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Administrative Science Quarterly 2014 59: 375 originally published online 30 May 2014

DOI: 10.1177/0001839214538262

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Administrative Science Quarterly
59 (3)375–408
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DOI: 10.1177/0001839214538262
asq.sagepub.com
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Abstract

We use data from a 12-month ethnographic study of two medical-surgical units in a U.S. hospital to examine how members from different occupations can collaborate with one another in their daily work despite differences in status, shared meanings, and expertise across occupational groups, which previous work has shown to create difficulties. In our study, nurses and patient care technicians (PCTs) on both hospital units faced these same occupational differences, served the same patient population, worked under the same management and organizational structure, and had the same pressures, goals, and organizational collaboration tools available to them. But nurses and PCTs on one unit successfully collaborated while those on the other did not. We demonstrate that a social structure characterized by cross-cutting demographics between occupational groups—in which occupational membership is uncorrelated with demographic group membership—can loosen attachment to the occupational identity and status order. This allows members of cross-occupational dyads, in our case nurses and PCTs, to draw on other shared social identities, such as shared race, age, or immigration status, in their interactions. Drawing on a shared social identity at the dyad level provided members with a “dyadic toolkit” of alternative, non-occupational expertise, shared meanings, status rules, and emotional scripts that facilitated collaboration across occupational differences and improved patient care.

Keywords: cultural toolkit, coordination, cross-occupational collaboration, professions, intergroup relations, group diversity, demography, status, hospitals, healthcare, sociology of work and occupations, medical sociology

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Scholars of work and occupations have demonstrated that because different occupations have different status, shared meanings, and expertise, it is difficult for people to collaborate with one another across occupational boundaries (Barley and Tolbert, 1991; Carlile 2004; Faraj and Xiao, 2006; O'Mahony and Bechky, 2008). Difficulties from status differences can occur because an occupational group's prestige, authority, and autonomy result from occupation members hiving off lower-status dirty work to subordinate occupation members and protecting occupational boundaries rather than collaborating with members of different occupations (e.g., Abbott, 1988; Bechky, 2003a; Anteby, 2010; Ranganathan, 2013). Difficulties over meanings can occur because occupation-specific identities and beliefs often make it hard for members of different occupations to understand and appreciate each other's actions (Perlow and Weeks, 2002; Bechky, 2003b; Bailyn, 2006; Anteby, 2008). And difficulties around expertise can occur because incompatible codes, routines, or protocols often make it challenging for members of an occupation to share knowledge with non-members (Barley, 1986; Carlile, 2002; Bailey, Leonardi, and Chong, 2010; Huising, 2014).

But scholars have also found that, despite these difficulties, when organizations provide certain tools to foster collaboration, cross-occupational collaboration can be successful (see Okhuysen and Bechky, 2009, for a review). Rules and routines can improve collaboration by bringing interdependent groups and individuals together and specifying responsibility for tasks (e.g., Feldman, 2000; Heimer, 2001; Feldman and Pentland, 2003). Boundary objects—objects used by multiple occupational groups to coordinate their work—can support the translation of meanings and the negotiation of status across occupational boundaries (e.g., Star and Griesemer, 1989; Bechky, 2003b; Carlile, 2004; Levina and Vaast, 2005). Also, common spaces can help promote communication and camaraderie among team members (e.g., Bechky, 2003b; Kellogg, Orlikowski, and Yates, 2006). What they have not explained well, however, is why such tools are not always effective in fostering cross-occupational collaboration. In this paper, we demonstrate that the answer may lie in demographic differences, which are important determinants of intergroup relations.

Despite the long history of work on the impact of demography in single occupations in the sociology of work and occupations literature (e.g., Blair-Loy, 2001; Vallas, 2003; Turco, 2010; Cech et al., 2011), to our knowledge no studies have investigated the impact of demography on collaboration between members of different occupational groups. Cross-occupational collaboration scholars typically do not report or theorize about demographic information, even though demography may have shaped the collaboration (or lack of it) that they observed. For example, we are never told the demographic characteristics of occupational groups in the cross-occupational collaboration between Barley's (1986) radiologists and technicians or among Faraj and Xiao's (2006) trauma team members. And though Kellogg, Orlikowski, and Yates (2006) and Bechky (2003a) referred to the demographic differences among members of the different occupations they studied, they did not investigate the implications of these demographic differences for cross-occupational collaboration.

Scholars of demography and intergroup relations have found that it is not always the overall diversity of a social system that explains how different groups interact with one another but, rather, the extent to which the social structure is characterized by "cross-cutting" demographics (e.g., Blau and Schwartz, 1984; Lau and Murnighan, 1998). In social structures with cross-cutting demographics,

positional characteristics, such as occupation, and nominal characteristics, such as race, are uncorrelated so that people who share a high-status characteristic on one dimension do not also always share high-status characteristics on other dimensions (e.g., race, age, and immigration status).

Cross-cutting demographics promote three kinds of intergroup dynamics. First, members with traditionally devalued social identities are relatively equally distributed among members in higher-status and lower-status positions. This leads members to view traditionally devalued identities more positively and to use them to build relationships. For example, Ely (1994, 1995) demonstrated that in sex-integrated firms, the proportional representation of low-status group members (women) in senior positions can signal to low-status group members at lower levels that positions of power are attainable by members of their group. This greater integration at senior levels creates conditions for more positive identification experiences and more constructive relationships between junior and senior members of traditionally devalued groups.

Second, according to Blau and Schwartz (1984: 83–84), cross-cutting demographics put “individuals at the intersection of a web of group affiliations that exert diverse and often counteracting pressures, weakening the hold any one group has on its members, widening the options of individuals, and increasing their freedom.” Scholars have shown that individuals who identify with a social group adopt its norms and values and act according to the group’s prescriptions (Turner, 1987; Hogg and Terry, 2000). In settings with cross-cutting demographics, members are influenced not only by ties to one group (e.g., occupation), but also by ties to other groups with whom they identify (e.g., Haitians). This reduces the control that any single group has on members’ thoughts, actions, and loyalties.

Third, cross-cutting demographics facilitate intergroup liking and trust via the direct and indirect effects of homophilous cross-group interactions. Because group members tend to associate informally with colleagues who share salient demographic characteristics (e.g., McPherson, Smith-Lovin, and Cook, 2001), when many members from one group have some demographic similarity with members of the other group, there is a higher degree of intergroup contact that, under particular conditions such as sharing a superordinate goal and the support of authorities (e.g., Allport, 1954), can lead to liking and comfort. The direct effect of this is liking and attraction between members of the two groups who share demographic characteristics (e.g., Byrne, 1971; Tsui and O’Reilly, 1989; Reagans, 2005). The indirect effect is increased feelings of comfort and liking, even between members of the two groups who do not share at least one demographic characteristic, because of members’ enhanced knowledge about the other group, reduced anxiety about intergroup contact, and increased empathy and ability to take the perspective of the other group (e.g., Pettigrew and Tropp, 2006; Pettigrew et al., 2011).

We find that by promoting these three dynamics, cross-cutting demographics can loosen attachment to identity and status distinctions, readying the way for actors from different groups to interact with one another. Drawing on a wide array of social identities (e.g., immigrant, young person), rather than on one dominant identity such as occupation, can provide cross-occupational dyads with an expanded “cultural toolkit” (Swidler, 1986) of shared resources to guide their interactions. While cultural theorists demonstrate that people draw on the cultural tools afforded by their social identities to shape their actions (Swidler, 1986), symbolic interactionists remind us that our actions also

depend on the specific interaction partners with whom we deal. People take the point of view of the other person involved in the interaction and modify what they are doing to fit in more or less easily with what their interaction partner is likely to do (Goffman, 1959; Blumer, 1969; Van Maanen, 2010). Thus members of different occupations have access not only to the cultural toolkits provided by their occupational identities and the organizational toolkits provided by top managers, but also to what we call “dyadic toolkits” provided by the non-occupational social identities they share at the dyad level (e.g., shared race, age, immigration status, motherhood, etc.). By drawing on these shared social identities, cross-occupational dyads gain access to an alternative, non-occupational toolkit of expertise, shared meanings, status rules, and emotional scripts they can use to work successfully with one another across occupational differences.

METHODS

We conducted a 12-month ethnographic study of collaboration between nurses and patient-care technicians (PCTs) on two different units at Huron Hospital (all names are pseudonyms). Nurses and PCTs on both units faced similar challenges in collaboration due to differences in occupational status, meanings, and expertise and had similar organizational tools available to them.

The first author interviewed and observed nurses and PCTs for two- to three-and-a-half-hour sessions. This author dressed in scrubs and accompanied nurses and PCTs while they went about their work and also conducted “real-time” interviews (Barley and Kunda, 2001) during moments of privacy in supply rooms, medication rooms, the kitchenette, and break room. During the first month of observation, we noticed interesting dynamics occurring on the night shift, which led us to focus observations on this shift; cross-occupational collaboration is particularly valuable on the night shift because patients have no visitors to monitor them. The first author conducted 42 observations of nurses and PCTs working on two medical-surgical units (Units A and B) during the night shift. The observations were conducted across all days of the week and all times of the night. In addition, the first author conducted 42 background interviews with nurses and PCTs. These interviews averaged between 30 and 45 minutes and were conducted at various times during the observational session, typically when the nurse or PCT had a period of downtime.

The units were well matched on factors shown to affect cross-occupational collaboration (see Okhuysen and Bechky, 2009, for a review). Because they were part of the same hospital, they shared the same management and organizational structure, were subject to the same pressures and goals, and had the same procedures, protocols, and collaboration tools, as shown in table 1. The units also served the same patient populations—medical-surgical patients—and both units ran at full capacity. Unit A had fewer patient beds than Unit B (24 vs. 36 beds), but the units were staffed according to hospital-wide staffing guidelines so that patient-to-staff ratios were the same on each unit.

