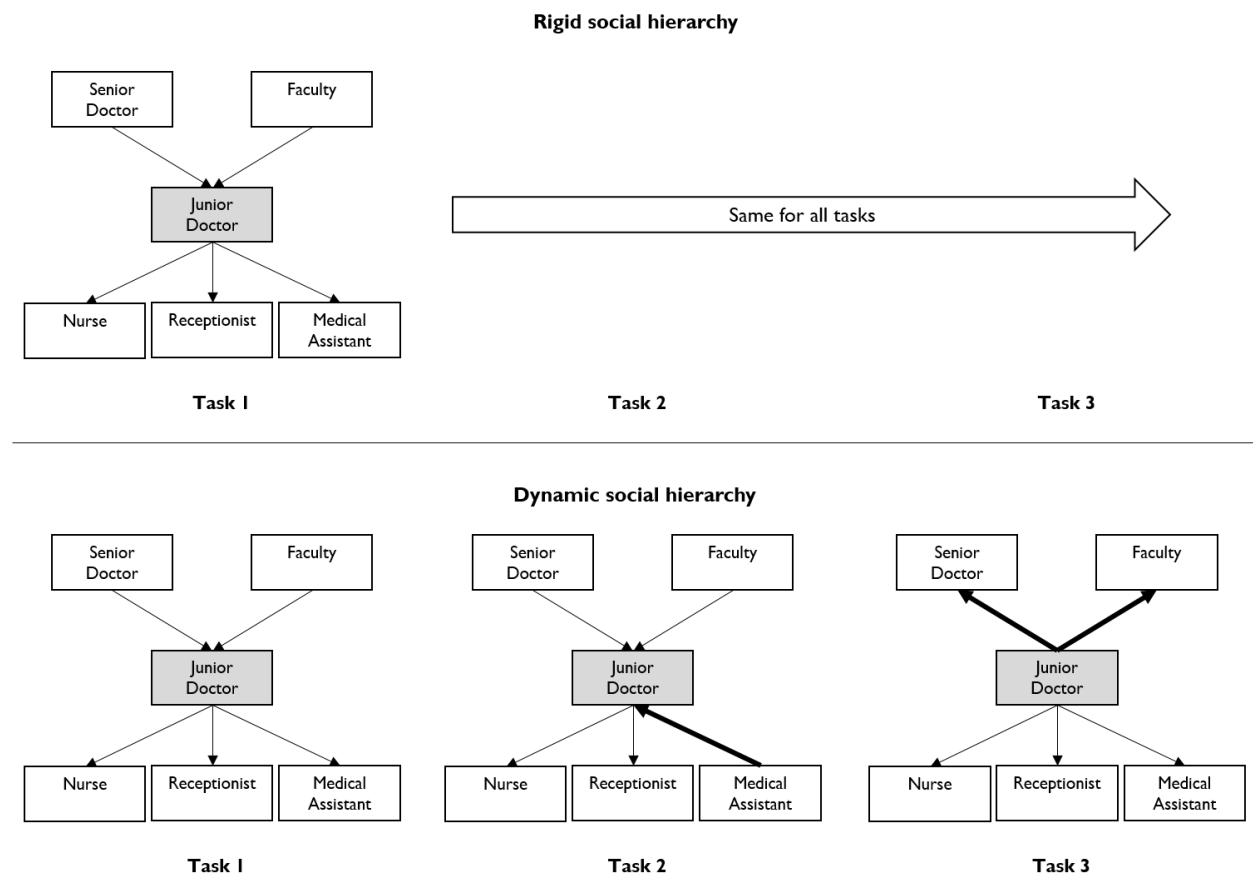
Team members from lower-status occupations were willing to assist with team work, but they were also wary that the changes the team was carrying out were mostly benefiting the clinic and doctors and not directly helping the staff or the patients.

Both the project distribution and team perceptions changed over time. For the last 10 projects the team worked on during the observation period, 2 were led by a team member in a high-status occupation, 5 were co-led by high- and low-occupation team members, and 3 were led by low-status occupation members. Over time, the projects increasingly benefited and involved the staff. Among the last 10 projects that I observed were “getting all staff involved in pre-work huddles,” two nurse projects, a front desk-nurse project, and two projects that directly benefited patients in addition to projects that benefited doctors and the clinic as a whole.

Project leadership was a good proxy for influence—and therefore social hierarchy—among the team members, since project leaders were responsible for not only overseeing the work, but also for leading the conversation about the project, soliciting information and feedback, and getting other people on the team and the clinic to complete work needed for the project. The change in project leadership reflected the change in influence patterns at North. Figure 8 depicts rigid and dynamic hierarchy—since influence relationships are dyadic, in this simplified example we focus on the influence relationships that a junior doctor on the North team experienced. When the hierarchy was more rigid, the same influence relationships existed

regardless of task: the senior doctor and faculty member influenced the junior doctor, and the junior doctor influenced the staff. However, when the social hierarchy was more dynamic, the exact same influence patterns that were present in the rigid hierarchy were present during the first task. When the task changes, however, the influence patterns changed—the medical assistant exerted influence over the junior doctor; similarly, when the task changed yet again, the influence patterns changed again with the junior doctor exerting influence over the senior doctor and faculty member. The influence patterns in rigid hierarchy do not change as the team tackles different types of tasks, while the influence patterns in a dynamic hierarchy do change to better match the needs of new tasks.

Figure 8. Rigid social hierarchy and dynamic social hierarchy across three tasks.



While Figure 1 is a simplified version of what dynamic hierarchy looks like, the team encountered situations such as that depicted by task 2, where the medical assistant had relevant skills or experience and had influence over one or more of the doctors, managers, and faculty members as she led the work for task 2. Changes in influence are time- and task-dependent, so the underlying power structure is maintained across many tasks.

The shift toward a more dynamic hierarchy at North was due to a change in perceived competence of team members so that the faculty and doctors were not the only ones deemed capable of being project lead. As a doctor in the team noted during her interview, “I feel like our current cohort of [nurse], [receptionist] and [medical assistant], they go out and implement our PDSAs... I feel like they're engaged, they're more confident; they can go out and implement stuff definitely.” A PDSA (plan-do-study-act) is a popular problem solving model in health care that team members used to carry out their projects (Taylor et al., 2014). A doctor and receptionist said the following about their experience on the team in 2014:

The [change] team has had some successes, and that's been important to our self-identity. We have visitors a lot, and I think our team now takes a lot of pride in that. A lot of the ideas they work on [organization-wide] were originally [North team] projects so that feeling of “We can actually get stuff done” is so important because otherwise I would quit if we were not being effective or if I felt like we were not being effective. (Doctor)

We have a lot of ability to get things done because we all work together, you know? Everybody has a piece of it, so I think that's another part that gets it to go so fast. Everybody has a piece of it, and we own that piece of it. (Receptionist)

When asked about the team's strengths, a second team doctor said it was “com[ing] up with realistic PDSAs and reevaluat[ing] them each week.” These doctors wanted projects to be impactful and to be completed and volunteered to lead or co-lead projects that they felt they were best equipped to lead. Likewise, people on the team, from high- and low-status occupations,

volunteered or were asked to lead when they were perceived as the best person for the work. It was precisely the perception of who was best equipped to lead the work that had changed.

Decisions about projects shifted across occupational roles. Over time, the team engaged more members in figuring out what projects to work on and what they would entail (see Table 6). While members in high-status occupations did not propose fewer new tasks or changes in tasks across meetings in 2012, 2013, and 2014, members in lower-status occupations did propose more over time. Every project that was proposed was not carried out; however, engaging in more proposing had two effects on team members. The first is that the more that a person proposed, the more they learned how to propose effectively. The second is that quantity helped—the more tasks and projects a person proposed, the more likely one would be picked by the team. While this does not suggest that members in higher- and lower-status occupations switched places in the hierarchy (i.e. change in rank), it does suggest that members in lower-status occupations over time were able to exert more influence (i.e., change in influence) over other team members.

