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NEXUS WORK:
MANAGING AMBIGUITY IN NETWORK BASED PROJECTS

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ABSTRACT

Theorists have argued that network based projects rely upon lateral modes of coordination, but little research examines how the ambiguity that ensues is managed. With an ethnographic study of music producers, we studied how those in the structurally central 'nexus' role integrated contributions from experts without direct authority over them. We found that nexus actors differentiated their responses to three types of ambiguity: an ambiguous quality metric; ambiguous occupational jurisdictions; and an ambiguous transformation process. Our grounded theoretical explanation of the nexus role specifies an underappreciated relational form of brokerage that contrasts with structural conceptions of brokerage and delineates the types of ambiguity that can be resolved through relational work.

Word count = 110

For more than forty years, organizational theorists have struggled to understand the new organizational forms emerging in a post-industrial economy (Bell, 1973). With the importance of knowledge and creative work to the economy (Adler, 2001; Powell and Snellman, 2004); the infusion of information and technical work into a broader category of jobs (Zuboff, 1988; Barley and Orr, 1997); and the pace of innovation (Eisenhardt and Brown, 1998), organizational theorists have recognized that "the bureaucratic form is out of joint with contemporary realities" and that we should expect new social systems better suited to devising creative approaches to the issues facing society (Bennis, 1966: 251). Post-bureaucratic forms of organizing are theorized to feature decentralized decision-making, less dependence upon vertical control systems, more permeable boundaries, and greater fluidity and ambiguity (Bennis, 1966; Miles and Snow, 1986; Heydebrand, 1989; Romanelli, 1991; Daft and Lewin, 1993). How people working in such forms respond to the ambiguity that ensues when authority structures and occupational boundaries are less clear remains under theorized.

Powell's theory of 'networked' forms provides the most comprehensive insight (1990). Drawing upon the notion of temporary project work and long standing contract relations or 'quasi-firms' in industries that have used these forms for decades (Eccles, 1981b; Faulkner and Anderson, 1987), Powell argued that networked forms rely upon relational communication, norms of reciprocity, and concerns over reputation to encourage cooperation and foster coordination among an array of experts. While some degree of interactions among individuals in a network may be governed by contracts (Caves, 2000), most interactions are governed by informal social mechanisms such as reputation (Jones, Hesterly, and Borgatti, 1997), short-term trust (Meyerson, Weick, and Kramer, 1996), roles (Bechky, 2006) and field-level norms (Becker, 1982; Anand and Peterson, 2000).

The ability of network forms to develop and sever ties to external contributors as needed may enable them to adapt to environmental conditions, but those same capabilities can also create a great deal of ambiguity for the individuals who work within them (Jones, 1996). In such forms, "boundaries are ill-defined"; "work roles are vague and responsibilities overlapping" (Powell, 1990: 309) and direct lines of authority weak or absent. Furthermore, projects organized in networks may involve many types of organizations and thus participants may not share all of the same work practice repertoires, interests, incentives or goals. This can lead to multiple and potentially competing understandings of the same situation – the guiding definition of ambiguity (Weick, 1995). As the subtle nuances of how interactions unfold are often left to interpretation (Bechky, 2006), managing ambiguity may be endemic to projects in networks even more so than within organizations.

Weick defined ambiguity as "an on-going stream that supports several different meanings at the same time" (1995: 91); Martin defined it as "a lack of clarity, high complexity or a paradox that makes multiple…explanations plausible" (Weick, 1995: 134). Unlike uncertainty, more information does not resolve ambiguity, as it may not be clear what questions to ask or what problems to solve (Weick, 1995). "The problem in ambiguity is not that the real world is imperfectly understood and that more information will remedy that. The problem is that information may not resolve misunderstandings" (Weick, 1995: 92). While ambiguous situations can offer the opportunity for reflection, invention and improvisation, individuals facing such situations will eventually need to narrow down their options for action in order to proceed in a coordinated fashion (Weick, 1995, 1998). Weick outlines a number of types of ambiguity, but does not distinguish if or how people respond to them differently or the consequences for action or inaction.

Because the work of bringing a networked project to fruition invites much ambiguity, it offers a rich context for developing a theoretical appreciation of how people respond to ambiguity. Despite a long gestation, the questions Powell posed: "Do participants in network arrangements face novel problems of control? How do people cope with…circumstances in which control is not direct and immediate and conformity to well-established administrative routines are not guaranteed?" (1990: 327) remain unanswered. What is needed is an exploration of how people at the nexus of project networks manage the ambiguity that can result from the lack of a shared organization.

Our approach examines the relational practices of those operating in the *nexus* role: those who are structurally central and responsible for integrating the work of project contributors, without direct authority over them. With an ethnographic investigation of 23 independent music producers in the Nashville Country music industry, we build a grounded theoretical conception of the defining characteristics of the nexus role and tackle the question of how projects are managed in networks. First we found that individuals in the nexus role regularly encountered three types of ambiguity: 1) an ambiguous quality metric (What makes a hit or constitutes success?); 2) ambiguous occupational jurisdictions (Who should be involved and when?); and 3) an ambiguous transformation process (How should the work be done?).

Producers differentiated their strategy to respond to these three types of ambiguity: 1) creating a shared quality aesthetic to reduce ambiguity over quality; 2) articulating role boundaries to reduce ambiguity in occupational jurisdictions and 3) building creative capacity to enhance the project's ability to generate options and respond to the unexpected. While two types of ambiguity (quality and occupational jurisdiction) could be reduced with relational work, the third (transformation process) could not be reduced. Instead, those in the nexus role built

creative capacity to enhance their project's ability to respond to unanticipated opportunities or constraints. Our model of nexus work contributes a more nuanced understanding of how projects are managed within networks; specifies an underappreciated relational form of brokerage; and delineates the types of ambiguity that can and cannot be resolved through relational work.