We used interviews to triangulate our observations with occupation members’ own interpretations of the cross-occupational interactions in which they had recently participated to reduce possible researcher bias in interpreting nurse–PCT interactions. Interviews that did not focus on members’ own interpretations of recent nurse–PCT interactions centered on four main themes: background and career histories and goals, including what collaboration had

Table 1. Descriptives of Unit A (24 Beds) and Unit B (36 Beds)

Characteristic	Units A and B
Unit type	Medical-surgical units
Patient mix	Medical and surgical patients
Staff-to-patient ratios	1 nurse per 6 patients and 1 PCT per 12 patients
Technology	Same call-light phone and pager technology systems
Procedures	Same protocols and procedures
Collaboration tools	Same rules and routines, boundary objects, and common spaces (e.g., nursing station, medication room, supply room, break room)
Reporting structure	Nurses and PCTs report to unit nurse manager; unit nurse managers not present during overnight shift; however, a rotating overnight manager covered both units
Hiring practices	Open positions posted on website; managers hire; most nurses and PCTs meet new coworkers only when they begin to work together
Unit manager characteristics	White, U.S.-born women in 50s, Avg. 4- to 5-year tenure
Utilization	Run at full capacity

been like when the member first joined the unit; the beliefs of each occupational group about what constitutes good patient care; how members decided who performed each task, particularly when one member of the nurse–PCT dyad was busy; and how their unit compared with other units they had “floated” on (worked on temporarily when another unit was short-staffed). The first author took extensive notes during observations and interviews, which were typed up within 24 hours.

Nurse and PCT pairings were made in the same way on both units each evening by the resource nurse—a shared, rotating position held by a different nurse each night on each unit. The assignment of nurses and PCTs was to patients, however, and not to specific nurse–PCT dyads, as every effort was made to ensure that nurses and PCTs were assigned to patients to whom they had been assigned on previous nights to facilitate continuity of care. Because patients stayed on the unit an average of 36 hours, in this assignment system, all nurses worked with all PCTs regularly; there were no consistent nurse–PCT dyads.

The first author observed 137 unique nurse–PCT dyads working together: 56 on Unit A and 81 on Unit B. We used a sampling spreadsheet to select for observation of an equal number of nurses and PCTs on each unit for an equal number of days of the week, weekdays vs. weekends, and times of the night, 11 P.M.–2 A.M., 2 A.M.–5 A.M., and 4 A.M.–7 A.M. We did not know ahead of time which nurses and PCTs would be working, except for the nurses and PCTs who had steady schedules. When the first author arrived, the resource nurse selected the nurse or PCT to be observed, typically by asking the closest nurse or PCT if she was willing to be “shadowed.” Nurses and PCTs at Huron were used to being followed around by trainees, and they were usually quite willing to be shadowed. There were only a handful of times when the first author did not shadow the randomly selected nurse or PCT, and this occurred when the nurse or PCT selected had already been observed recently. This sampling led us to observe 74 of the 137 dyads in depth—31 on Unit A and 43 on Unit B—by which we mean that we shadowed one or both parties of the dyad one on one while they were working together and collected enough data to reach saturation on the dyad’s typical social and work interactions. All staff on both units were female except for three male nurses on Unit A, and one on Unit B.

The demographic characteristics of the dyads sampled on each unit were representative of the demographic makeup of that unit.

Our data collection proceeded in three phases. In the first two months, we focused on understanding the PCT and nursing occupations and the nature of the cross-occupational collaboration of nurses and PCTs at Huron. Collaboration between nurses and PCTs is imperative for delivering high-quality patient care because many tasks require more than one person to complete. For example, bedridden patients need to be repositioned at least every two to four hours, a task that requires more than one person. In addition, the high workload on medical-surgical units and the unpredictability of patients' demands make it difficult for any one nurse or PCT to provide good care to all assigned patients independently. Because nurses or PCTs can easily get stuck in patients' rooms responding to unanticipated problems, they need to cover one another's assigned patients when this happens. In addition, PCTs have higher patient loads than nurses (1 PCT to 12 patients vs. 1 nurse to 6 patients), and when PCTs are busy, nurses are expected to pitch in and help with PCTs' tasks.

Next, we took a month to code our data for preliminary themes and patterns. We analyzed all instances of nurse–PCT collaboration. We saw clear differences in the collaboration practices on the two units studied, with successful cross-occupational collaboration occurring among many nurse–PCT dyads on Unit A and not on Unit B. We re-read in detail the literature on cross-occupational collaboration, which highlighted that the failed collaboration on Unit B was expected because of occupational differences in expertise, shared meanings, and status, while the successful collaboration on Unit A was unusual.

We used the second phase of data collection (five months) to understand how and when successful versus unsuccessful cross-occupational collaboration occurred on the two units. In the final phase of data collection (four months), we more closely followed the work and social interactions of nurse–PCT dyads on Unit A to understand why most dyads collaborated well. In this phase, we also used in-situ interview questions to test our emerging understanding of how successful cross-occupational collaboration was occurring.

When we determined that high levels of collaboration were occurring on Unit A but not Unit B, we contrasted the two cases to identify practices associated with successful cross-occupational collaboration. Our inductive analysis (Glaser and Strauss, 1967) consisted of multiple readings of field notes and interview notes, writing analytical memos, and tracking patterned activities and issues related to collaboration in ATLAS/ti, a qualitative data analysis program. To understand why many dyads on Unit A successfully collaborated while those on Unit B did not, we analyzed each nurse–PCT dyad's social and work interactions. Online Appendix A (<http://asq.sagepub.com/supplemental>) provides descriptions of the characteristics of the dyads we studied on both units, their occupational and social identities, and whether they made use of shared social identities in their work interactions.

CROSS-OCCUPATIONAL COLLABORATION

Our analysis showed that Unit A was characterized by cross-cutting demographics at the unit level that loosened attachment to occupational identity and status distinctions and created space for nurse–PCT dyads to connect around a

Table 2. Occupational Differences between Nurses and PCTs at Huron Hospital

	Nurses	PCTs
<i>Different occupational status</i>		
Occupational tasks	Administrative and clinical work	Dirty work (e.g., changing bedpans)
Occupational communication rules	Order giving and speaking up	Order taking and not speaking up
<i>Different occupational emotion rules</i>		
Occupational feeling rules for expressing negative emotions with other staff members	Expressing negative emotions with nurses and PCTs	Suppressing negative emotions with nurses
Occupational feeling rules for expressing positive emotions with other staff members	Expressing positive emotions only with other nurses	Expressing positive emotions only with other PCTs
<i>Different occupational meanings</i>		
Occupational beliefs and values	Best nurse: "OCD" [obsessive compulsive], conscientious, and accurate	Best PCT: "Angel," treats patients like family
Occupational demeanor	Assertive and efficient with patients	Empathetic and attentive with patients
<i>Different occupational expertise</i>		
Occupational knowledge bases	Abstract knowledge	Patient-specific knowledge
Occupational skills and information	Computer skills and information	Sensory skills and information

shared social identity. Even though most dyads on Unit A differed on at least one visible demographic characteristic, most identified at least one shared identity that provided them with a non-occupational toolkit at the dyad level that they used to overcome occupational differences and collaborate to provide patient care. In contrast, on Unit B, collaboration failed. What makes the difference in collaboration on the two units interesting is that they were so similar in terms of barriers previously shown to make cross-occupational collaboration difficult. On both units, nurses and PCTs needed to overcome occupational differences in status, emotional scripts, shared meanings, and expertise in order to successfully collaborate with one another, as shown in table 2.

Cross-occupational Differences in Status

We observed that because occupational members maintain their status, in part, through the tasks they do in everyday work and through the communication rules they use with one another (see Sauder, 2005, for a review), asking nurses to help with "PCT work" was problematic on both units. Nurses primarily performed higher-status cerebral work associated with patient management, while PCTs spent most of their shifts engaged in low-status, physically taxing work that put them in close contact with patients with contagious infections and diseases. But delivering responsive care sometimes required nurses to perform "PCT tasks," such as helping patients with toileting needs, changing linens, and bathing, feeding, and repositioning patients, which violated the nurses' jurisdiction. This was problematic because nurses had hived off hands-on care work to PCTs years earlier in response to pressures for cost-cutting (Weiss and Lonquist, 2000; Weinberg, 2003). This hiving off allowed nurses to focus on more abstract issues associated with patient management, such as conducting documentation activities and coordinating care activities among various hospital

workers. In part because of this more abstract work, the nursing occupation is considered more prestigious than the PCT occupation; in the U.S., for example, in 2012 the median annual nursing salary was \$65,470 compared with \$24,400 for PCTs (Bureau of Labor Statistics, 2014a, 2014b), and while the majority of nurses had four-year college degrees, the majority of PCTs had only a high school education and a six-week PCT training course. Some nurses in our study felt that doing PCT work was not a good use of their time given their more advanced skill sets and education.

Nurses and PCTs also had different occupational rules for communication that reflected and maintained status differences between groups. We observed nurses give direct commands to PCTs, speak more frequently when interacting with PCTs, and often sit down during “report”—a time each night when nurses updated PCTs on their shared patients. The PCTs we observed frequently took orders or gave orders only indirectly, for example, “51 is requesting his nurse” instead of “go to 51.” PCTs usually spoke less than nurses, stood up during report, and were more attentive to nurses than nurses were to them.

Cross-occupational Differences in Emotion Rules

Nurses and PCTs on both units also faced challenges due to differences in occupational feeling rules for expressing emotions with other staff. When nurses were upset with PCTs, we saw nurses confront PCTs directly and often publicly. We also observed nurses openly express negative emotions, including stress (“Tonight is crazy. It’s a full house!”) and frustration (“We’re short on staff ‘cause someone on [another unit] was sick so they took one of ours”), to both fellow nurses and PCTs. In contrast, when PCTs were upset with a nurse, we often observed them suppress these negative emotions and not confront the nurse. In addition, PCTs typically responded to nurses’ expressions of anxiety by appearing calm, for example, when told they would have an increased patient load due to short-staffing. We typically saw PCTs express negative emotions privately only to other PCTs. These differences in occupational feeling rules for expressing negative emotions between staff members often made it difficult for nurses and PCTs to relate to one another effectively, particularly when dealing with conflict or when mistakes were made.