Table 6. Shift in who proposes new tasks or changes in existing tasks over time

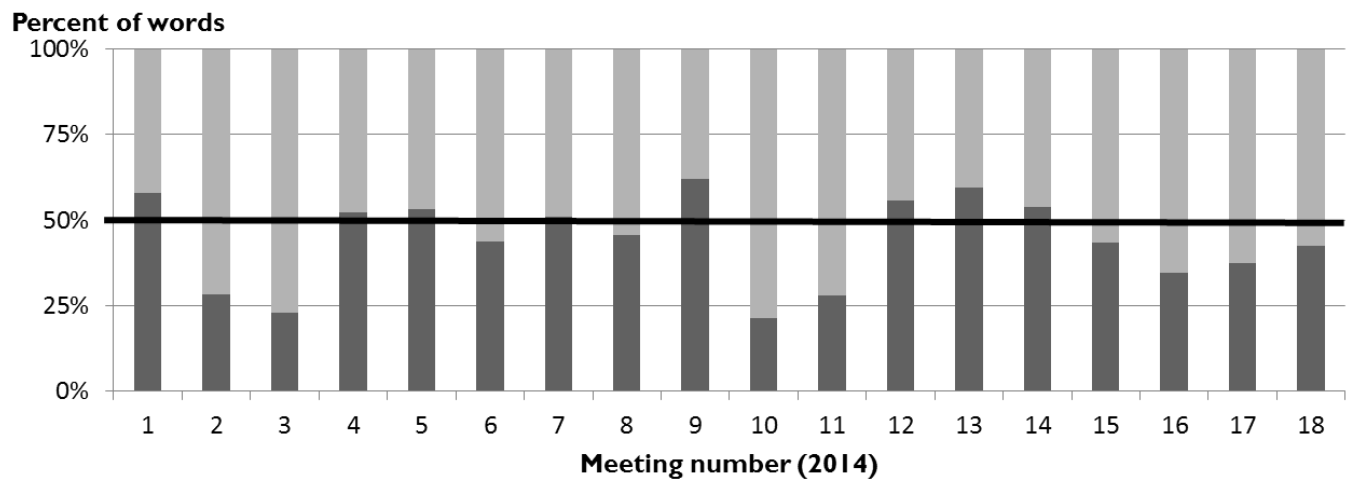
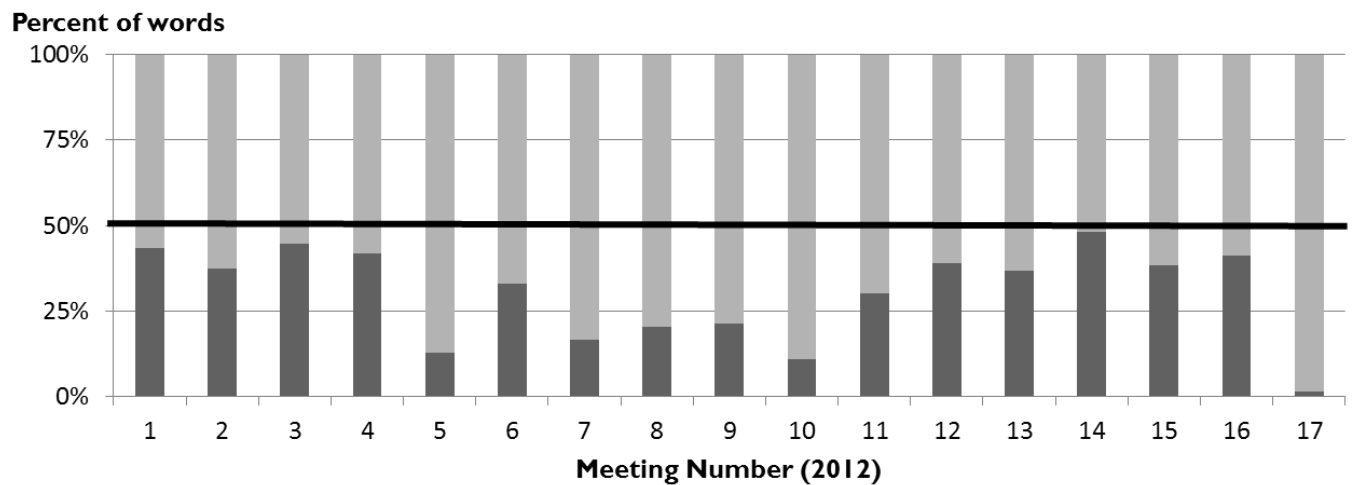
	Status	Example	Meetings (#)			Total
			2012 (6)	2013 (7)	2014 (7)	
1 Propose task or change in task	H	Doctor: Or bright pink piece of paper—[front desk] gives it to patients “Ask your doctor and medical assistant.” I had a whole week where I told everyone to do [screening] and it didn’t happen. When the patient brings it up, don’t miss it.	19	26	18	115
	L	Receptionist: I have a crazy idea [to promote colon screening]. Faculty: A good time for a crazy idea. Receptionist: brown paper—take it and laminate it—any patient over 50 gets it and	9	19	24	

told “Make sure you give it to the medical assistant when you enter the room.”

Participation shifted across occupational roles. Participation is a behavior that has been used as a proxy for social hierarchy (Berger, Cohen, & Zelditch, 1972). We found that participation (turn taking and word count) increased over time among team members in lower-status occupations. Lower-status members’ words comprised more than 50% of all words spoken in 8 of 18 meetings in 2014, but this mark was reached only once in the 38 meetings held in 2013 and never in the 17 meetings held in 2012. To see this change over time see Figure 9.

Figure 9. Proportion of participation by members in high- and low-status occupations in 2012 and 2014

Comparison of percent of words spoken by status in 2012 vs. 2014



Legend

Low status (receptionist, medical assistant, nurse, patient)
 High status (doctor, faculty, resident, managers)

Note: word count totals exclude words spoken by external guests

Team members were increasingly aware of their own and others' participation. A doctor on the team described learning how his speaking affected other members of the team:

[T]here is only a certain amount of air space in the meeting or air time. I don't mind public speaking, and I can speak quickly, and I can think on my feet and not everyone has that skill. But it doesn't mean that my ideas are most valuable. So I know that if we have a meeting and people are kind of tentative I can fill up an hour easily. But it doesn't mean it's the best use of the hour, I know that.

He further suggested that it was his desire to allow members from lower-status occupations to contribute that eventually forced him to attempt to reign in his participation:

[Medical Assistant] has incredible insight and is really smart, and I have so much respect for everything she does. But she is quiet, and I know her. I know you need to push her into that given space. So I think it was a combination of her coming in that I was like all right, this is a big opportunity to bring someone in who can come up with a lot of bandwidth and be really invested. But if I just sit here and blabber the whole time, she'll just sit and listen. So that was -- I remember consciously thinking that.

The proportion of doctor participation declined while the proportion of participation by staff members and patients increased over the observation period. There were other staff members on the team whose work outside the team was admired early on (e.g., the clinic created a sub-manager position for the first receptionist while she was on the team), however, these same doctors were less self-aware early on about their role in inhibiting others' participation.

Having the faculty and doctors attempt to participate less, however, would have been insufficient if the members of the lower-power occupations did not fill the space, which they did. By 2014, members from lower-power occupations became more vocal and confident about their ideas, and it did not have to be in their area of expertise. Early on, when the doctors, managers, and faculty discussed a project, they would ask the staff members or patient for input on tasks specific to their occupations—how do front desk employees do this task?—while doctors gave input on a wide range of areas whether or not they had relevant experience or training. By 2014,

people across occupations were able to give input on their own occupational area, on other occupational areas, and, importantly, on tasks that crossed occupational areas.

Finding and integrating each team member's specialized and complementary knowledge is critical for team performance (Gardner, 2012; Bunderson & Sutcliffe, 2002; Hackman and Katz, 2010). All members in the team had specialized knowledge based on the tasks they worked on day-to-day in the clinic, but they also had general knowledge and opinions about areas they were not specialized in based on their experiences and observations in and out of the clinic (e.g., doctors and staff shared the experience of being patients or taking their children to doctors at other clinics). At first, being in a higher-status occupation enabled people to opine broadly. Over time, everyone shared their knowledge, experience, and opinions more broadly.