THE NEXUS ROLE

Producers in music, film, theatre, advertising, and special events industries perform a critical role – they are uniquely responsible for harnessing the talent and resources necessary to bring a creative project to fruition. In all these cases a few things are true: producers are structurally central to the project (not all parties may be connected to each other, but each is connected to the producer); not all of the parties are from the same organization; and every expert's contribution must be integrated or synthesized into a coherent whole. However, the role of producer is not just a Hollywood or a Nashville story—by specifying the defining theoretical parameters of this type of work, we develop a broader theoretical conception of the nexus role relevant to many types of knowledge and creative work. Drawing from the literature on the practices involved in knowledge and creative work, we outline three antecedents of the nexus role: 1) structurally central to a project; 2) requires integration work; and 3) lacks direct authority over contributors to the project. Taken together, we conceptualize nexus work as a more specific type of relational brokerage work – one in which the benefits of being structurally central can only be realized when those in the nexus role guide others toward the creation of a coherent whole.

1) Structurally Central. Scholars examining knowledge and creative work often focus on those in brokering or boundary spanning roles (Fleming and Waguespack, 2007). Those in the

nexus role perform a relational type of brokerage that differs from the more structural network conceptions of brokerage (e.g., Obstfeld, 2005). The network conception of brokerage emphasizes the unique informational benefits that can accrue to those that are structurally central (Burt, 1992). The greater the degree to which an individual can uniquely connect non-redundant sources of information and social contacts, the greater the potential information and control advantages that are likely to accrue to that individual (Burt, 1992).

In contrast, a relational or practice conception of brokerage focuses on the work brokers engage in when connecting disparate people, knowledge or ideas and the benefits that can ensue (Hargadon and Sutton, 1997; Baker and Obstfeld, 1999; Obstfeld, 2005). For example, by identifying the practices used by IDEO designers –acquiring, storing, analogizing, retrieving, and applying information gathered from other industries to the problem at hand— Hargadon and Sutton (1997) explained how this firm could broker ideas and routinely innovate. Similarly, Obstfeld (2005) focuses on brokers who foster innovation by bringing others together - using their structural advantage to perform a 'joining' role. This type of relational brokerage echoes Simmel's (1950) conception of non-partisan brokers who mediate or arbitrate among competing experts to accomplish mutual ends.

Unlike structural conceptions of brokerage, from a practice perspective, brokers need not garner distrust from those they connect because brokers help "projects that represent combinations of people, ideas, and resources" (Obstfeld, 2005: 103) come to fruition. While the structural conception of brokerage focuses on the power and control advantages that can accrue from a broker's unique access to information and social contacts, the practice perspective of brokerage emphasizes how that unique information can be put to creative use. From a structural perspective, brokers are conduits for access to information and thus can directly obtain

information, power and control benefits from their individual use of that information. From a practice perspective, brokers cannot obtain those benefits on their own. Instead, they must integrate different ideas, innovations and contributions from others and synthesize them into a coherent whole in order to obtain both individual and mutual benefit.

From our perspective, this is a critical and previously under appreciated difference – those in the nexus role cannot benefit from their position on their own; integration work is required. We suspect that the need for brokers to engage in integration work can help reconcile prior conflicting empirical results and tease apart competing theoretical conceptions of brokerage. For example, Fleming and colleagues recently found that while brokerage can have a positive effect on the generation of ideas, ideas that are brokered are less likely to be reused and recombined in the future than are ideas resulting from more cohesive collaborations (Fleming, Ming, and Chen, 2007). Integration work may be necessary to foster future idea generation.

2) Integration Work. Integration work involves the selection, rejection and synthesis of disparate ideas and contributions into a coherent whole. Individuals in the nexus role do not just transfer, share or broker knowledge, they must incorporate it and integrate into a creative product, system or output – regardless of whether it is a product, building, play or recording. Scholars studying the organization of knowledge and creative work in projects have examined how brokers innovate routinely (Hargadon and Sutton, 1997); how collaborations become creative (Hargadon and Bechky, 2006); how roles are learned (Bechky, 2006); and how knowledge and understanding is transformed (Bechky, 2003a, 2003b). These field based studies show that prior conceptions of 'knowledge transfer' have been over simplified.

In order to share or transfer knowledge in a way that can be reused or integrated, individuals must be able to access expertise and accumulate new ideas (Murray and O'Mahony,

2007). For example, boundary objects play a critical role in fostering knowledge transformation by enabling parties with varying talents and perspectives to contribute their specialized domain of expertise (Bechky, 2003a, 2003b). Carlile (2004) distinguishes between three progressively complex ways in which knowledge can be managed across boundaries - transferring, translating, and transforming. Transferring knowledge requires information processing; translating knowledge requires interpretation; and transforming knowledge, the most complex task, requires "significant practical and political effort" (Carlile, 2004: 60). Transforming knowledge is a more difficult task primarily because ideas must be integrated – which requires modification of their original form in order to achieve interdependence and synthesis (Carlile and Rebentisch, 2003).

Hargadon and Douglas' (2001) study of Edison's design of the electric light provides an excellent example of the nature of integration work. "Edison did not invent the incandescent light, nor did he invent the generators or distribution system that powered such a light (Conot, 1979; Hughes, 1983). Edison's success lay in developing a system of electric lighting that adapted and integrated each of these components" (Hargadon and Douglas, 2001: 481). By working with others and embracing designs that mimicked existing gas light institutions, Edison integrated what was novel with what existed before. Thus, critical design choices were more a product of Edison's integration work than they were a product of engineering or design constraints (Hargadon and Douglas, 2001). Individuals in the nexus role fulfill a similar integrating role, but must do so without necessarily having authority over project contributors.

3) Lacking Direct Authority. Although it would be easy to argue that formal lines of authority are not often relied upon in the day-to-day operations inside an organization, Simon argued that formal lines of authority are the primary feature that "distinguishes the behavior of individuals as participants of organizations from their behavior outside of organizations" (1976:

124). This is consistent with Powell's conception of the distinguishing feature of network forms. In organizations, authority provides an important basis for the settlement of disputes by helping to establish "who is to decide" (Simon, 1976: 142). In any form of organizing, formal lines of authority will only take one so far, but operating without them at all poses a far more complex task. According to Simon, "it is authority that gives an organization its formal structure, and other modes of influence [such as persuasion and influence] may be discussed after this structure has been specified" (1976: 124). When there is no shared basis of authority, the simplest organizing task can become more challenging (Etzioni, 1959; Harrison, 1960; Coleman, 1980) because of the ambiguity that can ensue.