Nurses and PCTs also differed in how they expressed positive emotions. We frequently observed nurses publicly express positive emotions, such as gratitude and pride, and share patient triumphs with other nurses but not with PCTs. For example, we often saw nurses go out of their way to find and personally thank other nurses who had done something to help them out without being asked during the shift, such as changing another nurse’s patient’s IV bag. But nurses did not typically demonstrate the same level of gratitude toward PCTs when PCTs helped out unasked. PCTs were less publicly expressive than nurses about positive emotions, and when they did express those emotions, such as feeling proud because of compliments patients had given them, they typically oriented them toward other PCTs rather than toward nurses. Perhaps because positive emotions such as gratitude and pride were most often directed toward members of one’s own occupational group, nurses and PCTs had no available occupational scripts for showing appreciation to or sharing their triumphs with one another.

Cross-occupational Differences in Meanings

Cross-occupational collaboration was also difficult because nurses and PCTs drew on occupation-specific beliefs, values, and demeanors that often led them to judge the actions of members of the other group as unnecessary or even inappropriate. Nurses and PCTs on both units had different occupational beliefs and values. Nurses reported that the best nurses were the ones who easily engaged in the critical thinking needed to analyze lab results and who demonstrated accuracy and precision when documenting, filling, and administering medications. Common sayings by nurses on both units included “Always double check your books”; “Cross your T’s and dot your I’s”; and “Being OCD [obsessive compulsive] is a good thing.” In contrast, PCTs valued providing responsive, hands-on care to patients by physically helping them, and they considered the best PCTs to be those who won the affection of patients and treated patients with dignity and respect, especially when patients were in embarrassing situations: “You have to do your work with heart, with love”; “Give the kind of care you’d want your mother to receive”; “It’s a heartfelt thing”; and “You know when it’s genuine and they know too—the patients can tell.” Differences in occupational values and beliefs often led nurses and PCTs at Huron each to perceive the other to be providing inappropriate care; nurses often referred to PCTs as “overly familiar” with patients, while PCTs often referred to nurses as “cold.”

Nurses and PCTs on both units also displayed different occupational demeanors in their interactions with patients. Nurses often acted assertively with patients and used humor to speed up or avoid potentially emotionally laden interactions for which nurses felt they did not have time given their many time-sensitive responsibilities (e.g., all patients had to have their medications administered within the same two-hour window). PCTs, in contrast, were reserved and quiet when interacting with nurses or in the presence of a physician, and they often gave patients physical support and affection by holding their hand, stroking their hair, or touching them gently on the hand or arm when talking to them. These differences in occupational demeanor sometimes made it difficult for nurses and PCTs to understand and appreciate each other’s actions. Nurses on both units sometimes described PCTs as getting “walked all over” by patients and were often impatient when PCTs were unavailable to help because they were spending “excessive” time in patients’ rooms; PCTs on both units often described nurses as being “too short” with patients.

Cross-occupational Differences in Expertise

Finally, nurses and PCTs at Huron faced challenges due to differences in occupational expertise. Nurses and PCTs on both units drew on occupation-specific bodies of knowledge, sources of information, and patient-care skills, and this often made it difficult for them to share their expertise with one another. We often saw nurses draw on the deep clinical knowledge of anatomy, medications, and medical tests and procedures they had gained from their formal education. In contrast, the PCTs we observed usually diagnosed patients’ problems using informal, concrete rules-of-thumb grounded in everyday practice, such as comparing a patient’s current state to the same patient’s state on prior shifts on which these PCTs had worked. Because nurses privileged

abstract, formal knowledge of diseases, medications, and lab results in guiding their decision making, they often considered PCTs' knowledge to be irrelevant. PCTs often noted that nurses did not take seriously their concrete knowledge of subtle changes in patients' states and patients' idiosyncratic needs.

Regarding occupational skills and information, we saw nurses use computer skills and computerized information to track patients' detailed medical histories, test results, current medications, and overall care plans. In contrast, we saw PCTs rely primarily on sensory skills and information gained from directly interacting with patients in the patients' rooms. Nurses and PCTs often appeared to be unaware of the unique skills and information possessed by the other occupational group. The routine of "report" was in place so that nurses would update PCTs at the beginning of the shift to ensure that they had the basic care information they needed to begin taking vital signs. But nurses frequently ignored this routine, and PCTs often told us that waiting for nurses to give them report at the beginning of the shift slowed them down.

Hospital Tools to Facilitate Cross-occupational Collaboration

The hospital provided several tools to facilitate collaboration between nurses and PCTs despite occupational differences. First, rules and routines were in place on both units that governed the order and timing at which certain patient care tasks needed to occur. Report was one of those routines. In addition, vital signs were expected to be taken on both units between 11 P.M. and 1 A.M., medications were expected to be given at midnight, vital signs of those on heart monitors were expected to be done at 4 A.M., and documentation of patient input and output was expected to be conducted by 6 A.M. These routines were designed so nurses and PCTs could understand when the other group's workload was heavy so they could offer assistance during these times in order to meet ongoing deadlines.

Second, boundary objects existed to facilitate collaboration between nurses and PCTs. Patient charts, templates assigning patients to nurses and PCTs, electronic patient records, call-light phone technology, pagers and the paging system, and whiteboards in patients' rooms were available on both units. Such boundary objects were designed so nurses and PCTs could be aware of when the other required help. The hospital also did not require nurses and PCTs to dress differently, which minimized status differences.

Finally, common spaces existed for collaboration. On both units, there was a reception desk containing the call-light phone monitor and one computer terminal followed by rows of computer terminals with enough seating for all nurses and PCTs. Both units also contained similar enclosed spaces for use by both nurses and PCTs, including a locker room and break room, small kitchenette, two medication rooms, and a main supply room. These common spaces allowed for informal information sharing between nurses and PCTs.

Cross-occupational Collaboration Outcomes

Despite similar barriers to and tools for cross-occupational collaboration on units A and B, collaboration largely succeeded on Unit A and failed on Unit B. These differences in cross-occupational collaboration had a real impact on patient care. A vignette is helpful in describing what successful versus failed

Table 3. Patient Outcomes Related to Nurse–PCT Collaboration on Unit A and Unit B

	Unit A	Unit B
<i>Nurses helping with "PCT tasks" when PCTs were busy</i>		
Number of instances in which a patient needed help with a "PCT task," but PCTs were busy so nurses helped	84	15
Total number of instances in which a patient needed help with a "PCT task," but PCTs were busy	90	153
Percentage of instances in which nurses helped	93%	10%
<i>Promptly answering patients' bedside calls for help</i>		
Number of promptly answered patient calls to the nursing station	119	85
Total number of patient calls to nursing station	127	190
Percentage of promptly answered patient calls	93%	45%
<i>Promptly attending to telemetry (heart monitor) alarms</i>		
Number of observational sessions when telemetry alarms were promptly attended to	19	5
Total number of observational sessions	21	21
Percentage of sessions when telemetry alarms were promptly attended to	90%	24%
<i>Patients' comments on responsiveness of their care</i>		
Number of observational sessions in which patients did not complain about responsiveness of care	18	8
Total number of observational sessions	21	21
Percentage of sessions in which patients did not complain about responsiveness of care	86%	38%

collaboration looked like in practice. One night on Unit A, Mr. Smith, a patient, lost control of his bladder and saturated his sheets with urine. Because Huron required visitors to leave each day at 8 P.M., no family member or friend was there to help him. When Jessica, the assigned nurse, came into his room a few minutes later to assess his wounds, she began right away to clean Mr. Smith. When Jessica realized that she could not do it on her own, she asked Anna, the PCT, for help. Anna said yes and came in as soon as she was done assisting another patient. Mr. Smith was cleaned within 10 minutes by Jessica and Anna.

Contrast this with a similar situation on Unit B with a different patient, Mr. Johnson. He similarly lost control of his bladder. Jill, the nurse assigned to Mr. Johnson, came into his room a few minutes later to deliver medications. She cursed under her breath and said defiantly, "I am not cleaning this up. Someone will get to it later." Cara, the PCT assigned to Mr. Johnson, came in soon after and realized that helping Mr. Johnson was a two-person job. She asked Jill for help. Jill said yes but then ignored her. An hour later, another nurse told Jill that the patient was calling again and requesting to be changed. Cara was busy just then, and Jill refused to start without Cara. Mr. Johnson ended up lying in his own urine for an hour and a half before he was finally cleaned by Jill and Cara.

Incidents such as these occurred regularly on the respective units. On Unit A, there were more instances in which nurses helped with PCT tasks when PCTs were busy, fewer ignored patient calls, fewer ignored heart monitor alarms, and fewer patient complaints than on Unit B, as shown in table 3. The outcomes in table 3 were selected because they directly or indirectly resulted from the quality of nurse–PCT collaboration. Totals were calculated using data collected from all 42 observational sessions. Responding promptly to a patient's call is defined as a nurse or PCT answering the nursing station call-light phone and speaking to the calling patient to find out what he or she needs

within the first few minutes of it ringing vs. ignoring the call and letting it ring for extended periods of time, until a PCT (or nurse) is free to answer it. Total patient calls include some patients who called multiple times when their calls were ignored. Promptly attending to telemetry (heart monitor) alarms is defined as a nurse or PCT responding to the alarm within the first few minutes. On Unit B, there were many sessions in which telemetry alarms sounded for nearly the entire observational session.

Cross-cutting Demographics in a Unit's Social Structure

Our analysis suggests that the high degree of cross-cutting demographics within the social structure of Unit A, but not Unit B, shaped the difference in cross-occupational collaboration outcomes. On the Unit A night shift, nurses and PCTs differed along occupational lines but were mixed in terms of the immediately visible identities of race, age, and immigration status, which was visible because of accented speech. On Unit B, as well as on most other hospital units at Huron and other shift times on Unit A, the demographic composition of the nursing and PCT groups was consolidated in terms of race, age, and immigration status, meaning that occupational differences between nurses and PCTs coincided with other demographic differences. As table 4 illustrates, most nurses on Unit B were white, mid-20-year-olds who grew up in the U.S., while most PCTs on Unit B were minorities, older (in their 40s to 50s), and non-U.S.-born.