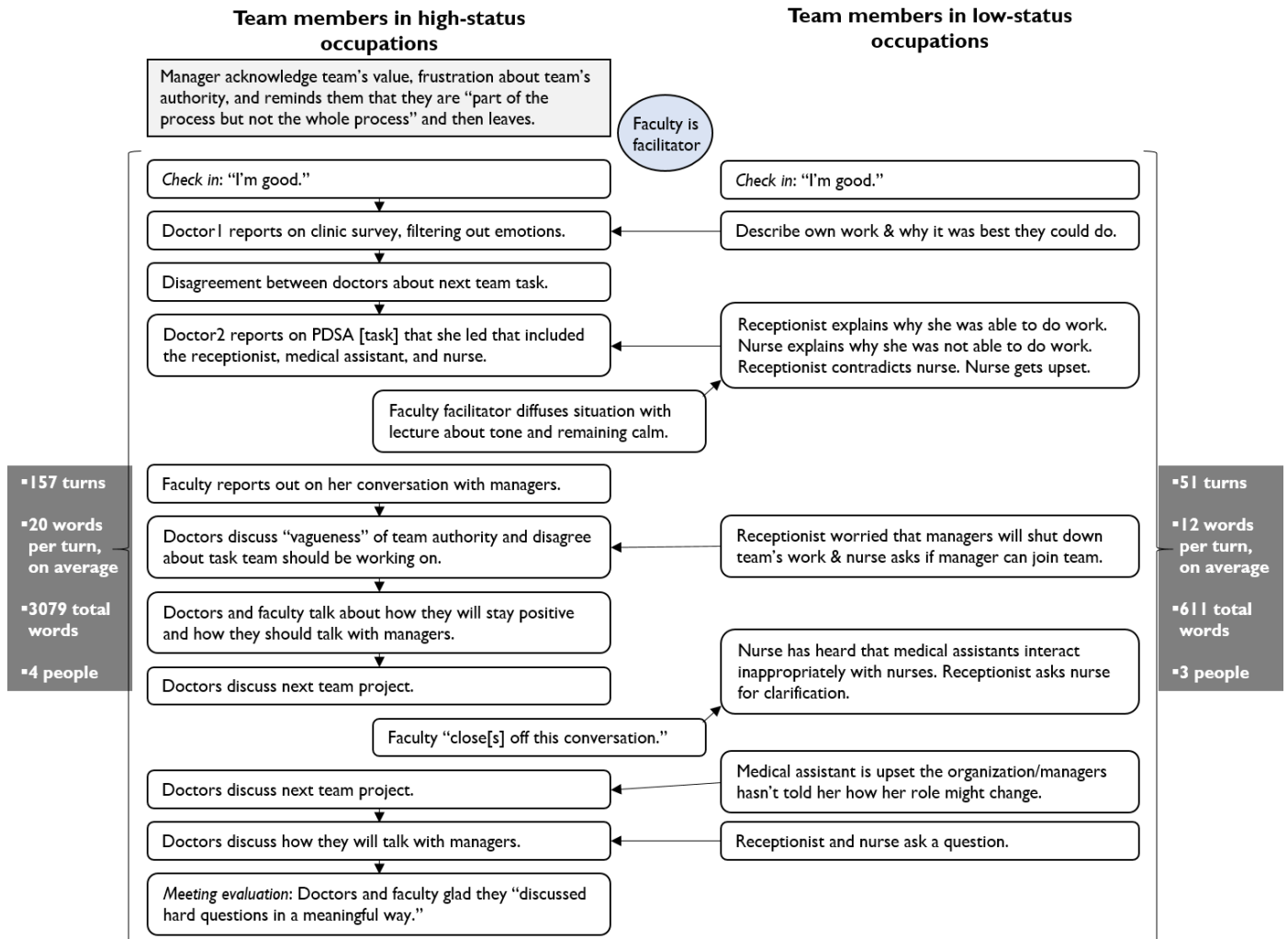
This change in social hierarchy was due to the microwedge process described in Chapter 3. However, social hierarchy influences the structure of a team and the behaviors the team exhibits. We will discuss the conversation structure we observed when the team had a more rigid hierarchy compared to when it moved to a more dynamic hierarchy, as well as the behaviors that team members in high- and low-status occupations exhibited.

A shift in team conversation structure and behaviors

Team conversation structure. When the team had a stable social hierarchy early on, there were different, and sometimes non-overlapping, communication patterns among team members who were in higher-status occupations and those who were lower-status occupations. The primary conversation occurred mostly between those in higher-power occupations who determined not only what projects to work on but also how the team was going to carry them out. The lower-power members participated in the primary conversation less often and occasionally

had their own side conversation. Figure 10 below depicts the structure of a meeting from October of 2012:

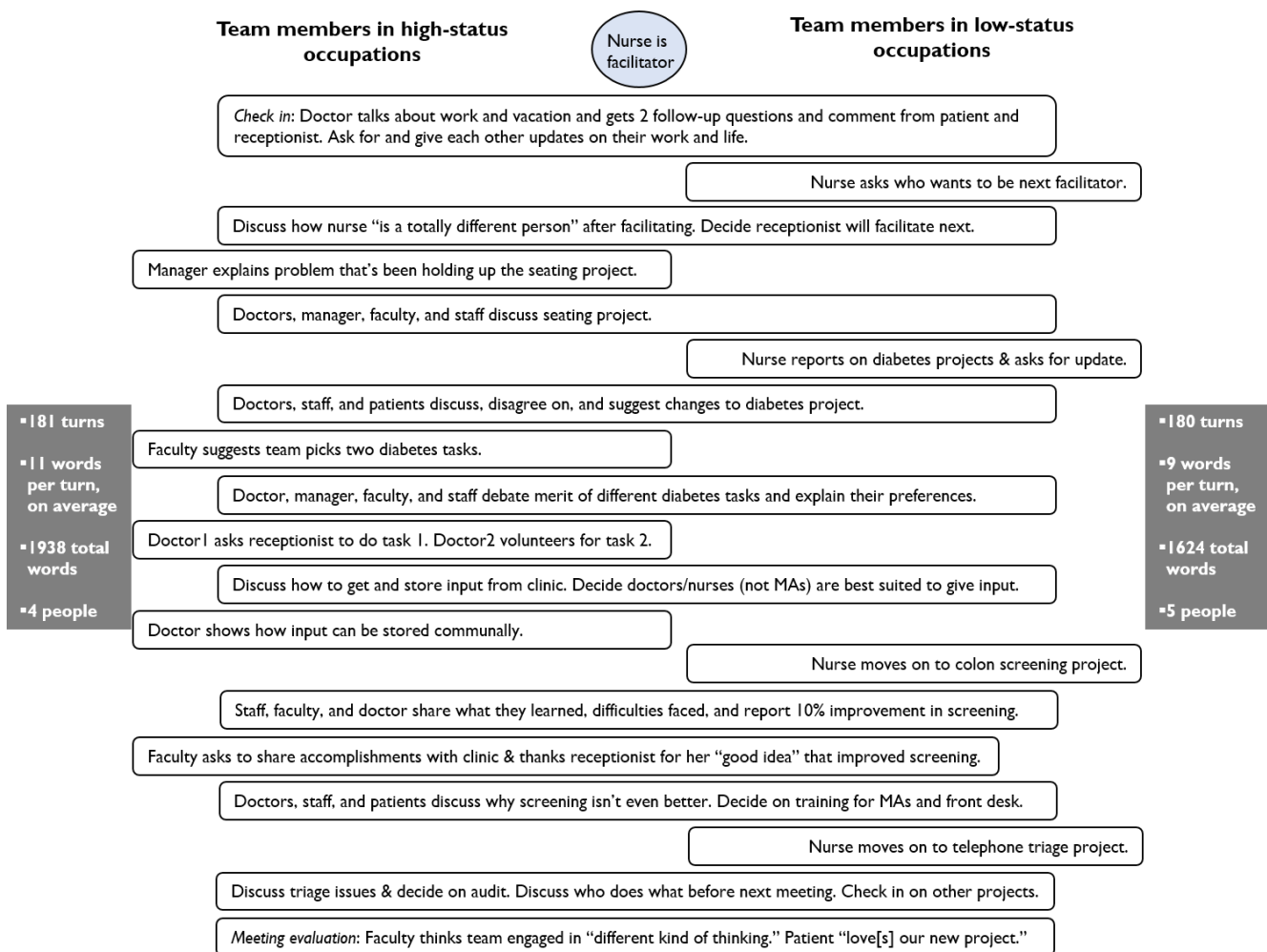
Figure 10. Conversation diagram early in the life of the team (October 11, 2012)



The momentum of this conversation is on the left, where doctors and the faculty team leader reported on work that they led, discussed the next team projects, and expressed their concerns about the team's uncertain authority. On the right, staff members spoke infrequently and defensively, trying to demonstrate their contribution to the team, and occasionally undermining another staff member or occupation in the clinic.