To be clear, we are not saying that ambiguity does not exist in projects in organizations. Indeed, even when contributors to a project share the same organization, ambiguity can persist – where all members to a project may not agree on who is on the team (Mortensen, 2008); where task, functional and occupational jurisdictions are contested (Bechky, 2003a); or where project members maintain different interests or thought worlds (Dougherty, 1992; Dubinskas, 1992). Mortensen's (2008) identification of widespread boundary disagreement among 39 formally defined software teams in a single organization reveals that, left unaddressed, such ambiguities can have serious negative performance consequences. By studying how individuals manage ambiguity in network based projects, our aim is to develop a grounded theoretical understanding that will be relevant to individuals in organizations that share the defining characteristics of the nexus role.

RESEARCH METHODS

In order to understand how ambiguity in network based projects is managed, a practice approach is warranted. Barley and Kunda (2001) argue that situated field studies of work practices are likely to produce the most insightful theoretical lens as to how post-bureaucratic forms of organizing take shape. A practice-oriented approach focuses on work activity (Orr, 1996; Orlikowski, 2002), and more specifically, the repertoire of actions that reflect people's understandings of "how to get things done" within complex settings (Orlikowski, 2002: 249). The practice approach is also uniquely suited for studying the ambiguity at the heart of nexus work since it emphasizes "the way a task, as it unfolds over time, looks to someone at work on it, while many of the options and dilemmas remain unresolved" (Brown and Duguid, 1991: 41)

Research Setting

As Barley and Kunda argued, "Projects have increasingly become a primary locus of affiliation and decision making and hence, an appropriate focus of theorizing. A comprehensive understanding of organizing would then require greater attention to the logistical, technical, temporal and managerial dynamics of project life" (2001: 79). Researchers examining the cultural industries have focused considerable attention on how individuals attempt to secure resources for their projects from talent and resource networks. For example, executives and freelancers attempt to reduce the perceived uncertainty of their organizing efforts (Miller and Shamsie, 1999; Miller and Shamsie, 2001; Elsbach and Kramer, 2003), talent agents weave narratives to legitimate their decisions (Bielby and Bielby, 1994) and film directors leverage hybrid roles to lend legitimacy to their projects (Baker and Faulkner, 1991). Scholars have also raised the specter of competing perspectives regarding the quality of creative products (Becker, 1951; Faulkner, 1983). However, while research has emphasized the importance of connecting

individuals to projects (Faulkner and Anderson, 1987; Bielby and Bielby, 1999; Obstfeld, 2005), few have pursued a practice approach to understanding how those in the nexus role manage the ambiguity that can ensue from these type of work arrangements.

The Nashville Country music industry is a particularly opportune setting in which to study how ambiguity in network based projects is managed. First, Country music projects bring together freelancers and experts representing multiple organizations, offering a unique opportunity to study projects in a network context. Second, musical projects are typically managed by independent Country music producers who are not only at the center of the organizing process but who also integrate contributions from many types of experts (song writers, publishers, musicians, artists, engineers, and label personnel) to form a coherent creative effort. Third, projects regularly emerge in the Country music industry, affording the opportunity to study the work practices of multiple producers working on a variety of projects within a short time frame. Finally, because Country music is primarily produced in Nashville, all parties to the project were collocated and in a densely connected locale, enabling ethnographic field study.

Data Collection

During the spring of 2003 through the spring of 2006, the first author lived in Nashville and conducted an ethnographic field study of producers in the Nashville Country music industry. Data collection included interviews with producers; participant and non-participant observations; and interviews with other contributors to the production process. We used these three data sources to develop and triangulate our understanding of nexus work.

Interviews. The first author conducted multiple interviews with 42 people, totaling 85 interviews overall. Interviews ranged from a single hour-long interview, to as many as eight

multiple-hour interviews over the course of the data collection. Twenty-three people were independent Country music producers. The remaining interviews were conducted with individuals from a range of occupations involved in the music production process, including: performers/artists (3), engineers (6), label personnel (1), musicians (3), an independent production assistant (1), independent A&R/song screeners (1) and songwriters (4). By studying the variety of roles involved in the Country music industry, we were better able to understand and triangulate our understanding of nexus work. The first author used a semi-structured interview approach that employed both grand tour questions (Spradley, 1979) and more specific questions that probed how participants interpreted and approached decisions and interactions with others involved in the music production process.

Observations. Observations helped illuminate the taken-for-granted and unintended aspects of the nexus role that producers might not be able or willing to articulate in interviews. The first author conducted over a hundred hours of observation. This included observing seven producers, whom she had met through the interviews, in a range of interactions, including producers' interactions with resource gatekeepers (such as song publishers and songwriters) and the myriad of contributors in the recording studio, including artists, freelance musicians, recording engineers, label personnel and managers. Over lunch, breaks, and during late night sessions, the first author observed and listened to contributors discuss their work, and their interactions with others germane to the project. After these observations, the first author debriefed producers to ask them to clarify the meaning of statements and interactions, and ended each day by typing up her field notes.

Participant observation. The first author also co-produced a single song. She worked with her co-producer to select the song to be recorded and co-managed the three hour recording

session involving an engineer, drummer, lead guitarist, pianist, and bass guitar player. The first author gained first-hand experience in attempting to manage the challenges involved in nexus work—an experience made more complicated by an audience of five other musicians waiting to record their own demo who offered their own suggestions regarding her creative effort!

Analytic Approach

Because research on how those in the nexus role manage ambiguity in network based projects was lacking, an inductive approach to developing theory was warranted (Edmondson and McManus, 2007). Our analytic approach followed an iterative process of developing grounded themes and working hypotheses regarding nexus work, and testing these themes and hypotheses in subsequent data collection and analysis. Data analysis included four phases: mapping the activities of the production process; developing and analyzing nexus work practices; linking their relationship to specific types of ambiguity; and then checking the internal validity of the theory (Glaser and Strauss, 1967; Strauss and Corbin, 1990).