It was not simply occupational group membership aligning (or not) with demographic characteristics that shaped differences in the intergroup dynamics on the two units; it was also, more importantly, the extent to which demographic characteristics were associated with status differences that loosened attachment to the occupational identity and status order on Unit A and reinforced it on Unit B. On Unit A, the higher-status nursing group had many members with traditionally devalued social identities in this context—non-white, older, and non-U.S.-born—while the lower-status PCT group had many members with traditionally valued social identities in this context—white, younger, and U.S.-born.¹ The mismatch in status between occupational identities and

Table 4. Demographic Composition of Units A and B Night Shift Staff

	Unit A			Unit B		
	Overall	Nurses	PCTs	Overall	Nurses	PCTs
Caucasian	44%	53%	25%	69%	96%	0%
Non-Caucasian (Hispanic, African-American/black, Asian)	56%	47%	75%	31%	4%	100%
Younger (20s or 30s)	56%	59%	50%	74%	92%	30%
Older (40s and over)	44%	41%	50%	26%	8%	70%
U.S.-born	52%	53%	50%	71%	96%	10%
Non-U.S.-born	48%	47%	50%	29%	4%	90%
Total number of staff	25	17	8	35	25	10

¹ In this context, members considered being younger (20s and 30s) more valuable than being older (over 40), particularly on medical-surgical units like Units A and B where computer literacy and speed, quick reaction time, and physical fitness and stamina—all traits associated with the young—were prized among nurses and PCTs.

other readily apparent social identities loosened attachment to the occupational identity and status order on Unit A.² On Unit B, in contrast, most members who had higher-status occupational characteristics also had higher-status demographic characteristics—nurses were nearly all in their 20s and 30s, white, and U.S.-born, while PCTs were nearly all older, non-white, and non-U.S.-born—which reinforced the occupational identity and status order.

The cross-cutting demographics of Unit A promoted three kinds of inter-group dynamics between nurses and PCTs that created space for nurse–PCT dyads to draw on a shared, non-occupational social identity to guide their interactions with one another: (1) the valuing of traditionally devalued identities and the building of relationships around them because of the presence of members in higher-status positions with traditionally devalued identities (e.g., black nurses), (2) low occupational in-group pressure resulting from a high degree of intersecting group affiliations that exerted diverse and often counteracting identity pressures on nurses and PCTs, and (3) feelings of comfort and liking even between nurses and PCTs who did not share demographic characteristics resulting from a high degree of homophilous cross-occupational contact.

Valuing of traditionally devalued identities. Ely (1994, 1995) has shown that when traditionally devalued social identities are relatively equally distributed among the higher- and lower-status groups, they are often viewed positively. On Unit A, where the higher-status nursing group had many members with traditionally devalued social identities, members fondly referred to their shift as the “United Nations,” and nearly all noted that they viewed the diversity in age, race, and immigration status in a positive light. For example, a young, white, U.S.-born Unit A nurse related:

I like the diversity. We have older nurses and people from different nationalities and I like it better. When I float to other floors, it’s all white women in their 20s and 30s. It’s weird. We get patients here from all different countries so it helps that so many of our nurses and PCTs can speak another language.

On Unit A, the positive view of traditionally devalued social identities allowed nurses and PCTs to draw on these and other shared identities without fear of status loss. For example, a nurse on Unit A explained how she tried to overcome her traditionally devalued social identities when floating on other units but did not need to do so on Unit A:

When I float, I will sometimes name drop that I went to [a good college near the hospital that many nurses attended] so they [the nurses] don’t think I’m off the boat [a recent immigrant] ‘cause I’m black and have an accent. Here, I don’t need to do stuff like that, since like half of us [nurses] are black and have an accent.

² The loosening attachment to the occupational identity and status order on Unit A did not lead to contestation over the general prestige and status ranking of the nursing versus PCT occupation on the unit. Members do not contest and protect the status order unless they believe that lower-status members have the opportunity to move into the higher-status group (e.g., Bendersky and Hays, 2012; George, Chattopadhyay, and Zhang, 2012). Here, PCTs had no opportunity to move into the nursing ranks without leaving Huron and going back to school for four years to train as nurses.

In contrast, on Unit B, the immediately visible association between occupational position and race, age, and immigration status activated the use of common negative stereotypes about traditionally devalued social identities. We often heard Unit B nurses use common stereotypes about non-whites, older people, and members of certain immigrant groups to describe PCTs (e.g., "slow," "lazy," "incompetent," and "can't be trusted"), even though we observed the PCTs on Unit B to be just as industrious as those on Unit A. For example, a young, white, U.S.-born nurse on Unit B related, "You can't count on them [PCTs]. Most are lazy and try to do the bare minimum so you really can't trust them . . . they'll take forever to do something that you ask." And, in contrast to the nurses on Unit A who valued staff who could speak another language, the Unit B nurses had little patience for PCTs' accented speech. One noted, "Language is an issue here since some [PCTs] aren't fully versed in English and don't feel comfortable. That always disturbs me because I think if you get to a certain position and you can't speak English . . . I just don't get it." Despite such seemingly racist comments, our data suggest there was no difference in racial attitudes among nurses prior to joining their respective units. We address this issue in Online Appendix B.

Occupational in-group pressure. Cross-cutting demographics on Unit A also put nurses and PCTs at the intersection of many different group affiliations that exerted diverse and counteracting pressures, increasing their freedom by weakening the power any one particular group affiliation had over their thoughts, actions, and loyalties. For example, nurses and PCTs on Unit A were less beholden to the occupational dress norms typical of most other units and other shift times on Unit A. While nurses and PCTs on Unit B dressed in a way that distinguished them from one another, with most nurses wearing plain blue or subdued monochromatic scrubs and most PCTs wearing bright, colorful, matching patterned and cartooned scrubs, on Unit A they did not. On Unit A, nurses and PCTs wore a mixture of dress styles, and individual nurses and PCTs often mixed up their dress styles from night to night. In addition, on Unit B, nurses and PCTs sat in separate locations in the nursing station, with nurses forming a circle with their workstations in the center of the nursing station while PCTs sat along the periphery. On Unit A, in contrast, nurses and PCTs sat interspersed in the nursing station.

The conversational topics of the Unit A nursing group were also highly accessible to people with diverse age, racial, national, and class backgrounds; Unit A nurses talked about the weather, work schedules, cleaning, vacations, and hospital or unit-related events. PCTs were included in these discussions as respected members of the team, and gossip about other staff was rare. On Unit A, the low occupational in-group pressure also allowed nurses and PCTs to interact with one another without sanction in ways that conformed to the norms of shared social identities, such as immigrant or mother, rather than just to the norms of their occupational identities. As one first-generation Haitian nurse in her 30s explained:

Different shifts have different dynamics. It's nice here that I have people like [PCT5A] and [PCT10A] here [both of Haitian descent]. . . . And it's no big deal if I want to sit

with [PCT5A] and talk about the earthquake [that devastated Haiti] or anyone [PCT or nurse] for that matter—no one's going to blink an eye.

On Unit B, socializing was highly segregated by occupational group. Here the nurses primarily talked about topics that aligned with their age, racial, national, and class backgrounds as young, white, Northeastern middle-class women. Their conversations revolved around dating, marriage proposals, wedding planning, pregnancy and getting pregnant, baby showers, vacation plans to places like Martha's Vineyard and Cape Cod, and music, movies, and television shows featuring primarily all-white, American artists and casts. PCTs on Unit B socialized only with other PCTs.

In addition, we noted in our field notes several situations on Unit B in which nurses or PCTs attempted to act outside of the bounds of occupational norms and were reproached by their occupational group members. For example, one evening, Nurse23B on Unit B fielded a few calls for a busy PCT and was made fun of by the other nurses for acting like a PCT: "Nurse23B hangs up the call light phone and Nurse14B calls out loudly, 'So you're the new secretary now, huh?'" She and the other nurses nearby laugh and Nurse23B looks embarrassed and makes a joke of it. Nurse23B does not pick up any more calls that night."

During the course of the study, only one nurse moved between units. Nurse16, who was young, white, and U.S.-born and had recently graduated from a local nursing school near the hospital, worked on Unit A for a few months before switching to Unit B. On Unit A, she collaborated well with most of the PCTs she worked with. We observed her make the transition from Unit A to Unit B. During her first week on Unit B, she wore colorful and festive scrub outfits typical of those worn by both nurses and PCTs on Unit A but only by PCTs on Unit B. During this week, we also observed her attempt to find commonalities with the PCTs she worked with, talking with one of the younger PCTs about a popular musical group. We saw her openly praise and thank one of the PCTs in front of the other nurses. Unfortunately for Nurse16, her actions were condemned by the other nurses on Unit B. We saw the other nurses on Unit B gossip about her "inappropriate" behavior, and we saw them avoid helping her in several situations even though they went out of their way to help other nurses. When Nurse16 had to deal with a patient with an unexplained high heart rate at the same time that one of her other patients was bleeding, none of the Unit B nurses assisted her, even though this was their common practice with other nurses. During this first week, she sat alone on the periphery of the nursing station, and the other nurses did not include her in social conversations.

Over the course of several shifts on Unit B, we saw Nurse16 distance herself socially from the PCTs. She also started conforming to the norms of her Unit B occupational group and began exclusively wearing plain blue scrubs like the other nurses. When we left the field, she was demonstrating occupationally prescribed behavior and had gained acceptance from her fellow nurses on Unit B.

Feelings of comfort and liking between groups. Finally, on Unit A, many nurses and PCTs shared at least one demographic attribute with members in the other occupational group, leading to higher levels of homophilous

interaction and liking across groups. For example, 80 percent of observed nurse–PCT dyads on Unit A shared at least one visible social identity in terms of race (white, black/African-American, Hispanic, or Asian), age (within 10 years in age), or immigration status (U.S.-born or non-U.S.-born), compared with only 19 percent on Unit B. And more than half of the observed dyads on Unit A (52 percent) shared at least two visible identities, while none of the observed nurse–PCT dyads on Unit B shared two or more visible social identities.