When the team had a more dynamic social hierarchy, the team meetings had a very different conversation structure. Team members from lower-status occupations played a more prominent role in deciding what projects to carry out and how to carry them out (see Figure 11). The medical assistant on the team said the following during an interview in 2014 about her experience on the team: “I think that I’ve had a lot of my ideas; well, all of my ideas are heard. Never shot down, which I love that about [the change team]; it’s like joint decisions. I don’t feel like it’s just my ideas, it’s our ideas.” The change toward dynamic social hierarchy can be seen not just in who proposes ideas but whose ideas get discussed and implemented.

Figure 11. Conversation diagram late in the life of the team (February 27, 2014)



In this meeting, the momentum of the conversation is shared across occupational roles. Partly this is due to more active facilitation and team members being more experienced with team meetings. However, the conversation also reflects greater cross-occupational discussion which provides a space and time for team members from lower-status occupations to make contributions and display voice (as we will show below).

Closing and opening behaviors as antecedents of silence and voice, respectively. I coded the transcripts line-by-line for behaviors that impacted the speaker's own or other people's ability to contribute. Among the 20 meetings, 1183 analytical segments were identified. Once these segments were broken down by first-level codes, I looked at how the statements were delivered and received and eliminated segments that were said by guests, that only happened once or a twice, or that only showed rapport, or the lack thereof, among team members. The remaining codes and segments were examined to see how team members delivered a statement, how it was received, and what if any impact it had on the team. In doing so, the codes collapsed into second-order categories. These categories, in turn, fell into four categories: closings and openings, which we describe below, and voice and silence, which we describe in the next section.

Some of the closing and opening behaviors we observed overlap with antecedents to voice and silence identified in the psychological safety, voice, and silence literature, while others do not. Most importantly, however, the behaviors were exhibited by team members in both high-*and* low-status occupations. These findings provide a more team-based and multifaceted picture of the types of behaviors that contribute to voice and silence.

Closing behaviors. Closing behaviors are those behaviors that either limited someone else's contribution—they closed down others' participation in the moment or later on—or were intended to preserve the hierarchy. We observed five types of closing behaviors: 1) responding negatively to a mistake or problem in the team or the clinic, 2) ignoring someone else's question or input, 3) filtering someone else's input, 4) assigning work to others, and 5) explicitly invoking the hierarchy to sustain the status quo.

The first two behaviors, responding negatively and ignoring others, have been discussed in the psychological safety, voice, and silence literatures (e.g., Detert & Edmondson, 2011; McClean, Burris, & Detert, 2013). These literatures suggest that people's actions are guided by their assumptions of how others will react to their input. These assumptions are often based on people's interpretations of past events and interactions, so we coded for any instance in which a team member responded negatively to a mistake or problem in the team or the clinic. We coded a negative response as any statement or action that was mean, belittling, or harsh, as well as anything that was not neutral or supportive. There were very few examples of negative responses in the transcripts we coded, especially from those in higher-power occupations. This is not surprising, given that—unlike doctors who are surgeons (e.g., Kellogg, 2011)—primary care doctors are not known for having a macho culture or for being aggressive. The primary care doctors on the team limited others' input in more subtle ways—filtering other's input or assigning work to others. (The faculty member and manager did not participate in many of the clinic tasks and so this category was not relevant for them.) Early in the life of the team, if a doctor worked with several members of the team to carry out a task, the doctor would not only report back on his or her experience and findings but also on other team members' experiences and findings, often narrating their experience in a way that was supportive of what the doctor

wanted to do next. If a staff member objected, it was clear to us that the doctors were not being fully factual in representing the staff members' experience. If a doctor was reporting feedback from clinic members who were outside the team, then we coded filtering when the doctor noted that he or she left out comments that were not relevant to the task—like staff members' frustrations. Filtering led others to provide input less because the team expected the doctor to report on behalf of the staff.

The closing behavior that was most common was assigning work to others. Assigning occurred when, instead of asking who would like to do a task or explaining the task and allowing someone to volunteer, a person told someone that they should do a certain task. We coded assigning when someone told another team member to do a task or assigned work to another occupation in the clinic (we did not code assigning when a receptionist on the team said receptionists in the clinic would be good at a task and so they should be responsible for it). Early on, team members in higher-status occupations were much more likely to assign work to others—13 times in the 2012 transcripts, 24 times in 2013, but only twice in the 2014 transcripts.

In all of this coding, it was overwhelmingly clear to us that the team members in higher-status occupations were not the only ones engaging in closing behaviors. With the exception of filtering, staff and patients on the team all engaged in closing behaviors, mostly toward each other but occasionally toward someone in a higher-power occupation. The staff and patients' closing behaviors also impacted others' willingness to give input. We will use the behavior “explicitly invoking the hierarchy to maintain the status quo” as an example: when a patient complained about the hierarchy she experienced on the team, the receptionist and medical assistants both told the patient that she should respect “her ground” and wanted her to shadow them to understand how things are done in the clinic. Team members also ignored each other's

input, which led the person being ignored to not say anything for a stretch of time or to become frustrated. Of the 15 instances we coded in which someone was ignored, 10 of those instances were a patient being ignored by the rest of the team.

We saw fewer examples of closing behaviors in 2014 than we did in 2012 and we saw more examples of closing in the meeting transcripts that had the most disparity in participation by lower-power members (i.e., team members in lower-power roles participated the least).

Table 7. Closing behaviors exhibited by members in high- and low-status occupations over time

	CLOSING BEHAVIOR	Status High/Low	Example	Meetings (#)			Total occurrences
				2012 (6)	2013 (7)	2014 (7)	
1	Respond negatively to mistake or problem	H	<p>Patient: Other medical assistants are not updating and waiting. We should figure out who is responsible.</p> <p>Medical Assistant: That’s a problem we are dealing with; it’s hard to know who is responsible. Did doctor not write up or did medical assistant not do it?</p> <p>Patient: Working on, but I can see patients getting up and yelling</p> <p>Doctor: What would help is getting up and yelling. You are polite and others are polite and unfortunately the front desk gets the brunt of it, but I’m insulated and I would feel more pressure if I heard this was something patients want.</p>	1	1	0	6
		L	<p>Patient: I’m so frustrated; it really affected meeting. [Nurse] was so slow [on the computer], I wanted to take it away from her.</p>	0	4	0	
2	Filtering others’ input	H	<p>Doctor: The list of what you sent—I took out comments and frustration and role data. I tried to make it as free from emotion as possible. Thank you for asking your particular groups for feedback, for putting it together, and sending it to me. I just did editing and put together. Front desk, medical assistant, nurses, residents, and attendings....</p>	3	6	0	9

	L	N/A	0	0	0		
3	Assign work to others	H	Doctor: [Receptionist] will get checklist from [other receptionist]. Receptionist: It's hard for me to get her here for 15 minutes; the phones are off the hook. Doctor: She doesn't need to come, just email.	13	24	2	50
	L	Nurse: Front desk should forward [calls] to nurse	1	8	2		
4	Explicitly invoke hierarchy	H	Doctor: We are running short on time, so feel free to stop me. It's not OK that [manager group] doesn't know how they are going to interact with us. We shouldn't be the ones coming up with a plan. We are not the parent in this relationship. It should have been figured out.	3	0	0	7
	L	Doctor: [Want to know] how you felt with [doctor] not doing outreach? On our team, the doctor is supposed to be doing outreach. She's looking over list and scrubbing. Receptionist: I'm fine with it. It's how it should be; she's a doctor.	1	3	0		
5	Their Input or question ignored	H	Doctor: Is there no week when we can do mostly one color [team] on one day? (question ignored by group)	0	2	0	15
	L	Patient: I would like to get waiting room cleaned up. Receptionist: What are we talking about? Patient: There are so many signs in that room that people don't notice anything. Nurse: There are still issues with prior authorizations. (Everyone chimes in afterwards without acknowledging patient comment)	1	8	4		

Opening behaviors. The opening behaviors we saw map fairly closely to the psychological safety and voice literatures, and they were exhibited by all members of the team rather than being limited to those in higher-status occupations. We will however pause to underscore the fact that they are exhibited by all members of the team and not just the team leader or those in higher-status occupations.