Phase 1. Project activity mapping. Since we were interested in producers' accounts of what they did when managing a creative project, in the first phase of analysis, the first author wrote up "vignettes" (Miles and Huberman, 1994) of each producer's case, their interpretations of what happened, and their accounts of the practices used throughout their projects. From these vignettes, we developed a list of activities involved in a project, highlighting the important decision points and contributors involved. This list helped us understand who was involved in the music production process at various points in time, what each party had at stake throughout, and how earlier decisions and actions affected subsequent decisions and interactions.

Phase 2: Identifying and comparing practices. In the second phase of analysis, we systematically identified, defined and compared the work practices used by producers. We

closely examined the vignettes, existing interview transcripts, and observation field notes to identify practices used by producers in the course of their work. We then began an iterative process of honing and refining the set of practices to a core group common to the producers in our sample. To this end, we developed definitions for each practice and coded all of the transcripts using the qualitative software, *Atlasti*, iterating through the data several times to see if the practices were mutually exclusive and comprehensive (Strauss and Corbin, 1990; Miles and Huberman, 1994). Through this process of iterating through coding and testing during subsequent data collection and analysis, our work practice codes reached a level of stability, where they were mutually exclusive, comprehensive, and confirmed by further data collection.

In developing the set of nexus work practices, we considered how many of the 23 producers used each practice. While not every producer used every practice, every producer used at least one of the practices from the repertoire we identified to respond to a particular type of ambiguity. We also examined the strength of data supporting each practice. Overall, the frequency counts of the practices in combination with the strength of evidence analysis justified the inclusion of the practices in a theory of nexus work. Definitions, details of frequency of use and strength of evidence for each practice are provided in Table 1.

Insert Table 1 about here

Phase 3: Ambiguity mapping. We next developed a practice matrix, which showed the prevalence of practice use across producers, and compared when producers used specific work practices during a project, under what conditions, and for what purpose. By examining why producers used the practices at certain times, we were able to identify the conditions that shaped the behaviors of nexus work – and learned that managing ambiguity played a central role. At

this stage, we categorized the different types of ambiguity that triggered producers' use of specific practices. We then mapped the nature of the ambiguity encountered by producers with the practices they used to respond to it. We then returned to the data to assess whether the actions that the producers engaged in served to increase or decrease ambiguity on the project. This helped us to further refine our model and understand what types of ambiguity could be resolved through relational work and what types could not.

Phase 4: Internal validity. To establish the internal validity of the theory, in the fourth phase of analysis, the first author submitted conclusions to three producers for their review. Producers agreed with the case depictions, including the nature of the ambiguities and challenges they faced, how they perceived their challenges, and how they approached them. They expressed appreciation for having "labels" for their everyday activities and a more systematic framework for thinking about the dynamics of their work.

Integration Work and the Music Production Process

Before presenting our analytic findings, we provide a brief overview of the music production process and the integration work involved as inducted from field data. Country music projects involve the production of a collection of songs, ranging from a three-song demo project to a ten-to-fifteen song album. At project inception, the "project" exists primarily as a kernel of an idea and a relationship, albeit sometimes weak, between artist and producer, and potentially the record label, if one is involved. Producers begin a project by identifying three primary resources from different resource markets: talent ("session" musicians, background singers and engineers), material (songs from songwriters and song publishers), and label support (which might include funding, distribution and/or marketing).

Insert Table 2 about here

As shown in Table 2, producers engaged with a range of experts— artists, record label personnel, musicians, engineers and artist managers—as they cycled through the activities involved in bringing a creative project to fruition. Throughout the production process, producers attempted to elicit ideas (have you thought about this song?), perspectives (I think this song can be a hit), and contributions (musical or technical contributions) from everyone involved; build generative possibilities; and select and reject options from the possibility set. The challenge for producers was to navigate this dialectic in a manner that considered the diverging perspectives and ideas of multiple stakeholders and ensured continued positive support for the project.

Selecting songs. The first two activities requiring integration work included selecting the songs and talent that would be included in the project. Selecting songs involved dialogue and negotiation among producers, artists, label personnel, songwriters/ publishers and artist managers over which songs were best suited for a particular artist and which songs had the potential to be successful "singles" or hits. The song selection process could be demanding since it was not uncommon for 2,000 to 3,000 songs to be considered for a single project. The integrating process inevitably involved winnowing options and rejecting experts' song choices or contributions. Without deft handling of the song selection process, producers could lose the support of the record labels or alienate artists, songwriters or song publishers, who may have specially chosen or written a song for the artist or project.

Casting musicians and engineers. Casting session musicians and engineers for the songs selected for the project also required integration work. While hiring players and engineers often fell clearly within the producers' occupational jurisdiction, artists and label personnel could

also lay claim to these decisions. In addition, session players could make themselves more or less available to certain projects based upon their availability as well as the attractiveness of the project and the producer.

Preparing songs. Integration work was critical to "preparing" song arrangements, and the subsequent activities of "tracking" and "mixing." During these activities, producers attempted to cultivate the "magic" that would enable their projects to sell in the Country market. Yet the manner and style in which songs were recorded remained open to interpretation. Every expert had a unique perspective that was relevant or a unique talent to contribute. The producer's job was to surface those contributions, ideas and opinions, and integrate them to achieve synthesis. When preparing songs, producers worked with artists and sometimes session musicians to create a more or less defined plan of what musicians will play, and how the artist will approach the song. The label, if one was involved, might also review how the producer intended to "produce" the songs. The degree of specificity in the plan was important—those involved in preparing songs could leave more or less room for musicians, engineers and artists to improvise and offer their ideas and contributions.

Tracking songs. When "tracking" or recording the songs in the recording studio, producers tried to simultaneously draw out the best ideas and contributions from artists, musicians, engineers, and even label personnel not intimately involved in the creative process. Throughout tracking, the potential for tension and conflict remained high as producers selectively integrated competing ideas, perspectives and contributions and guided the project toward aesthetic coherence. The potential for conflict could reach a crescendo in the highly public studio recording space where experts' exchange of ideas and performances were visible to all. Role performances were particularly important to freelancers since these performances were

likely to affect future work possibilities (Bechky, 2006). While label executives were less likely to be present in the recording studio, producers continued to elicit and integrate their perspectives throughout the tracking sessions since securing the continued support of record labels was critical for distribution and promotion. These factors, combined with the pressure to produce novel creative content on expensive studio time, could inhibit experimentation. Thus, producers strove to create a positive working environment that was conducive to improvisation, experimentation and suggestion.