Because nurses and PCTs on both units had a superordinate goal of providing patient care, and hospital authorities supported collaborative nurse–PCT relations, this high degree of homophilous intergroup contact on Unit A had both a direct, interpersonal effect and an indirect, intergroup effect on the dynamics of Unit A. The direct, interpersonal effect was that, for members of the nursing and PCT groups who shared at least one demographic characteristic, positive affect and liking stemmed from having a meaningful social identity in common. For example, Nurse7A and PCT12A were both middle-aged, Hispanic immigrants who frequently communicated in Spanish with one another and expressed interpersonal liking:

Nurse7A steps out into the hallway and PCT12A comes over. . . . Nurse7A says, “His vitals are done, okay? 62 is done, 64, 66, 68 also done, okay?” PCT12A replies, “Okay.” They then start speaking in Spanish, and Nurse7A is beaming as she puts her arm around PCT12A and hugs her.

The indirect effect was enhancing nurses’ and PCTs’ knowledge about the other group, reducing anxiety about intergroup contact, and increasing empathy and perspective taking across groups. This, in turn, led to increased feelings of comfort and liking even among members of the two groups who did not share any demographic characteristics. For example, many nurses on Unit A were empathetic to the working conditions of the PCTs with whom they worked, which led to good relationships even when nurses and PCTs did not share a visible demographic attribute. One young, white, U.S.-born nurse related:

PCTs, they have a heavy, heavy job. They need our help, just like we need it from them. . . . It’s definitely a give and take as they have a hard enough job. . . . I’ve gotten to know some [PCTs] pretty well and honestly, their job is more exhausting and they are paid almost nothing. Some work two jobs.

In contrast, on Unit B, few nurses and PCTs shared visible social identity characteristics. The consolidation of social identity characteristics with occupation led to intergroup dislike, discomfort, and anxiety, and it reduced empathy and perspective taking during cross-occupational social and work interactions.³ Many PCTs on Unit B told us they felt uncomfortable approaching the nursing group in the nursing station, even when they had important questions, and

³ Gender was not used by nurse–PCT dyads as a shared social identity to draw on in these two feminized occupations. Because nearly all the nurses and PCTs at Huron were women, gender was not a salient social identity relative to other social identities in which there was variation, such as race, age, and immigration status. Gender alone may also have been too broad an identity to provide a platform as a meaningful commonality. For example, some white women may want to connect on gender, but some women of color resist because they feel their experiences are distinctive (Cole, 1986; hooks, 1984). But many of the shared social identities drawn upon on Unit A had feminized elements, such as motherhood.

multiple PCTs commented on the poor interpersonal relations between nurses and PCTs. One stated, "No nurse is going to be your friend here. . . . They don't care about me or love me." Another stated, "PCTs and nurses are not so close. . . . we only have love for our own." In addition, nurses on Unit B, unlike Unit A, rarely greeted PCTs when seeing them for the first time during their shift. As one PCT said, "[Nurses] won't even say hi to you. They pretend you're not there or they come up to you and just give you an order or tell you something, being all business you know, without asking how you're doing."

Use of Dyadic Toolkits

On Unit A, the use of non-occupational social identities in interactions broadened the set of status rules, emotional scripts, meanings, and expertise available to nurse–PCT dyads and allowed them to work with one another in non-traditional ways across occupational boundaries. In contrast, the consolidated demographics of Unit B inhibited nurses' and PCTs' use of non-occupational social identities in interactions. Even the nurses and PCTs who shared social identities did not draw on them to help them collaborate. In addition, the many salient differences in social identities between nurses and PCTs on Unit B exacerbated collaboration challenges that stemmed from occupational differences, and collaboration on Unit B failed.

Collaboration across different occupational status. The cross-cutting demographics on Unit A allowed nurses and PCTs to draw on shared social identities and successfully negotiate tasks and communicate across occupational differences in status. For example, Nurse17A and PCT6A differed in occupation and race—Nurse17A identified as white while PCT6A identified as African-American—but were both older and U.S.-born. In their social interactions, they often drew on their common status position as older people to act according to prescriptions of older, hard workers even though doing so ran counter to occupational status rules. Nurse17A told PCT6A, "Once [a manager Nurse17A had in the past] wrote me up for being too conscientious, like it was a negative thing. . . . I think there is just a different work ethic with this new generation and I'm old school." And PCT6A said to us:

I like a nurse who works as hard as we [PCTs] do and pulls their weight equally around here. If they have the same idea as me and want to come here and work hard and get the job done, I like that. That's just how I was raised—my generation is like that you know. [Nurse17A] is just like me in that way.

Nurse17A often emptied bedpans for patients when working with PCT6A even though this was considered to be PCT work, but the occupational order was by no means overturned. Our field notes show that when they were both free, PCT6A did the PCT work, but when PCT6A was busy, Nurse17A often helped by performing this lower-status work.

In addition to drawing on shared social identities to perform tasks across jurisdictional boundaries, nurses and PCTs used the broadened dyadic toolkit provided by these shared social identities to communicate in non-traditional ways. For example, Nurse44A and PCT10A differed in occupation, but they shared a common identity as young, French-Creole-speaking women from families of

Haitian immigrants. In social interactions, they frequently spoke in French-Creole and talked about their relatives still in Haiti. They also followed egalitarian communication rules when socializing. For example, PCT10A initiated joking and socializing with Nurse44A, and they frequently touched each other on the shoulders or arms when they spoke, as is customary in Haiti. When they communicated with one another during work interactions, they drew on the social identity of two equal-in-status Haitians rather than drawing on the social identities of a higher-status nurse and a lower-status PCT. Our field notes show, for example, that contrary to occupational communication rules, one evening when PCT10A was with a patient in a “contaminated” room, she initiated an order to Nurse44A, because if PCT10A had left the room, she would have needed to put on new gear to reenter the room:

PCT10A, who is dressed in full contact precaution attire [a disposable one-time-use yellow gown, gloves, and facemask], sticks her head out of a patient room. She calls out to Nurse44A, who is a little bit further down the hallway, “[Nurse44A], can you get me some more towels?” Nurse44A replies, “Sure,” and runs to grab PCT10A some towels and brings them to her.

In contrast, in Unit B’s consolidated social structure, nurse–PCT dyads did not draw on shared social identities in interactions. For example, PCT3B and Nurse1B differed in occupation, race, and immigration status, but both were older. Nurse1B did not help PCT3B with her work because she felt constrained by occupational in-group pressure. She said, “I’m from a generation that was trained in the old school way of doing everything for the patient—toileting, bathing, feeding—stuff the PCTs do now. Sometimes I miss doing that stuff because you get more time at the bedside, but it doesn’t go over well with the girls here.” The in-group pressure on Unit B was so strong that, on occasions when Unit B nurses did perform PCT tasks such as toileting, many demonstrated they knew this was counter-normative behavior by gagging, swatting the air in front of their faces, and plugging their noses.

The consolidated demographics on Unit B also meant that most nurses and PCTs at the dyad level did not share any visible social identities. In these dyads, status differences in race, age, and immigration status frequently exacerbated occupational status differences. For example, Nurse7B and PCT4B differed not only in occupation but also in terms of race, age, and immigration status—Nurse7B identified as white and was young and U.S.-born, while PCT4B identified as black and was an older Jamaican immigrant. One evening, PCT4B informed Nurse7B about a bleeding patient. Nurse7B listened to PCT4B but did not go check on the patient. Later that evening, PCT4B attempted to handle this issue on her own, even though it was a matter that required assessment by a nurse. She said that she did not feel comfortable speaking up to challenge Nurse7B’s judgment. As we recorded in field notes:

“I told [Nurse7B], and she said it’s not very much [blood], but she didn’t even come look. But look—it’s a lot of blood!” She pulls up his Johnny [gown] and there is a large amount of dried blood on his leg as well as a trickle of bright red blood coming from his stomach. PCT4B takes a wash cloth and dries the blood up and finds the

source on his stomach saying, "It's still bleeding—fresh blood. I'm gonna need to tape on some gauze."

Collaboration across different occupational emotion rules. Drawing on shared social identities helped nurses and PCTs on Unit A relate effectively despite differences in prescribed occupational emotional rules and scripts, such as by helping them to disagree constructively with one another. For example, Nurse14A and PCT12A differed in occupation and age—Nurse14A was young, while PCT12A was older—but they shared the identity of black immigrants, though from different countries. They frequently chatted about planning long-awaited vacations home to visit their families and expressed frustration over their limited number of vacation days and rules about how much vacation they could take at once. They also challenged one another's judgment about strategies for asking their manager for large chunks of time off and contested one another's ideas in a playful manner by jokingly hitting one another when they disagreed. Our field notes show that when Nurse14A and PCT12A worked together, they drew on this broadened dyadic toolkit of feeling rules for expressing disagreement:

Nurse14A stops us in the hallway, touches PCT12A on the shoulder and says, "You know, we picked up two people in 45." PCT12A seems confused and says, "What time? 11? It's not on the paper." She checks her notes and playfully pushes Nurse14A away, saying, "I don't have them; they're not on my paper!" Nurse14A smiles and pushes PCT12A back saying, "No I put them on at 11. You have 45. It's on the schedule." PCT12A playfully flicks her wrist and lightly hits Nurse14A on the arm and says, "No you didn't." Nurse14A smiles and laughs, "Yes, it's on the schedule."