The opening behavior we saw most often was asking others for their opinion, input, or information. Much like the “leader inclusiveness” that Nembhard and Edmondson (2006) described, asking provided an opening for others to contribute; unlike their finding, we saw all team members engage in these inclusiveness behaviors. Team members from higher-status occupations did this when the social hierarchy was more rigid at the start and did it even more when the hierarchy was more dynamic at the end. Team members in lower-power occupations also engaged in asking throughout, but their levels of asking went up dramatically from 16 in the transcripts coded from 2012 to 26 in 2013 to 54 in 2014. Those in lower-power positions asked questions not only of those in higher-status occupations but also of other staff members and patients. The team, overall, became more likely to ask, while initially those in higher-status occupations were doing most of the asking. While less common than inclusiveness behavior, but in some ways more impactful, team members also engaged in asking for a change in hierarchy. This sometimes led the team to try to enact the change (e.g., the doctor example in Table 8), sometimes led to questions (e.g., the receptionist example in Table 8), and other times led to vocal disagreement, but regardless of the response in the moment, it provided the team with a moment to reflect on hierarchy within the team or in the clinic, which helped create change over time (see Chapter 3).

We also saw examples of team members in higher- and lower-status occupations respond neutrally or positively to problems or mistakes. At first, primarily those in higher-occupations were responding, but more team members in lower-status occupations also responded neutrally or positively to problems and mistakes over time, which created a space for discussing problems when they arose. We saw a definite uptick of “building each other up” among members in high- and low-status occupations. We found that asking for input led to input in the moment, but like

“asking for change in the hierarchy,” building each other up seemed to encourage more participation, more acts of leadership (e.g., greater effort by the nurse to lead the team), and more rapport among team members who during their final interviews still remembered the positive things people had said about them and their work.

Table 8. Opening behaviors exhibited by members in high- and low-status occupations over time

OPENING	Status	Example	Meetings (#)			Total
			2012 (6)	2013 (7)	2014 (7)	
1 Ask others (for their opinion, input, or information)	H	Faculty: Lots of positive, some kinks, let’s move forward and be helpful to other teams. What do we want to do next time?	44	77	52	269
	L	Nurse: How do we know if you [doctors] are too busy in clinic or not in clinic?	16	26	54	
2 Ask for change in hierarchy	H	Doctor1: It’s a culture thing—some doctors don’t want to be interrupted for any reason so nurses don’t feel empowered to interrupt. Doctor2: So what do we do? Doctor1: Talk with the provider group, “Don’t you agree it’s less work to deal with this in real time?” Know what to do—don’t ask not to be interrupted.	3	7	0	23
	L	Receptionist: You should trust the judgment of people answering calls like me; a little baby—it’s not triage, not clinical. I should know if I need to send to nurse. I am the blue [team] person on front; others can book for red or yellow or green. If someone who doesn’t have access could come to me, I could put that [appointment in].	1	9	3	
3 Respond neutrally/ positively to problem or mistake	H	Doctor: [Medical Assistant] running meeting said we should go over roles, but [other doctor] had sent out minutes and plan. [Medical Assistant] hadn’t read meeting minutes. It was a reminder that the right hand is not talking to the left hand....	18	23	12	74

	L	Nurse: [Medical Assistant] you said you would talk to [manager] about GI nurse doing the education. Medical Assistant: No, I didn't, I forgot. Patient: Remind yourself. ... Receptionist: What about getting [trainer]? She's the queen. ... Medical Assistant: Actually, I'll ask [coordinator] and not [manager] since [coordinator] talks about [trainer] all the time.	2	6	13		
4	Build each other up	H	Medical Assistant: Did you see the board? Doctor: The board looks awesome, way better than when I tried it. I messed up the whole feng shui.	1	3	9	22
		L	Medical Assistant: I think you did amazing job. Patient: You did a great job and didn't seem nervous. Faculty: What did she do really well? Medical Assistant: I thought stayed on track well—the group went off track and you brought us on topic really well. Patient: What I liked is the fact that it was your first time and you didn't seem nervous; you corrected yourself, reorganized thoughts and us, and it was great—it didn't interrupt flow Nurse: Thank you.	0	4	5	

A shift in voice and silence

Although voice has been studied extensively, there are two areas that are critical to teams but are underexplored: change in voice over time and variance in voice-like behaviors between high- and low-status members in teams. We suggest that both the change over time and the differences between roles are important components in understanding teams and in understanding voice. (Note: we coded the same behaviors for members in higher-status occupations even though the latter were not engaging in upward voice so that we could compare the frequency of these behaviors.) We also suggest that in addition to differentiating between

promotive and prohibitive voice, there may be differences within these categories that are worth exploring. In addition to coding moments when team members offer information, we also coded moments in which they disagreed with another team member since these disagreements often carried information. While not every instance challenged or upset the status quo, they all seemed intended to improve organizational functioning.

In the transcripts we coded, we did not see much change in offering information in a more rigid hierarchy or in a more dynamic hierarchy for members in lower-status occupations. We did, however, see an increase in “offers to do work” by members in lower-status occupations as the hierarchy became more dynamic. Similarly, we did not see a great deal of change among members in lower-status occupations in terms of disagreeing about accuracy or goals, while we did see an increase in disagreeing about team tasks. We found that members in lower-status positions generally were not disagreeing about the goals of the team—that was mostly occurring among members of higher-status occupations, particularly the team leader. Members in lower-status occupations were disagreeing about accuracy—they pointed out something was inaccurate at about the same rate throughout. However, as team members’ competence was recognized by the team, they were more vocal about disagreeing with others about the team’s work. Over time, members in lower-status occupations were also more likely to display vulnerability, which was critically important to the team—it was during these moments that other team members learned that there is something that staff members or patients do not know or experience that should be addressed by the team and the clinic, often prompting changes in the work.

Table 9. Voice behaviors exhibited by members in high- and low-status occupations in meetings over time

VOICE	Status High/ Low	Example	Meetings (#)			Total
			2012 (6)	2013 (7)	2014 (7)	

1a	Offer information (facts, opinions, experience)	H	Doctor: We did a push like this for diabetes for [certification]; put it on board and lots of work. For diabetes need to do that over and over and it never ends. For colon, if you explain one year, it's easier the next year. If you do a colonoscopy, it buys you 10 years. More bang for your buck because it's less iterative. I agree for new patients it's going to be 20 minutes sometimes. Overall, that's one of the highest yield interventions, more than calls. Capturing when they're here. Rather than you [doctor], I think it's the medical assistant.	9	4	5	41
		L	Medical Assistant: Can I share my experience here? Every time I see 'due for colonoscopy,' I tell them the only difficult part is the prep—only half a day of no food. It remove toxins and is helpful. Will give you good drugs and be stress free for one day. It worked because I booked some.	7	9	7	
2b	Offer to do work	H	Faculty: Printing out lists and doing PDSA, can everyone live with that? Not quite dead but sick? Ok, who wants to start mapping, work on it? Doctor1: Happy to work on it. Doctor2: Happy to.	6	12	3	55
		L	Faculty: [Doctor]—I don't feel like he should be the only one taking notes. Doctor: If it gets burdensome, I'll let you know. Receptionist: If you need to, you can lean on me to do it.	4	15	15	
3a	Disagreeing about goal or accuracy	H	Doctor: I want to move us along. You are highlighting disconnect [organization]-wide and experience here. There's always going to be changes on planned care and it's outside the scope of [this team]—improving communication. But what we can do in our meetings is to start to bridge that divide between perception providers have and the needs of planned care and the rest of the folks on the team. Start with something small.	14	6	22	72
		L	Doctor: Let's go back to 6 questions—what are we trying to improve? Is patient satisfaction different from engagement? Patient: Need one before the other. Patient engagement is basic, but I think if starting off with patient profiles and type of patients,	9	13	8	

			maybe [patient group] and not [this team] fits in the beginning.				
3b	Disagreeing about team task	H	Receptionist: ...Did have a thought. There are a lot of diabetics and doctors, if we did break it up and focus on that to let them feel it. All [occupational roles] joining together on one specific thing. Introduction would be more pleasurable instead of panic. Faculty: A role for everyone in diabetes. Doctor: I feel that there's learning by starting on one thing, but it doesn't give us information for [clinic teams], just information on one [disease]... each round will lead to system issue and changing the system each time...	23	22	21	
		L	Doctor: Maybe 2 front desk for one nurse and doctor. ... Receptionist: Two front desks would be chaotic.	15	34	23	138
4	Display vulnerability	H	Doctor: The low hanging fruit—how to organize—name a leader [in clinic teams]; we don't know who it is and we never named a leader. The de facto culture is doctors, but they are horrible leaders because they are not there and don't see themselves as the leader.	5	6	3	
		L	Medical assistant: I don't even know anyone who has had this personally, so every time I try to explain, I say "Hold on let me find out or ask doctor." I don't know the ins and outs, and I feel like I'm learning stuff every time, so I feel comfortable enough to ask [patients], but if I knew really well, I could talk someone into it more.	1	4	8	27

Detecting and measuring silence was difficult since we did not directly ask people about their experience with silence over time. Lack of participation is not a certain signal of silence, but it is an indicator of silence. We saw much less participation by members in lower-status positions at the start when the hierarchy was more rigid and more participation when the hierarchy was more dynamic. Likewise, lack of voice is not the same as silence, but again we saw more voice in 2014 than in 2012. There were times when I noted non-verbal behaviors, such

as in 2012 when the receptionist laughed after the faculty member noted that the group had handled tensions well and brought in different perspectives. In this particular meeting, the receptionist repeated her input several times and was either ignored or acknowledged and then ignored while the doctors, managers, and faculty worked on the details of the task. Based on my observation of this receptionist over time, had the meeting not been so difficult for her, she might have pointed out that the team had in fact not incorporated different perspectives.