Mixing and editing songs. Integration work was also essential in "mixing," or editing the large quantity of "tracks" to the final song mix. In this activity, producers worked with engineers, artists, label personnel and managers to select from and compile the myriad of "takes" into a single final recording. Mixing was often laborious and incredibly detail-oriented. A single song could easily take a day (8 or 12 hours) of eliciting, rejecting and selecting ideas and perspectives to arrive at the final mix.

Delivering the product. Even the final step—delivering the final product— required integration work. When delivering the final product, producers worked with artists, managers, and label executives to decide which songs would make it on the final projects, whether changes needed to be made to the final mixes, whether more songs had to be recorded, and which songs would be released as singles (to radio or Itunes). These decisions could ultimately be controlled by the record label, but producers and artists were deeply invested in these decisions and tried to influence the outcomes the best they could. The nightmare result for any producer was a final meeting where a label executive said, "There's nothing I can sell on this album, go do it again."

FINDINGS: NEXUS WORK IN PRACTICE

Producers are in a nexus role in that they are structurally central to the development of projects and responsible for integrating the work of contributors without having direct authority over them. We found that Country music producers regularly confronted three types of ambiguity. Producers drew from a repertoire of relational practices to respond to these types of ambiguity and create an environment that could foster creativity.

The first type of ambiguity pertained to *what the creative process would produce* due to competing or ambiguous definitions of the quality of creative output. The second type of ambiguity pertained to *who would be involved in the creative process* stemming from unclear or overlapping occupational jurisdictions. The third type of ambiguity pertained to *how the creative work would be achieved* due to the non-routinizable process for realizing resources and the need to capture the disparate talents of all involved (Jones, 1996). Our three types of ambiguity map onto Weick's and McCaskey's broad characterization of ambiguous situations (McCaskey, 1982; Weick, 1995: 93). However, neither scholar suggests that these sources of ambiguity should be handled differently.

In the next section, we describe in more detail the nature of each type of ambiguity and how those in the nexus role (music producers) strategically responded to each source of ambiguity. Counter-intuitively, producers were not always working to reduce ambiguity. While two types of ambiguity (quality and occupational jurisdiction) could be reduced with relational work, the third (transformation process) could not be reduced with relational work. Instead, those in the nexus role built creative capacity to enhance their project's ability to respond to unanticipated opportunities or constraints. Of the three categories, producers drew from the

broadest repertoire to respond to ambiguity in occupational jurisdictions. We conclude with a discussion of these findings and their implications for those in the nexus role in other contexts.

Ambiguous Quality Metric

The first type of ambiguity that producers encountered pertained to the lack of specific and objective measures of the quality of sound that all contributors should strive towards. This type of ambiguity maps onto McCaskey's characterization of situations where there are "Multiple, conflicting interpretations…; different value orientations…; goals are unclear, or multiple and conflicting…; and where success measures are lacking" (Weick, 1995: 93). In the Country music industry, ambiguity over quality boiled down to a lack of agreement over what made a "hit" song. For example, in one recording session, an electric guitarist felt a special flourish he had added in the chorus made the song stand out, while the producer felt the flourish competed with the artist's performance. At the same time, the artist had yet another idea about what he wanted from the musician. The label representative thought yet a different type of flourish would add the extra touch needed to make the song a radio hit. Similar differences in perspectives arose among label personnel, producers, artists and their managers, regarding which songs they thought best represented an artist, and which ones would most likely to be 'radio hits'. In the case of Country music, the output created must not only represent the talents of everyone involved, but also be marketable.

The lack of agreement over what makes a hit song presented a three-pronged challenge to producers. First, since clearly defined quality criteria were lacking, producers constantly sought to maintain their resource gatekeepers' (most often label executives) perception that their projects warranted ongoing support. Second, when adjudicating among ideas and making

decisions on how to produce a song, the lack of an externally defined quality criteria to point to could precipitate conflict among producers, artists, experts and gatekeepers. Third, when many different types of experts collaborate on a creative project, not only do ideas about what constitutes quality diverge but, what is 'quality' may need to remain ambiguous as each contributor learns what their different talents can together collectively build. In response to these challenges, producers reduced ambiguity by creating a shared quality aesthetic that would guide what the group produced. As summarized in Table 3, producers *educated, introduced references, praised and deferred decisions*. We define each of these practices and show how those in the nexus role put these practices in action.

Insert Table 3 about here

Educate. Producers used educating practices to guide all contributors to a shared sense of what makes a hit. This practice was used most often with new-to-Nashville artists and label personnel, whom the producers felt lacked superior expertise regarding what constitutes a hit. For example, Sarah described her use of this practice with artists developing musical portfolios, or "pitch packages," which would be pitched to labels in the hopes of obtaining funding or distribution:

> [The artist] might call me or email me and say, "I love this song," and I have to tell her, "This is a cheesy song. This song is not going to get you noticed. Let me tell you why I don't think it is appropriate for you to spend money on it for your package." They might be looking at it in terms of what makes them the prettiest or what song they like to sing the most, but I'm looking at it as more of a business proposition. What will the market bear? What will the label get the most excited about?

Sarah educated artists on her criteria for selecting songs, calling upon her market knowledge to teach artists how to craft pitch packages that not only met the artist's tastes but was

competitively differentiated. By doing so, Sarah and other producers using this same practice reduced competing perspectives of the type and quality of the sound to be produced.

Introduce references. Producers also deliberately introduced music samples and references to other songs, musicians, artists, or instruments to help craft the shared aesthetic. For example, as Sarah worked with her artist to choose songs, Sarah deliberately "had her [artist] listen to some bad songs too so she'll know what a bad one sounded like." In the studio, producers often drew references from a deep musical catalogue to help create a shared aesthetic. For example, in one session, the producer suggested, "Maybe we can be a little Police-y" (referencing the band, the Police) to the bass player to get the sound he wanted. The bass player was then able to easily deliver an improvisation that captured the desired feel for the performance. In this manner, producers drew upon a vocabulary of concepts that were universally familiar to project contributors. This practice served to not only reduce ambiguity as to the type of performance desired and but also enabled each project contributor to build upon and recombine old ideas in the service of creating a unique shared aesthetic vision.