Nurses and PCTs on Unit A also drew on shared social identities to forgive one another for mistakes. For example, Nurse45A and PCT6A differed in occupation and race—Nurse45A identified as white, while PCT6A identified as African-American—but they were both older and U.S.-born. They often drew on a broadened set of emotional scripts related to their shared identity as grandmothers who were thrifty shoppers to express emotions such as empathy toward one another in social interactions. For example, they frequently sat next to one another in the nursing station clipping coupons during downtime while listening to each other's problems, particularly related to their grandchildren and to feeling extremely busy with home responsibilities. During these sessions, they provided one another with emotional support and advice. They drew on this broadened set of emotional scripts in work interactions with one another. For example, even though nurses were often quick to express negative emotions toward PCTs when PCTs made mistakes, we observed Nurse45A being empathetic and forgiving with PCT6A one evening when PCT6A forgot to take a needed sample:

Nurse45A says to PCT6A, "Remember, we need to guaiac him too [take a sample]." PCT6A sighs and says, "Sorry, next time I will. There was just so much." Nurse45A laughs and PCT6A laughs as well. Nurse45A says, "Don't worry about it! Oh, and I did signs on 40 at 10 [took vital signs at 10 P.M.], so don't worry about that." PCT6A smiles and replies, "Thanks!"

In contrast, the consolidated demographics on Unit B did not facilitate nurses and PCTs relating effectively with one another. Perhaps because of the strict enforcement of occupational norms on Unit B, even when Unit B nurse–PCT dyads did share a common identity, such as mothers or older workers, we did not observe them drawing on this shared social identity in social or work interactions. For example, PCT2B and Nurse4B differed in occupation, race, immigration status, and age, but PCT2B was a mother of three, and Nurse4B was visibly pregnant with her first child. One evening we observed PCT2B attempt to relate with Nurse4B by talking about her own experience with pregnancy. Nurse4B rejected PCT2B’s attempts with short, one-word answers:

PCT2B says to Nurse4B, who is seven months pregnant with her first child: “My first used to kick me all the time at work. Does yours do that?” Nurse4B replies, “What? No.” Nurse4B quickly changes the subject and asks PCT2B whether a patient’s blood sugar has been taken yet.

Though Nurse4B did not talk with PCT2B about her pregnancy, we observed her talking at length to other nurses about it.

In addition to promoting negative dynamics between nurses and PCTs who shared social identities, the consolidated demographics on Unit B also meant that most nurse–PCT dyads shared no obvious social identities. In these dyads, the differences in emotion rules stemming from different non-occupational social identities exacerbated differences stemming from occupational identities. For example, Nurse37B and PCT18B differed in race, age, and immigration status. In addition to drawing on different occupational feeling rules, Nurse37B and PCT18B also drew on different feeling rules related to their non-occupational social identities. One evening PCT18B shared with us that, a few nights earlier, Nurse37B had left her midway through cleaning a patient right before the shift change so that PCT18B had to stay late to finish on her own. PCT18B explained that she hadn’t expressed her annoyance to Nurse37B, in part, because she was concerned about being labeled as having an “attitude” (a term associated with negative racial stereotypes for blacks) and being retaliated against: “You know me, I cooperate. I act like nothing happened. I never let her know. I didn’t tell her because that would lead to more issues. She’d say I have an ‘attitude’ if I tried fighting back.”

Collaboration across different occupational meanings. Many nurses and PCTs on Unit A were able to collaborate successfully with one another by drawing on a broader cultural toolkit of shared meanings afforded by a common social identity at the dyad level. Drawing on these shared social identities helped nurses and PCTs respect one another’s beliefs and values. For example, Nurse9A and PCT21A were similar in age but differed in occupation, race, and immigration status—Nurse9A was an Indian immigrant, while PCT21A was U.S.-born and white. But they had found the nonvisible identity of mother to help frame their interactions with one another. They frequently talked about their children, and they often shared parenting philosophies, such as the importance of doing reading and writing exercises with their children at home in addition to sending them to preschool. Their demonstrated appreciation of one another’s beliefs and values about parenting sometimes spilled over into their

work interactions, where we saw them indulge and appreciate one another's occupation-related beliefs and values. For example, one evening, PCT21A explained her belief about speaking kindly to a comatose patient to Nurse9A, and Nurse9A, though initially not understanding, proceeded to go along with PCT21A, changing her interaction with the patient to suit PCT21A's preferred style:

Nurse9A and PCT21A head over to their patient's room. PCT21A brightly greets the patient and says, "Hi Christopher!" Nurse9A looks at PCT21A quizzically and says, "He doesn't respond. He's completely dependent—a veggie." PCT21A replies confidently, "I know but I like to say hi anyway." PCT21A continues [to the patient], "We're gonna reposition you now." Nurse9A begins to copy PCT21A's interaction style and says softly and sincerely, "Hi Christopher! I'll clean your mouth, ok?" PCT21A and Nurse9A continue to talk to the patient as if he were sentient while they clean and change him.

Drawing on shared social identities also helped nurses and PCTs on Unit A adjust their demeanor to suit one another's preferred patient interaction style. For example, Nurse72A and PCT26A were members of different occupations, but they were both young, white locals. In their social interactions with one another, they often shared stories of their weekend escapades and drew on the common demeanor of young partiers as they assertively joked with one another. When interacting with Nurse72A, PCT26A often acted counter to the occupationally prescribed reserved and quiet PCT demeanor:

Nurse72A asks PCT26A, "How was your weekend? Did you end up going to that party?" PCT26A replies, "My weekend was good. I ended up staying out last night way later than I wanted to. . . ." Nurse72A laughs and then holds up in the air a plastic bag containing three pairs of underwear that a discharged patient left behind in her room. She gestures toward PCT26A and jokes, "Are those yours? Do you want some new underwear?" PCT26A jokes back, "No, you should take them since you're probably not wearing any." They both laugh.

When they worked together, they drew on this broadened set of demeanors to act assertively toward patients. For example, while the PCT occupational demeanor prescribed being reserved with patients when in front of nurses, we saw PCT26A openly joke with patients in Nurse72A's presence:

We head into the room of a new admission to take vital signs. Nurse72A is in the room introducing herself to the patient saying, "My name is [Nurse72A] and I'll be your nurse . . . [she sees PCT26A come in] and this is [PCT26A]. She's working with me." PCT26A greets the patient warmly saying, "How are you tonight?" The patient replies, "I'm great, thanks." PCT26A jokes back saying, "Then why are you here?" Nurse72A laughs and the patient replies, "Well I guess I could be better." Everyone laughs.

The situation on Unit B differed greatly. For example, PCT18B and Nurse23B differed in occupation, race, and immigration status, but both were older. While we observed many nurse–PCT dyads on Unit A draw on a shared social identity like age to judge the actions of members of the other group as appropriate even though doing so ran counter to traditional occupational meanings, we did

not observe PCT18B and Nurse23B do this. Being older was a devalued identity in this context and, on Unit B, the immediately visible association between occupational position and race, age, and immigration status activated the use of common negative stereotypes about traditionally devalued social identities. Perhaps for this reason, Nurse23B did not connect with PCT18B over this shared identity:

Nurse23B stands at the outside of the nursing station and stretches her back. PCT18B notices her and says, "My back hurts too. Guess we're just getting old!" Nurse23B appears caught off guard, and as the other nurses turn to look at her, Nurse23B replies curtly, "My back is fine. You're only as old as you feel."

On Unit B, occupational meaning differences were also intensified by differences in cultural beliefs and values and identity-appropriate demeanors that stemmed from differences in visible social identities. For example, Nurse8B and PCT4B differed not only in occupation but also in race, age, and immigration status. Nurse8B had grown up in the Northeast where the ethic of a fast-paced life oriented around efficiency was the norm, while PCT4B had spent more of her life in Jamaica, which she described as having a slower pace of life and as valuing relationships. PCT4B often interpreted Nurse8B's quick pace as typical of "work-obsessed" Americans, and said she refused to let herself be rushed when Nurse8B was working rapidly to accomplish certain tasks: "People here [in the U.S.] don't know how to relax. Where I come from, it's not like that. You know I work hard. But there's no need to act like that" (she points to Nurse8B who just ran by us, sighing and calling out behind her to another nurse). Nurse8B likewise had difficulty appreciating PCT4B's "Jamaican" demeanor at work: "Nurse8B says to me, 'I'm gonna page PCT4B. It will probably take her like 10 minutes to get in there' (she rolls her eyes as she speaks). She goes over to the call-light computer and sends her a text page that reads, 'New admit in 9. Can you do [vital] signs?'"

Collaboration across different occupational expertise. Finally, many of the nurse–PCT dyads on Unit A drew on broader sets of expertise afforded by a shared social identity, despite the fact that nurses relied primarily on computerized information while PCTs relied primarily on sensory information to do their work. For example, Nurse17A and PCT2A differed in race and age—Nurse17A identified as white and was older, while PCT2A identified as black and was younger. But both were born in the U.S., and they shared social identities as locals who were raised in the surrounding area and were avid fans of their city's sports teams. In their social interactions with one another, they often discussed highlights from recent games and shared player statistics and their own feel for their team's chances of beating rival teams and advancing to the playoffs. During these exchanges, they often went to the computer for game updates. PCT2A acted outside of the bounds of PCT occupational norms by using the computer, but the cross-cutting demographics on Unit A weakened occupational in-group pressure, and they appeared unconcerned about being sanctioned for their behavior; they were quite vocal in front of other nurses and PCTs about going to the computer to check scores.

When they engaged in work interactions, they drew on the same routines they used for sharing information about player statistics and how their teams were performing. For example, one evening, Nurse17A asked for PCT2A's sensory information about how a patient had been breathing the evening before, and Nurse17A shared with PCT2A some computerized nursing information and explained the medical reasoning around a care decision:

Nurse17A and PCT2A roll the patient so Nurse17A can assess his skin. . . . The patient begins to wheeze violently. Nurse17A looks concerned and asks PCT2A, "Did he get like this yesterday?" PCT2A, "Yes, he was just like this." Nurse17A tries to soothe the patient and listens again to his throat with the stethoscope. Nurse17A then says to PCT2A, "I think I'm going to get a humidifier for him, to help loosen the secretions in his throat." PCT2A replies, "I think that's a good idea." Nurse17A adds, "And I checked the computer earlier, and he is at risk for a seizure, so he should have a green pad."