Factors that reinforce the impact of social hierarchy on silence and voice

The antecedents that promote dynamic social hierarchy, which included changing context and changing tasks, were explored in Chapter 2. Authority uncertainty—uncertainty about how much and what kind of authority the team has over its work—is a contextual factor that acts counter to these antecedents and exacerbates the relationship between rigid social and silence.

All team members expressed authority uncertainty (see Table 10), but it became a large and emotional concern for the faculty member and doctors who were the main team representatives to the clinic and organization and who directed comments about this to each other. This uncertainty helped stabilize the team hierarchy because the individuals in higher-power occupations spent so much time and effort trying to understand and lobby for more authority within the clinic that there was no space, time, or displayed interest in expanding the authority of team members from lower-power occupations. At the same time, members from lower-status occupations also experienced their lack of authority keenly, though differently from those in higher-status occupations. They were anxious about not being able to prevent more work from being assigned to them or to people in their occupations. In their comments on the team, they protected themselves and their occupations (see Table 10). They were careful to explain how they did or did not complete tasks and how additional tasks should be assigned to anyone but

them. While they would still occasionally volunteer to carry out team tasks, they were quick to argue against new permanent assignments.

Table 10. Shifts in authority uncertainty and protective behaviors over time

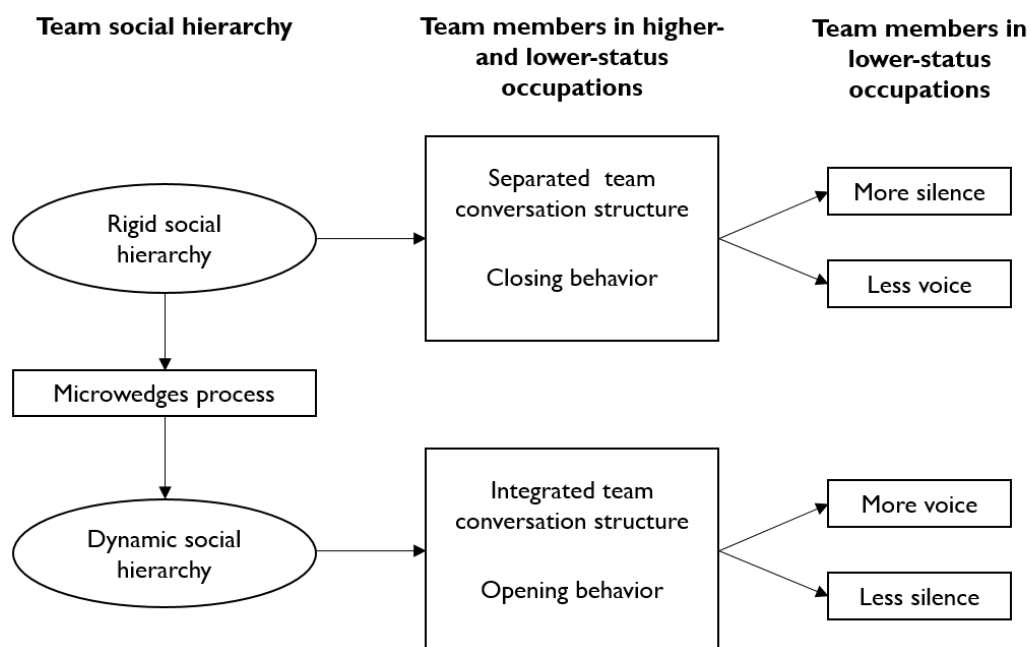
	Status	Example	Meetings (#)			Total occurrences
			2012 (6)	2013 (7)	2014 (7)	
Team authority uncertainty	H	Faculty: I agree with you, we do need to keep looking at half-full glass; we have tremendous opportunity. Others have said and I have felt that the process we are using now is not efficient and saps morale. Our lack of clarity means it goes back [to managers] and gets shot down. Very clear that if any [group projects] have implications outside this group of people, it needs to go to [managers].	31	6	1	41
	L	Receptionist: Lots bouncing around. We're here for 2 hours, do this work, and then down the hall [managers] say no. What do we need to know without coming to you?	2	1	0	
Protect self or occupation	H	Doctor: All things routed from doctor, there'll be pushback—why don't you [nurse] call and get all the information so that I can do it. I know it should go to doctors, but they'll say "Couldn't the nurse get all the information and then we'll call back?"	1	3	2	25
	L	Doctor (guest): Question of not wanting to overwhelm people—should we overwhelm front desk people first?	9	9	1	
Protect teammates or other occupations	H	Receptionist: Not as long as I am sitting here. Doctor1: Sounds like the real problem is that nurse has to be in [area], and [managers] need to understand that and hire more people or change the schedule. Shouldn't be about not wanting to go there. Doctor2: Concerned that the expectation is for you [Nurse] to go down there. Nurse: Seems like a moot point. Doctor2: I don't think it is; it's not good for morale. ...	2	2	7	19
	L	Receptionist: Sounds like you need a nurse; that's the bottom line, especially if opening [more areas]. Doctor1: I think we are going to talk to [manager]. Nurse: I came in early both days to try to get it done. Receptionist: I am here late. Nurse: You already have so much to do.	0	0	8	

We see a change in authority uncertainty over time—by 2014 there was only one reference to it in the sample compared to 33 references in 2012 (see Table 10). The teams not only exhibited a lack of authority uncertainty but members in lower-power positions were no longer speaking in ways that protected themselves or their occupation. Interestingly, members in both high- and low-status occupations were more likely to make statements that protected other team members or people in other occupations (see Table 10). The team members' interests were less personalized—less about themselves and their interests—and more socialized—more about the interests of the team and colleagues in other occupations in the clinic. When a team member sees another member of the team look out for her interests and the interests of people in her occupation, she may be more likely to display vulnerability (see Table 9) such as bringing up topics she does not understand well or mistakes that she has seen, which provide the team with critical information to which that they otherwise would not have access.

DISCUSSION

Our findings suggest that there is a relationship between the state of the social hierarchy and voice and silence behaviors, which we depict in Figure 12. We found that the rigidity or fluidity of the social hierarchy at different points in time helped create a more separated or integrated conversation structure and more closing or opening behaviors, respectively. We found that the closing and opening behaviors were exhibited by team members in high- *and* low-status occupations. We further found that team members in lower-status occupations exhibited fewer voice behaviors when the social hierarchy was rigid than when it was dynamic.

Figure 12. Model of the relationships between social hierarchy and voice



Our findings contribute to knowledge about social hierarchy and voice. Two recent studies on shared leadership have looked at teams created in the laboratory that are engaged in longitudinal simulations. These studies have found that teams in which members with the appropriate expertise take on leadership behaviors outperform teams where leadership does not shift (Aime, Humphrey, DeRue, & Paul, 2014; Drescher, Korsgaard, Welp, Picot, & Wigand, 2014). These studies either ask participants at the end of the simulation to comment about their experience or measure shared leadership on specific tasks. We build on this work in two ways. The first is to suggest that organizational teams may start with a rigid hierarchy (which reflects the hierarchy in the organization and industry), and while this hierarchy may be difficult to change in the short term, it can change and become more dynamic longer term. The second is to explore the relationship between a team's hierarchy, the team's conversation structure and behaviors, and the voice and silence of members in lower-status occupations. We suggest that there may be different types of proactive voice—low-status team members may be more likely to

engage in certain types of asking and disagreeing when the social hierarchy is dynamic, while other types of asking and disagreeing may be more immune to the team's social hierarchy.