Praise. While lavishing praise on contributors is an important means to communicate role expectations to others (Bechky, 2006), producers also praised to reduce ambiguity over the quality desired and foster convergence on a common aesthetic vision. Producers couched their requests for performance modifications and their feedback of performances with lavish praise and positive evaluations in ways that enabled artists and musicians to save face and remain open to new creative ideas. For example, Josh recalled how he learned from the legendary producer Chet Atkins how to provide feedback to his musicians by praising them and later crediting them for those same ideas. "I played what he showed me and when I did that, he said over the speaker: "I love what you're doing... That's great", as if I had come up with the idea myself." Josh later

applied this practice in his own work as a producer: "You want to make the musicians look good to each other. You have the best and most respected musicians in the world. You want to make them feel good." Praising not only helped cultivate creative performances, but was a highly effective way of gently guiding performances toward a quality aesthetic that everyone understood and absorbed. By praising the performances that were aligned with the shared aesthetic that was emerging on the project, producers avoided overt criticism, fearful that it might create a chilling effect on individuals' willingness to experiment and work towards their 'edge' or their individual limits.

Defer decisions. Producers deferred decisions when they disagreed with labels, artists, and managers about song selections; when they wanted to question the performances generated by musicians; or simply suggest new ideas to the range of contributors to the project. Rather than confront a divergence in quality perceptions directly, producers explicitly left those options or creative decisions open until later in the song production process. This allowed producers to reduce tensions over the nature of quality and exercise some influence in creating a shared aesthetic vision. Producers explained that as additional options were generated and the project obtained a greater level of specificity, contributors would have more choices from which to make creative decisions. By deferring decisions and promising future options, producers maintained ambiguity around an emerging quality aesthetic until a later point.

Deferring decisions was especially useful when musicians or artists were hesitant to try something the producers suggested. For example, Trey, a seasoned producer working with the highest caliber musicians, suggested, "Come on man, just try it. Let's just hear how it sounds." Deferring decisions helped producers signal to contributors that the input was not exactly what they wanted, while saving the face of the other participants (Goffman, 1959). When observing

how producers deferred decisions, it became clear that this was not passive "avoiding" of conflict (Pruitt and Rubin, 1986; Murnighan and Conlon, 1991; Lewicki, et al., 2002), but rather a more active management of the timing of specific decisions. Producers deferred decisions with the logic that with more time, more specificity on project goals, and more ideas on the table, two things would happen: 1) more members to the creative decision would have a chance to get involved and become committed to the project and 2) the editorial decisions that would inevitably cause some ideas to win or lose would not limit the potential for new ideas to build in unexpected ways. Producers were loath to narrow down decision-making too quickly which could have the unfortunate consequence of inhibiting the continued generation of creative ideas.

The lack of agreement over what makes a hit song created ambiguity as to the type of performance expected from all parties to the project. To respond to this challenge, producers used a number of relational practices to develop a shared quality aesthetic. Most of these practices served to reduce ambiguity. However, producers were nuanced in their *timing* of the integration of ideas and one practice, deferring decisions, actually increased ambiguity. Deferring creative decisions that could potentially narrow project options allowed each project contributor to learn what their unique talents could collectively build. In this manner, generating some ambiguity around the project's aesthetic left room for improvisation and experimentation and enabled producers to expand the range of creative options from which to choose.

Ambiguous Occupational Jurisdictions

A second type of ambiguity that producers confronted arose from overlapping and ambiguous occupational jurisdictions among members of the project, and thus potentially competing claims for task control, expertise and knowledge (Ritzer, 1977). This type of

ambiguity maps onto McCaskey's characterization of situations where "Roles are vague, responsibilities unclear…; participation in decision-making [is] fluid" (Weick, 1995: 93). When creating Country music, label personnel, the producer, musicians, engineers, the artist, the artist's manager (and sometimes even the artist's spouse!), all had competing claims of control over individual performances, the choice of songs, and the overall direction of the creative product.

Ambiguous occupational jurisdictions presented several challenges. First, competing claims over who had control over creative decisions could derail the support and critical feedback of project contributors and thus inhibit the quality of what was produced. Second, freelance experts involved in the projects—producers, musicians and engineers—were concerned about how their performances would affect their future employment, motivating them to seek control over their contributions (O'Mahony and Bechky, 2006). Since the studio recording space was highly visible, everyone's performance could be evaluated by their peers, who were also likely references for future employment. Producers, musicians and engineers also knew that the final recorded product would be listened to by others who could be primary sources of future work. As a result, musicians were sometimes reluctant to play what a producer suggested if they felt they could not effectively "pull off" or "outdo" a suggested performance. Third, resource gatekeepers had strong motivations to enhance their control over decisions in order to monitor their investment and reduce the risk of failure. Thus, both freelance experts and label executives were highly motivated to take an active role in the creative process.

Producers attempted to reduce ambiguity in occupational jurisdictions by articulating role boundaries. Without well defined *a priori* job descriptions tied to organizational functions and without formal authority relations, producers helped others articulate domains of expertise, vis-à-vis each other and the producers. Producers' efforts to articulate boundaries was made more

challenging since their own claims to expertise were subject to interpretation by others on the project. As one producer stated, "The producer has to command and respect the players and if the producer doesn't command and respect, he's not going to get any respect. End of story." Producers who had difficulty establishing this level of credibility could do little to help each expert articulate their own boundaries of expertise and perform their best.

As summarized in Table 3, we found that producers used a range of practices to articulate boundaries. Producers proactively *defined domains* and *recognized expertise* to strategically articulate occupational boundaries. Producers subtly managed who was involved at key decision-making points in the creative process by *bracketing* parties to creative decisions and then *checking in* with them. To avoid escalation of conflict, producers also *absorbed* contributors' challenges to each others' expertise. All of these practices helped reduce ambiguity in occupational jurisdictions and create an 'agreed upon' space for each expert to craft their contribution.