Nurses and PCTs on Unit A also drew on common social identities to share expertise despite differences in occupational knowledge bases. For example, Nurse24A and PCT12A differed in race, age, and immigration status, but we saw them use their common, nonvisible identity of working mother to help frame their interactions. Nurse24A was a new mother, and PCT12A was the mother of two older boys. In their social interactions with one another, Nurse24A often asked for advice about taking care of a newborn, and PCT12A often provided her with advice about being a working mother. In these interactions, they discussed both abstract expertise (e.g., different theories of mothering) and idiosyncratic, child-specific expertise, such as how to help this particular baby sleep.

Because nurses privilege abstract, formal knowledge of diseases, medications, and lab results in guiding their decision making, they often consider PCTs' knowledge to be irrelevant. But Nurse24A and PCT12A's expertise-sharing routines around being working mothers carried over into work interactions in which Nurse24A expressed interest in PCT12A's occupational knowledge and expertise. For example, one evening, Nurse24A asked for PCT12A's patient-specific expertise around a patient PCT12A had just attended to. And Nurse24A shared with PCT12A her abstract expertise on interpreting this patient's unusual behavior, even though most nurses did not spend time teaching PCTs the medical rationale behind their work:

Nurse24A and I leave the room and pass PCT12A, who had just attended to the bed alarm on a shared patient. Nurse24A says to PCT12A, "How is he? Is he acting up?" PCT12A says, "He's confusing me. He says he wants to eat. So I ask him what he wants to eat and he says he wants a sandwich but now he's saying no to a sandwich and he said he lost \$50 and has to go get it." Nurse24A replies sympathetically, "Well he came in drunk. The most dangerous thing having to do with withdrawal is withdrawing from alcohol, that's why we have to keep watching him."

In contrast, the consolidated social structure on Unit B prevented nurses and PCTs from drawing on non-occupational social identities to share expertise with one another across occupation-specific bodies of knowledge, sources of information, and patient-care skills. For example, PCT22B and Nurse11B differed in occupation, race, age, and immigration status. Based on private

conversations with them, we knew they shared a common social identity as mothers of two boys, but to our knowledge they never discovered this commonality, perhaps because of the strong levels of dislike between occupational groups on Unit B. For example, one night Nurse11B asked every nurse what type of frozen yogurt they wanted to order in but did not ask PCT22B or any of the other PCTs working nearby.

The lack of cross-cutting demographics on Unit B not only promoted negative dynamics among nurses and PCTs at the unit level but also meant that nurses and PCTs at the dyad level rarely shared visible social identities. Differences in occupational expertise were magnified by differences in cultural knowledge, proficiency with information technology, and assumptions about skills that stemmed from differences in race, immigration status, and age, in addition to differences in occupation. For example, Nurse39B and PCT3B differed not only in occupation but also in race, age, and immigration status. Their occupational differences in fluency with computerized information were exacerbated by differences in life experience with computers, which stemmed from their other differing non-occupational social identities. As a young, upper-middle-class woman, Nurse39B had grown up with computers, owned a personal computer, and was extremely adept at using computers for work and leisure. In contrast, PCT3B had come from a farming family in Liberia before immigrating to the U.S. and had never owned a computer.

One evening, Nurse39B related to us that she did not see the value in meeting to share information with PCT3B because "[PCT3B] can just check the computer." Later that evening, we saw PCT3B trying to access Huron's electronic patient management portal to review the basic care information on her patients, but she had difficulty doing so (in part because the portal underwent multiple major updates during the 12 months we observed). Giving up on accessing the computer to find out a new patient's restrictions on taking blood pressure, she went to see the patient and asked him to tell her the arm on which he preferred to have his blood pressure taken. He said the left arm, and she began checking his blood pressure. Nurse39B came in, gasped, and said in an annoyed tone of voice, "[PCT3B]! Can you use the other arm? The IV is in this one." PCT3B replied calmly, "I know, but he told me this arm and I listen to them." Nurse39B's eyes got big, and she huffed out a puff of air. Ignoring PCT3B, she turned to the patient and said, "[PCT3B] will take your blood pressure and I'll be back."

Possible Alternative Explanations

Though our analysis showed that cross-cutting demographics between occupational groups on Unit A generated intergroup dynamics that allowed members of cross-occupational dyads to collaborate successfully by drawing on a shared social identity in their interactions with one another, there are two important alternative explanations for the successful cross-occupational collaboration we observed, as well as others that we address in Online Appendix B. First, can the successful cross-occupational collaboration on Unit A and its failure on Unit B be explained by unit-wide differences in culture or selection and retention processes? If this were so, we would have expected to see all nurse-PCT dyads on Unit A engage in successful cross-occupational collaboration, and we did not. Even though Unit A's social structure was characterized by

cross-cutting demographics, there were a handful of nurse–PCT dyads on the unit that did not collaborate well because they did not share or discover a social identity that enabled sufficiently strong identification to overcome their other differences. Two of these six dyads had no visible common social identity in race, age, or immigration status; their life experiences stemming from their other social identities were extremely different and did not provide any common platforms for shared identification. The other four dyads on Unit A that did not collaborate well with one another did share at least one visible common social identity. One shared an immigrant identity (but differed in age and race), one shared an age identity (but differed in race and immigration status), one shared a racial identity (but differed in age and immigration status), and one shared both age and racial identities (but differed in immigration status). In each case, the dyads either did not experience their common identities as truly shared or there were too many other differences to overcome for the commonality to create a sufficient bridge (e.g., they also differed in marital status, ethnicity, motherhood status, and/or country of origin). For example, in one dyad, both members were black but had different ethnicities—one was African and one was African-American—and they experienced their racial identities differently.

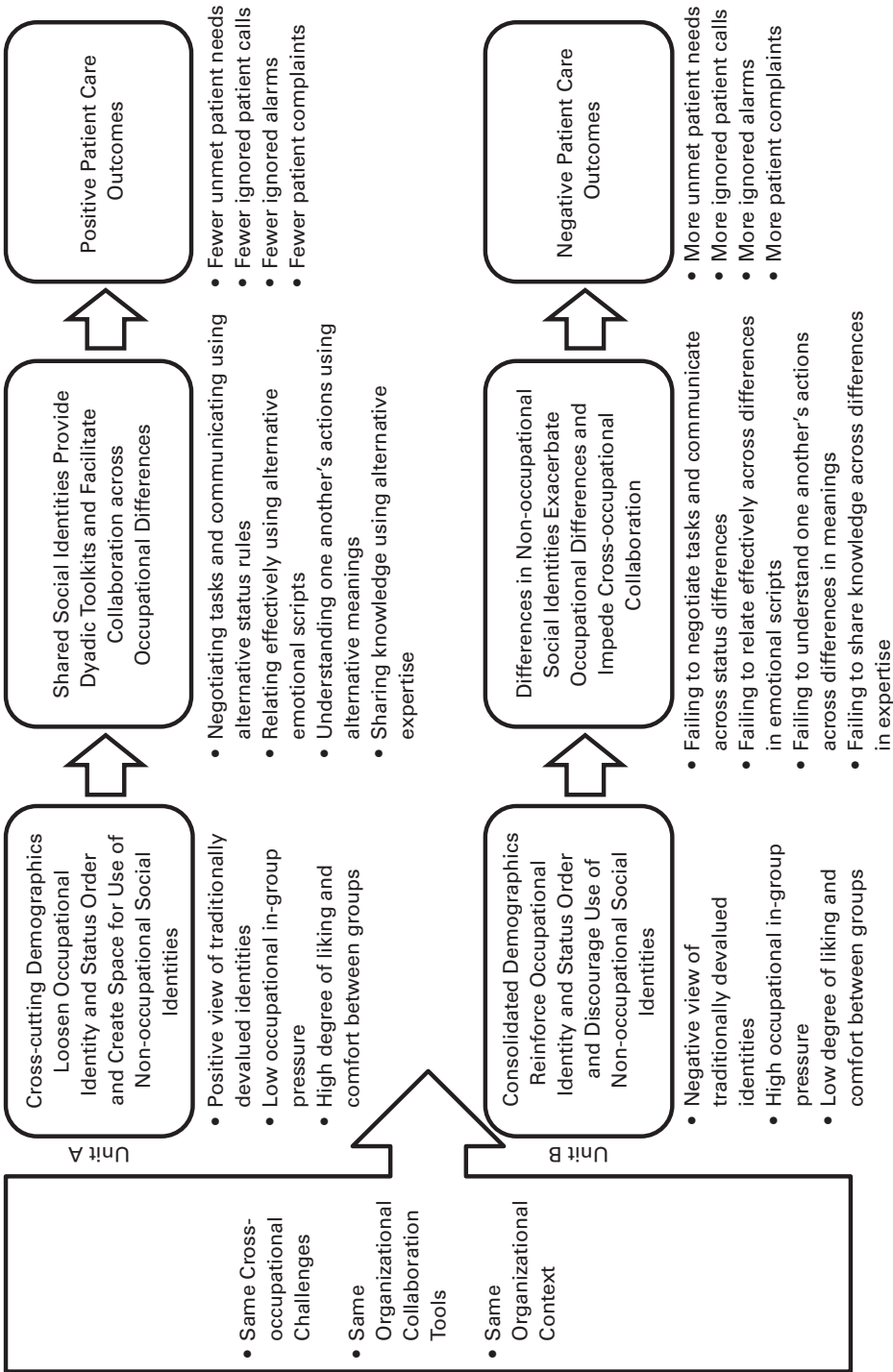
Second, was it individual personality characteristics that drove the uncollaborative interactions between the nurses and PCTs? Our data suggest this is not the case. We observed members of each of these six Unit A dyads have successful social and working relationships with other nurses and PCTs with whom they drew on shared non-occupational social identities. For example, PCT2A and Nurse7A did not share or discover a common social identity and did not collaborate well with one another. But they were each able to collaborate well with other staff with whom they had identified a shared social identity.