The social hierarchy and voice literatures have sought to understand when people exhibit voice, as well as the conditions that allow for voice. These literatures, however, have either focused on the relationship between the team manager and a subordinate or averaged team members' ratings to describe the group-level psychological safety. These literatures have also focused on what managers and leaders can do to encourage subordinates to speak up. We depart from this approach to suggest that all team members exhibit the closing and opening behaviors we observed, and as a result, team members—doctors who were not leaders, staff members, and patients—had a large impact on the antecedents of voice. We also saw no evidence that encouraging people to speak up early in the life of the team had a significant impact on their voice behavior.

In considering the factors that might exacerbate the impact of social hierarchy on voice, we saw that team members expressed different patterns of protective behaviors—initially protecting themselves and their occupations and later protecting team members and other occupations. This might reflect their more personalized versus more socialized perspectives at different points in time. We argue that when members no longer feel the need to protect themselves, they are more likely to be vulnerable and share information that otherwise would not be available to the team.

Our findings have implications for organizations that are trying to promote voice behavior. We suggest that encouraging people from lower-status occupations to speak up or focusing on the inclusive behaviors of leaders and managers might not be sufficient—that, in fact, it is important to consider the state of the underlying social hierarchy, as well as the

conversation dynamic in teams, alongside the behaviors that team members in high- and low-status occupations exhibit.

While we only examined these relationships in one team, our unit of analysis was segments of meeting interactions over time, which provided variance between occupational roles and time periods, the areas we sought to explore. North team was also an extreme example in terms of its ability to become more dynamic, so it provided a setting in which to granularly explore interactions that many teams experience as they try to incorporate members from different occupational backgrounds and different levels of power and status in the organization.

Future research on social hierarchy and voice should explore team composition, meeting attendance, and the role of ongoing training in teams. We wonder whether the proportion of people from higher-status occupations and lower-status occupations impacted the opportunity for voice. More people in the room necessarily means less speaking time per person, but we suspect that when more doctors were in the room a doctor spoke even more than when the same number of people were in the room with a lower proportion of doctors; the inclination to speak to members of your own occupation means that when two or more doctors are together, they may take up more air time and set the tone for the team conversation, which decreases the opportunities for voice in a multidisciplinary team. Likewise, attendance and absence at meetings might signal different things for team members in higher- and lower-status occupations. Doctors on this team seemed to miss meetings because they were scheduled to be in other clinics and so were physically unable to attend; staff members and patients, however, seemed to miss meetings because they were dissatisfied with the team. Everyone was extremely busy at North clinic, often facing problems of doctor and staff-shortages, but when team members were very excited about the team or their project, they found a way to attend the meeting—calling in favors from peers,

speaking to managers, moving appointments, or staying later at the end of the day to complete their work. Attendance among members from lower-power occupations could be a signal for satisfaction, involvement, and willingness to engage in voice. It would also be interesting to explore whether different training interventions to increase voice among those lower in the hierarchy and listening among those higher in the hierarchy when the team has a more rigid or a more dynamic social hierarchy.

CONCLUSION

Multidisciplinary teams are composed of members from different occupational backgrounds who can default to the organizational hierarchy, so understanding how members can better use the information and skills of all their members is critical. The North team experienced very different patterns of interaction over time. We argued that these patterns of interaction were a result of the team's underlying social hierarchy and whether it was more rigid or more dynamic. We also argued that these patterns of interaction had implication for members from low-status occupations to engage in voice. Understanding the relationship between social hierarchy, team communication structure, team behaviors, and voice can shed light on new theoretical and practical directions for multidisciplinary teams.

CHAPTER 5. CONCLUSION

In this dissertation, I introduce the concept of dynamic social hierarchy to help explain why and how influence patterns in teams might change as their context, task, and/or membership changes. I then propose the microwedge process as the mechanism through which social hierarchies shift from being more rigid to more dynamic. Finally, I suggest that having a more dynamic social hierarchy has significant implications for team members' interactions, allowing for greater voice among members who are from lower-status occupations. This dissertation emphasizes the role that team members, particularly those from lower-status occupations, play in creating a more dynamic social hierarchy and in gaining influence on the team.

While the management literature has long emphasized the role of managers and team leaders, this dissertation provides an alternative perspective that draws from the interactionist history of team research. In team research, managers and leaders certainly play a significant role in teams, but much of their work is confined to setting up the conditions for effective teams and mentoring during critical transition points (Hackman, 2002). The team members themselves play a substantial role in determining their day-to-day interactions and in changing them if they are not helping the team be effective. With this in mind, I will briefly discuss the theoretical, methodological, and practical implications of this dissertation and close by proposing future directions for our field.

Theoretical and methodological implications. Change in teams has long been studied in a variety of ways. In this dissertation, I draw from and contribute to the tradition that focuses on adaptive team change processes—the longitudinal, interactional relationships among team members, teams, and the systems in which they are embedded (e.g., Ancona & Chong, 1996, 1999; Ancona & Caldwell, 1992; Kozlowski, Gully, Nason, & Smith, 1999; Poole, 1990). As

discussed in Chapter 2, this adaptive approach opens up a different and much-needed lens for understanding how team members from higher- and lower-status occupations help create change over time. An adaptive approach allows me to theorize about how the social hierarchy in a team changes over time, how this change contributes to changes in team member expertise—particularly expertise recognition and expertise acquisition—how these changes can impact voice behaviors in the team, and how all of these changes reinforce each other.

In Chapter 2, I introduced the concept of dynamic social hierarchy and focused on the change from rigid to dynamic social hierarchy. I proposed that teams have a rank ordering of dyadic influence (Bunderson, Van der Vegt, Cantimur, & Rank, 2016; Magee & Galinsky, 2008) and that the direction of influence can and does change over time. The change in social hierarchy is caused by contextual changes that lead to changes in team members' power or status—team members in lower-status occupations are, over time, perceived as effectively performing and possessing knowledge about tasks that are integral to the team and organization. In Chapters 3 and 4, I observed that once team members from high- and low-status occupations experience this shift in perception, team members from higher-status occupations were able to create structural changes that allowed team members from lower-status occupations to lead or co-lead projects, make decisions, and influence the behavior and decisions of other team members. Team members from higher-status occupations began to defer to those from lower-status occupations when working on that project. The influence and deference structure of the team changed again when the project changed and other people were identified as leaders (see Figure 8 in Chapter 4). These ongoing changes characterize the dynamic nature of the team's social hierarchy.

Shifts in hierarchy from more to less centralized and from more to less steep have been theorized and studied in organizations (e.g., Bunderson et al., 2016; Gardner, 2012; Romanelli &

Tushman, 1994), but these types of shifts are not the focus of this dissertation. I studied teams in a health care organization. I did not observe a receptionist or a medical assistant gain a permanent equal or higher standing in the social hierarchy than a nurse or a doctor. I do not think that is possible or advantageous in most situations unless people seek out additional training (e.g., Katherine Gottlieb who rose from medical receptionist to CEO of Southcentral Foundation, MacArthur Foundation, 2004). In fact, I agree with work from the organizational psychological tradition (e.g., DeRue, 2011) that suggests that social hierarchies can never truly be flat, nor can power ever be shared equally. Like many scholars, I think that a lack of social hierarchy and efforts to remove social hierarchy can be disastrous (e.g., Halevy, Chou, & Galinsky, 2012; Magee & Galinsky, 2008; Ronay et al., 2012). However, like Anderson and Brown (2010) and Follet (1925), I believe that social hierarchies need to match the environment and task at hand. While equal power may not exist, it can be held by different people at different moments in time and claimed and granted between dyads and among members of a team. In order for a team to effectively complete its work in a changing environment with shifting tasks, the team needs to utilize the most appropriate experience and expertise; in understaffed settings such as health care, the team also needs to use availability and training to ensure projects are completed. Since experience, expertise, and availability are not concentrated in the same people, from the same occupations, and with the same experience, the team needs to seek out the best match for a given project. The teams that I studied did not learn to do this quickly or efficiently. Rather, it took accumulated experience, conflict, and problem solving over the 22 months that I observed them.