Define domains. Producers defined domains most often with artists (and in some cases, musicians) whom were new to the Nashville tracking process. For example, Sarah often found that newcomer artists had a more expansive view of their role in production. She explained to her artists how the session would unfold, her expectations about the artists' involvement in the session and their degree of interaction with musicians. Sarah exercised her nexus role to prevent overeager artists from undermining the flow of the session, particularly given time and budgetary constraints. As she described:

> With the artist, I have to be clear with them [sic]. They have their time. When I'm working with them before hand, that's their time, but when I'm in the studio, I tell them upfront. "You don't say anything to the musicians. I'm going to be thinking about what you want, but it's for your own good. When we're in the tracking session, it's not about you. I need to be able to focus on the players and what is going on. I have to be able to keep the energy up." And they might have their idea of, "Well, I came down here and I

> have played in concerts so I'm just going to come down here and run the session. And my brother, he's a guitarist and he said I should do this, so that's what I want to tell the session player." Oh no. That's not going to happen.

As this example described, Sarah proactively coached her artists on their role in the studio to reduce ambiguity over how they would interact with musicians and the extent to which the artists controlled the creative process during the tracking session. Producers using this practice leveraged their structural centrality but did so not to achieve individual benefit but to define domains that enabled different contributors to achieve their best performance.

Recognize expertise. Producers also strategically articulated role boundaries by publicly recognizing the expertise of project contributors and showing respect for their talents. To recognize expertise, producers might: 1) explicitly acknowledge that others are experts of their instruments, 2) ask for advice, 3) implicitly recognize occupational boundaries by giving experts the creative space to proffer their own creative improvisations, and 4) provide feedback to experts without challenging the quality of their performances. Recognizing expertise was a public practice that allowed all contributors to the project to see that their expertise was respected and desired on the project. For example, Travis, a star producer described how he simultaneously gave his musicians direction and creative space by recognizing their expertise:

> As far as arrangements, I do it with the musicians. Basically, I start by saying, "Here are the basic chords. We're all going to figure this out NOW." (He snaps). "You take the intro, guitar player. Steel player you do the fills in between the vocal lines in the first verse. Fiddle and guitar you'll be going like this dah dah dah in the chorus and in the break we'll turnaround –a musical turnaround, the piano fills the second verse." You assign that to someone….Then all that is subject to change based on what the musicians come up with. I hire great musicians for their ideas, so let them go, let them be creative. You hire them for their talent.

Travis carved out spaces within the creative sandbox in which his musicians could perform their best. However, efforts to recognize expertise by creating space had to be conducted in a way that

did not compromise the producers' role performance or the song's production quality. Travis explained, "If you don't give them any direction they'll flip into autopilot and they'll just noodle and just play the accumulation of whatever they played on the last fifteen records. Trust me; there have been plenty of cases where they copped their own lick on somebody else's record." Thus, for producers to successfully recognize expertise, they had to both give specific direction and allow creative space for experts to craft their own performance.

When producers failed to recognize others' expertise, freelancers were less receptive to suggestions made by others or were unwilling to publicly experiment. These behaviors could prematurely narrow the range of ideas that could be created as it affected the degree to which experts could play off each others' contributions and create new ideas. Thus, producers found that failing to recognize expertise could not only foster role ambiguity but also limit the quality and quantity of ideas generated.

Bracket. Producers used bracketing practices to exclude certain individuals from decisions at various points in the production process. Producers might bracket individuals early in the creative process so that decisions were not made that could prematurely narrow the options generated. In the example below, Hank described how he strategically managed the presentation of songs to label personnel so they did not prematurely discard a song:

> There was one song that was very rockish. Just seemed a little outside the rest of the material. I felt like it could work, with a certain treatment, it could work well with the others. And [the label rep] actually walked in the day we were tracking it and the song just really turned them loose in a way that wasn't real deep and difficult to think about musically, or to play. And we got it on the second take, really up, jamming, and hard hitting. And he walked in while we were cutting it, "We didn't agree about this, did we?" And I said, "We did, sort of."

The truth is, the label had been bracketed by Hank early in the song selection process because he knew it would be difficult to convey how he intended to record the song. Instead, he planned to

present it to the label only when the song had been fully realized. The label's surprise entrance into the recording studio disrupted this plan, but Hank recovered by referring to their agreement on basic principles. Ultimately, the song was a universal favorite of the entire project – but this opportunity was only realized due to the producer's initial bracketing practice.

Producers also bracketed musicians from final decisions in the production process—in order to exercise influence over editing and mixing decisions once songs were recorded. Due to advances in digital technology, producers could record multiple takes of musicians' performances and decide which ones to use later in the mixing process when players were not present. In the past, producers had only one track to record on—and were thus forced to make decisions along with musicians in the moment of recording. Digital technology enabled producers to generate more creative options and engage in more liberal bracketing of parties to creative decisions. While bracketing was a commonly used practice, producers did not always use it deftly. Bracketing was only successfully used when producers also *checked in* with those that were previously bracketed.

Check in. Producers checked in to integrate others' perspectives when they were bracketed or not immediately involved in creative decision-making. Checking in could be more or less inclusive in nature. For example, Gant, a producer working with major-labels, described how he checked in with A&R label personnel to integrate their perspectives into the production process, but without keeping them directly involved in the recording process. "It's important to be very proactive in including them in the process. At least to the point of giving them information if not involving them in the actual creative process itself. At least keep them informed of the progress." Gant strategically checked in with label personnel by providing status information but simultaneously bracketed them out of creative decision-making. Checking in

allowed him to maintain a positive narrative with the label to secure a steady flow of resources, while he guided the artists and musicians toward a coherent aesthetic vision.

Producers that failed to check in found that they could undermine the success of the project, their own and their artists' careers. Gary, a producer working with a major label, failed to check in with the label during the production of a record which inhibited his ability to market the final product. When the producer failed to check in, the label did not adequately vest in the the project and the project languished. As Gary recalled, "The album did not do as well, and clearly nobody won there." Thus, while practices such as bracketing could be used to isolate a party's role in decision-making, it had to be used carefully and in tandem with checking in.