DISCUSSION

Differences in occupational status rules, emotional scripts, meanings, and expertise can make it difficult for members of different occupations to collaborate with one another even when the organization provides collaboration tools. We found that these differences can be overcome in social structures where cross-cutting demographics facilitate cross-occupational dyads' use of shared, non-occupational social identities in their interactions with one another. Using shared social identities expands their dyadic toolkit of available status rules, meanings, emotional scripts, and expertise, guides their interactions, and allows them to work successfully with one another across occupational differences, as figure 1 illustrates.

In our study, Unit A was characterized by a social structure in which occupational status was uncorrelated with demographic characteristics, meaning that those who occupied a high-level position in the occupational hierarchy (nurses) frequently did not possess only high-status social identities, and members who occupied a low-level position in the occupational hierarchy (PCTs) frequently did not possess only low-status social identities. The cross-cutting demographics on Unit A promoted three kinds of intergroup dynamics between nurses and PCTs: (1) the valuing of traditionally devalued identities, (2) low occupational in-group pressure, and (3) feelings of intergroup comfort and liking even among members who did not share visible demographic characteristics. These

Figure 1. Cross-cutting demographics, dyadic toolkits, and cross-occupational collaboration.



intergroup dynamics loosened the occupational identity and status order on Unit A, allowing nurse–PCT dyads to draw on a shared social identity to guide their interactions with one another. Even though most dyads on Unit A differed on at least one visible demographic characteristic, most of these dyads drew on a shared identity in their interactions with one another. This shared identity afforded them a dyadic toolkit of shared non-occupational status rules, meanings, emotional scripts, and expertise that they used to collaborate successfully with one another across occupational differences.

On Unit B, in contrast, the consolidated demographics activated the use of common negative stereotypes about traditionally devalued identities, led to strong occupational in-group pressure, and fostered discomfort and disliking between occupational groups. This social structure inhibited nurses' and PCTs' use of shared social identities in interactions. Even the nurses and PCTs who shared social identities did not draw on them to help them collaborate. In addition, the many salient differences in social identities between nurses and PCTs on Unit B exacerbated collaboration challenges that stemmed from occupational differences, and collaboration on Unit B failed. These findings about cross-cutting demographics and dyadic toolkits contribute to both the literature on cross-occupational collaboration and the literature on demography and intergroup relations.

Cross-occupational Collaboration

We make three contributions to the literature on cross-occupational collaboration. First, in terms of barriers to successful cross-occupational collaboration, prior studies have shown that differences in occupational status, shared meanings, and expertise make it challenging for members of different occupations to collaborate (e.g., Carlile, 2004; Kaplan, 2008). Our findings demonstrate that cross-occupational collaboration difficulties can stem not only from occupational differences but also from demographic differences and suggest that the current literature may be overstating the occupational character of cross-occupational collaboration difficulties and understating their demographic character. Our findings suggest that previous studies may be attributing more to occupational differences than justified. We find that, in consolidated social structures, which occur frequently given strong occupational clustering by race, gender, age, and immigration status, dyad-level differences in status rules, emotion rules, meanings, and expertise stemming from different non-occupational social identities can exacerbate occupational differences and lead to failed collaboration.

Second, in terms of when successful cross-occupational collaboration can occur, the current literature demonstrates that it can occur when members have access to organizational tools provided by top managers such as rules and routines, boundary objects, and common spaces (see Okhuysen and Bechky, 2009, for a review). Even when such tools are available, however, collaboration often fails, as members of higher-status occupations use these very tools to enforce occupational boundaries to protect their privilege (Bechky, 2003a). Because nurses and PCTs on both units had access to the same rules and routines, boundary objects, and common spaces but collaborated differently, our research shows that the use of such collaboration tools to overcome or reinforce boundaries can be shaped by the degree of cross-cutting demographics

in the social structure. Cross-cutting demographics at the unit level promote particular intergroup dynamics that loosen attachments to the occupational identity and status order and allow members of different occupational groups to draw on a shared social identity at the dyad level that enables collaboration.

Third, in terms of how successful cross-occupational collaboration occurs, the current literature shows that it occurs when members use organizational tools to facilitate the negotiation of status, translation of meanings, and communication of expertise across occupational boundaries (e.g., Bechky, 2003b; Kellogg, Orlikowski, and Yates, 2006). Our findings show that successful collaboration can also occur when members of different occupational groups draw on a shared non-occupational social identity that broadens their dyadic toolkit. This dyadic toolkit provides them with alternative status rules that allow them to successfully negotiate tasks and communicate across occupational differences in status, alternative emotional scripts that allow them to express disagreement and forgiveness with one another, alternative beliefs, values, and demeanors that allow them to understand and appreciate one another's actions, and alternative bodies of knowledge, information, and skills that allow them to share occupation-specific expertise. In some ways, our finding about the importance of a shared social identity is akin to Bechky's (2003b) finding about the importance of "common ground" to cross-occupational collaboration. But Bechky's design engineers, technicians, and assemblers found common ground by coming into one another's physical work spaces, and our nurses and PCTs found common ground by drawing on a shared, non-occupational identity in interactions.

Demography and Intergroup Relations

This paper also makes several contributions to our understanding of demography and intergroup relations. First, scholars have shown that occupational demography matters for individual outcomes such as members' experience, access to advancement, and equity with regard to pay and other privileges (e.g., Tomaskovic-Devey, 1993; Fernandez and Fernandez-Mateo, 2006). We demonstrate that it also matters for organizational outcomes such as cross-occupational collaboration. Cross-cutting demographics promote positive intergroup identification experiences that provide dyads with an expanded toolkit of status rules, emotional scripts, meanings, and expertise to help them overcome differences and collaborate successfully.

Second, scholars have shown that cross-cutting demographics facilitate three psychological processes that promote positive intergroup relations: the valuing of traditionally devalued identities because of the proportional representation of low-status group members in high-status positions (Ely, 1994, 1995), low in-group pressure because of a high degree of intersecting group affiliations that exert diverse and often counteracting identity pressures (e.g., Blau and Schwartz, 1984), and intergroup liking and trust via direct and indirect effects of homophilous cross-group interactions (e.g., Pettigrew and Tropp, 2006; Pettigrew et al., 2011). We find that these psychological processes loosen attachment to the dominant identity and status order and allow intergroup dyads to discover a shared identity that can serve as a source of connection, identification, and collaboration. These findings also help explain the mechanism underlying what other scholars refer to as "weak faultlines" (e.g.,

Lau and Murnighan, 1998). Previous scholarship in the faultlines tradition has attributed positive outcomes from weak faultlines to the absence of polarizing, strong faultlines. We specify a mechanism that suggests how weak faultlines may lead to better intergroup relations and outcomes: the loosening of attachment to the dominant identity and status order enables intergroup dyads to connect around other shared social identities and improves intergroup relations and collaboration.

Third, the current literature suggests that intergroup contact facilitates positive intergroup relations under a particular set of conditions: when the two groups are equal in status, when authorities support interaction between the two groups (Pettigrew et al., 2011), when the groups share a superordinate goal (Allport, 1954), when the teams' learning environment is seen as supportive (Foldy, Rivard, and Buckley, 2009; Ely, Padavic, and Thomas, 2012), or when cultural differences are valued (Ely and Thomas, 2001; Apfelbaum, Norton, and Sommers, 2012). Our findings demonstrate that positive intergroup dynamics can result even when the two groups are unequal in status (e.g., occupation) as long as there are cross-cutting demographics so that other status-laden characteristics are equally distributed across groups. Our findings also suggest that organizations responding to calls to "increase diversity" need to attend to issues of status and hierarchy. And that means ensuring diversity across all levels of the occupational hierarchy within the organization.

Future Research

These findings raise several questions for future research. First, we have advanced a model of how cross-occupational dyads can use the dyadic toolkits provided by their shared social identities to collaborate successfully with one another, but we were not able to model the process by which dyads come to find these shared social identities. On Unit A, even dyads with no visible, common demographic characteristic often used a shared, nonvisible identity to help guide their interactions. Future research could gather data on cross-occupational dyads from when they first encounter one another to map the process by which dyads discover shared social identities.

Second, we show that cross-occupational dyads may fail to collaborate successfully even when they both work in a social structure with cross-cutting demographics and share a visible social identity. We suggest this happens when the dyads do not experience their common identities as truly shared or because there are too many other differences to overcome for the commonality to create a sufficient bridge. This is consistent with research on intersectionality, which shows that it is imperative to examine all the ways different social identities interact. For example, important variation is missed when scholars lump together all black people without considering how their other social identities, such as age, nationality, gender, or immigration status, affect cognition and action (Collins, 1998; Acker, 2006; Holvino, 2010; Vallas and Cummins, 2013). Because we observed only a handful of these cases of failed cross-occupational collaboration among dyads working in a social structure with cross-cutting demographics who share a visible social identity, we were not able to fully explore the mechanisms associated with their failure. For example, with our data, we cannot rule out the possibility that these dyads failed to collaborate because of interpersonal issues or conflict within the dyad rather than

because of identity differences. Future research could investigate these mechanisms. What our study has shown, however, is that demography and shared social identities are critical to increasing our understanding of how people can move beyond occupational differences to work effectively together.

Acknowledgments

We gratefully acknowledge Lotte Bailyn for tremendous support throughout all phases of this research and Mauro Guillén and three anonymous reviewers for improving the paper throughout the review process. The article has benefited greatly from comments on earlier drafts by Michel Anteby, Evan Apfelbaum, Diane Bailey, Pech Colatat, Stephanie Creary, Roberto Fernandez, Erica Foldy, Mark Granovetter, Paul Leonardi, Denise Lewin Loyd, Leslie Perlow, Kathy Phillips, Aruna Ranganathan, Mabel Abraham, Ray Reagans, Susan Silbey, Catherine Turco, John Van Maanen, Steven Vallas, Ezra Zuckerman, participants in the HBS Craft of Inductive Qualitative Research seminar, MIT Doctoral Proseminar in Behavioral and Policy Sciences, MIT Organization Studies Group seminar, Stanford Organizational Behavior Seminar, WOW group, and MIT Economic Sociology Working Group. Thank you also to Colleen Gabel for research assistance.

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