To explain how these teams, particularly the North change team, transitioned from more rigid to more dynamic social hierarchy, I proposed the microwedge process in Chapter 3. This process starts with triggers—extra-role behaviors—that, regardless of how they are initially

received, are sustained in the team over time and lead to changes in cognition and team structure. These triggers introduce new information, generally about the experience and expertise of team members from lower-status occupations. This new information diffuses into the team and can be carried on and used even when the person who originally provided the information exits the team. While all the triggers I observed were extra-role behaviors, all extra-role behaviors were not triggers. To be a trigger, the extra-role behavior had to bring about cognitive change in the team; to do so, the source of the extra-role behavior had to be able to repeat the information, or allies had to sustain and use the information, or moments of reflection had to cause team members to remember and use the information. In the microwedge process, cognitive change preceded—and in fact formed the foundation for—changes to the team’s structure and processes. The changes themselves were then brought about by members inside the team.

Social hierarchy, expertise, and voice have been studied separately by researchers using different methodologies and asking different questions, thereby limiting their ability to discuss how these three areas contribute to changes in teams over time. Chapter 4 explored the relationship between social hierarchy and voice. We found that communication patterns which were deeply dependent on social hierarchy—such as conversation structure and opening and closing behaviors—played a role in people’s willingness to engage and exhibit employee voice behaviors. We challenged the voice literature to consider that voice behaviors in teams change over time and that they are impacted by the behaviors not only of the leader, but of all the team members.

This dissertation also calls for a return to the field and for thinking about the implications of time and change in teams. Much of the innovative work in social hierarchies is being conducted in the laboratory with individuals, dyads, and teams who have no past or future

history. Under these conditions, it is difficult to study the more dynamic aspects of social hierarchy in teams and to motivate the difficult and vulnerable work involved in creating change in teams. An approach that studies teams over time in their natural habitat may provide critical insights that would benefit organizations and strengthen our theoretical contributions.

Practical implications. This dissertation suggests a variety of ways in which organizations and teams that seek to use the expertise of all of their members can encourage a more dynamic social hierarchy. The first step an organization can take to help teams shift to a more dynamic social hierarchy is to create a context that is conducive to change. There not only needs to be legitimacy at the organizational level for the participation of team members from lower-status occupations, but also substantive reasons for them to lead, make decisions, and fully participate. Ely and Thomas' (2001) work on cultural diversity provides a description and explanation of how organizations can legitimize a new group's role in the change process. Ely and Thomas propose the importance of an organizational-level integration-and-learning perspective which links diversity (for the purpose of dynamic social hierarchy, this would be occupational status diversity) to work processes, making the diversity "a resource for learning and adaptive change" (p. 240). Most teams are embedded or affiliated with organizations, so the context in which they work is critical for catalyzing the teams' change.

Second, leaders and managers do play an important role in creating change; however, their primary role is to not to create the change directly but rather to create the conditions for a successful team, to coach and provide advice when needed, to provide resources and opportunities for the team, to remove organizational barriers, and to help the team regularly assess itself (Hackman, 2002). Managers and leaders hold power, and, as research on power and status has shown time and time again (see Chapter 2 for a review), those with power are unlikely

to suddenly give it away to others. Leaders and managers would therefore do well to allow the team—particularly those in lower-status occupations—to seek change, especially when it is difficult and undermines the status quo. Leaders and managers should also allow team members to earn recognition for their work, to use their experience, and to develop their expertise. This may involve giving teams more autonomy and tolerating experimentation in the team, even if it makes managers or leaders uncomfortable or undermines what they believe to be true.

Third, a major resource that leaders and managers can provide is a trained facilitator or training in facilitation. The three teams I observed were facilitated by people with varying levels of experience and training, which had a significant impact not only on the team's performance but also on the team's ability to make its social hierarchy more dynamic. For example, the North team started 38 projects while the South team started eight projects (which were similar in scope and nature to North's) in the same time period because North had much more productive team meetings. This provided 30 more opportunities at North for team members from lower-status occupations to take on leadership roles. It also reduced professional threat to team members from higher-status occupations who did not want to and in fact could not lead so many projects and so were more accepting of other people taking on leadership roles. If a team is struggling to fulfill basic needs (e.g., keeping track of work, moving work forward, getting timely feedback, etc.) then it will not have the space or time to engage in higher-order work such as shifting its social hierarchy.

Fourth, team members should engage in a strong team launch and regular check-ins (e.g., Gardner, 2012). In particular, the team launch should highlight the experience and expertise that team members bring to the team. They should, however, not be limited to areas that different occupational roles are supposed to have. They should be broad and draw from previous positions

and extracurricular activities. For example, if a team member has over a decade of experience as a union leader, negotiating and advocating for dozens of union members, that experience should come to light even when the team member's formal role is a receptionist. Similarly, if a medical assistant has advanced art skills, those should also come to light, since much of the team's work is to convey its outcomes and collect input from other members of the organization, which at Central and North was done more effectively through visual displays than through text communication. Regardless of how in-depth and important the initial team launch may be, however, interactions between team members will likely default to what they know, which is often (as in the case of Peoplehealth) a more traditional rigid social hierarchy. It is therefore critical to have built-in check-ins that allow people to see how much progress they have made on their team goals and to process information about each other more deeply as they gain experience and trust working together.

Fifth, team members should be trained to recognize and use each other's extra-role behaviors. As people take on work outside of their organizational role, that work should not just be praised, but there should also be a concerted effort to either use the work or to explain in detail why it cannot be used and encourage the person to try again. Similarly, as people speak up about things they observe or experience that they disagree with, the team should have a norm of listening, discussing how they can use the information, and not reacting until the next meeting. Team members do not create a psychologically safe environment by trying to make it safe—good intentions are not sufficient. Rather, the team should agree upon norms and structures to facilitate the transition to psychological safety so that when people voice disagreement or criticism the team has an opportunity to use the information before it is discarded. Over time these norms act as scaffolds for the space that allows people to engage in both critical and

positive voice behaviors that may start raising questions about the legitimacy of the status quo, particularly around social hierarchy.

Sixth, it should not be taboo to question the legitimacy of the team or the competency of fellow team members. Research has shown that teams are often dysfunctional, so many people who are asked to join new teams question the wisdom of having a team, have different vocabularies and expectations of the team, and may very well resent being placed in a team with people from other occupations. If these issues are not brought to light and discussed periodically, they will fester and get in the way of not only changes in team social hierarchy but also team performance. Similarly, in cross-occupational teams, there are well-established heuristics or stereotypes that people use to understand each other's work; while these heuristics are efficient, they can pose barriers to change. If a medical assistant claims she can do a task but the doctor does not trust that she can, the doctor would be better served asking to observe the medical assistant in action, perhaps offering feedback and pointers, rather than rejecting the idea outright or staying silent and redoing the medical assistant's work.

Seventh, the team may change much faster than the organization, and it can risk isolation if it is not in constant communication with the organization, its managers, and its leaders. The most effective team will not be able to sustain long-term change to its social hierarchy, particularly if the change allows for more a more dynamic social hierarchy, if it is being undermined from the outside. The team will also not be able to respond to changes in its environment and tasks if it is not constantly scanning for updates. Team members would benefit from thinking proactively about their boundary-spanning activities and creating norms and structures to bring information into the team and out to the organization at regular intervals. Likewise, these norms and structures should buffer the team from push-back against changes to

its social hierarchy while the organization is catching up. For example, if nurses in the clinic are giving the nurse on the team a hard time for her new leadership activities, the team must be there to buffer the nurse until the other nurses understand and support the nature of the change.

Future work. Scholars interested in exploring dynamic social hierarchy may look to organizations such as startups that have small, highly differentiated teams working toward common goals. As these startups grow and gain more hierarchy, it would be interesting to understand when the new hierarchy becomes rigid and when it becomes dynamic. Understanding these early processes could provide interesting insights and solutions for the struggles faced by larger mature organizations, such as those in health care, as they try to allow more people to gain leadership over projects, influence others, and take on more decision rights. In mature organizations that are characterized by a flatter hierarchy, it would be interesting to explore whether teams, particularly cross-occupational teams, have more dynamic social hierarchies than more vertical and centralized mature organizations. If they do not, it would be helpful to understand the similarities and differences in using team member experience and expertise between teams characterized by a flatter social hierarchy and teams characterized by a more dynamic social hierarchy.

If we can understand how to allow team members across occupations to use their relevant experience and expertise to take on greater responsibility over team projects, team members may gain task-specific influence over the team regardless of their position in the hierarchy, and if this happens continually over time, teams may ultimately be more successful in using all of their members to achieve their goals. There is a lot of work that still needs to be done to fully understand dynamic social hierarchies and the micro-processes that allow them to develop, but this dissertation is a step in that direction.

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