Absorb challenges to expertise. While producers used many relational practices proactively to articulate role boundaries and reduce ambiguity in occupational jurisdictions, tensions still arose when these proactive efforts were not successful. In these cases, producers absorbed challenges to expertise to prevent disruption of the creative process. For example, producers working with new-to-Nashville artists often absorbed tensions when these artists did not understand how to express differences in opinion without directly challenging the expertise of the session players. Absorbing work involved considerable emotional labor (Hochschild, 1983), including using humor (Coser, 1959; Bechky, 2006) and acting as a communication gatekeeper to prevent problematic comments made by one contributor from being heard by others.

For example, Sarah explained how she made the most of digital technology and the structure of the recording studio to defuse potentially detrimental comments between artists and session players:

> Well, I let the artist tell me things if they have to in the control booth, in between takes. And he might say, well the guitar player isn't doing this… and I'll say to him, well I'll go

> out and talk to him and then I go out and I don't say anything of the sort…. I don't let the artist know if the musicians don't think something's great about the artist. Plus, when it comes right down to it, I've got the talk back button. I'm the only one who can use it. And if I do have something to say to a player, I always do it in a private conversation.

A talk back button opens the microphone between the control booth and the recording studio. By claiming control of it, Sarah reinforced her structurally central position for the benefit of the project. When in the studio, Sarah deftly managed interactions among contributors to prevent public challenges of others' expertise. When absorbing challenges posed by one person and directed at another, producers acted as a "release" valve for tensions arising from ambiguous occupational jurisdictions, thus limiting the impact that challenges to expertise might have on an individual's ability to perform and generate creative options.

Managing ambiguous occupational jurisdictions was a defining facet of nexus work: producers managed this challenge by articulating role boundaries. Producers reduced competing claims over creative decisions by defining domains, recognizing expertise, bracketing, checking in and absorbing challenges to expertise. If managing ambiguity in occupational jurisdictions was not resolved, differences in opinion of quality could become personal and emotionally charged. Negative affect could greatly undermine creative exchange, and affect the final product – a producer's worse nightmare. As one producer noted, "Misery sticks to tape." Producers' ability to reduce ambiguity in occupational jurisdictions were thus inextricably linked with their efforts to manage ambiguity in the transformation process.

Ambiguous Transformation Process

Producers confronted a third type of ambiguity: the non-routinizable nature of the creative production process that was more difficult to address with relational work. This type of ambiguity maps onto McCaskey's characterization of situations where there is "poor

understanding of cause-effect relationships" (Weick, 1995: 93). To develop a creative product, a producer brings together the best available material resources and talent, but there is no formula for transforming raw talent to market success. One producer described this challenge, "Sometimes you get in the studio and for whatever reason the song's not the magic you thought it was going to be. The song can still be wonderful; the artist can still be wonderful, it's just not the magic you thought it could be. If there was a formula, we'd all be doing it more often. But there's another element to the room that you can't always control."

Ambiguity in the creative transformation process challenged producers three ways. First, unanticipated problems often arose during the course of a project. For example, one artist became sick, preventing him from performing his best in the studio. As a result, the project required more studio time (which was expensive) than the producer had originally estimated and pushed back the product delivery date. Given the risk-averse nature of label personnel, producers wanted to ensure that unexpected situations did not undermine label support. Second, it was never clear whether songs would turn out as hoped, or whether a certain set of musicians would be able to create a particular performance. Thus, producers strove to maintain ongoing access to the best songs and talent available to their projects even after their initial selection process in order to buffer this ambiguity in the transformation process. Third, since there was no formula for success, producers obsessed about creating the best possible conditions for "magic" to occur in the recording studio. Producers carefully nurtured a positive vibe which could be at odds with the pressure of maximizing studio time. A positive vibe was even more important when budgets were small since the extra money and time needed to replace lackluster performances was not available.

In response to these challenges, producers actually took steps to leverage or increase ambiguity around the nature of the transformation process. This was in part because no amount of relational work could eliminate the ambiguity involved in producing a novel creative product. Producers sought to *build creative capacity* to generate options, be open to opportunities and handle problems they could not articulate or anticipate a priori. As summarized in Table 2, producers built creative capacity by *creating slack, setting the stage* and *fostering a generative network.* We describe each of these practices in turn.

Create slack. Producers proactively created slack in their projects to cushion the project against unforeseen events and limit the extent that anything but a positive story was projected to resource gatekeepers. Producers created slack in the number of songs they brought into the studio to record, the number of 'takes' they produced, and in their budget estimates. While budgets were institutionalized to some extent within the Country music industry, producers often padded their budgets to accommodate unanticipated problems that could arise, as described by Vant, a seasoned star producer:

> I'll usually go high, since it's much easier than having to go back and ask for more money. You don't want to be in the position of saying "Wow, I really underestimated this." You don't want to be in that situation. You want to be in a situation where, "I over budgeted this thing by a third. They're a great artist, the selecting went well, they got in and out of the studio in record time." Those are the stories that we want to tell. Not that "We're struggling with the vocals, we've had a cold, we've had to dump all the vocals we've got, we're starting over and we're flying to Key West next week to do vocals to dry this artist out since they've had a cold for six weeks."

Producers paid close attention to ensuring ongoing buzz and commitment for the project and created slack in their budgets to help hedge against unanticipated events that could threaten the creative production process.

Set the stage. Producers went to great lengths to embrace the ambiguity inherent in the creative process during studio recording sessions by setting the stage. Because they were in the nexus role, producers were structurally situated to set the stage since they were the immediate point of contact for all contributors to the creative process who may not have prior contact with each other. Rather than take advantage of their structural position, producers used their position to craft an environment that would cultivate creativity, experimentation and the integration of contributions. Hank described how he set the stage:

> I had a lunch buffet spread out for everyone. Meanwhile we're spending money hand over fist. We're paying double scale for all the musicians—about $8,000. Hire all the best musicians and pay handsomely—make them happy. You get the best performance out of them. So they don't act as puppets. You want their best performance, eliciting that effort and creativity. It's all about setting the stage. Setting the lights, setting the mood.

Hank set the stage for the musicians' creative performances by providing them with food and the space to gather, tell stories and jokes. Since Hank had a larger budget, he could pay musicians double or triple scale, and did so explicitly to encourage creative performances. He also went to elaborate lengths to decorate the studio—buying special rugs, mood lamps and thousands of candles—to create the emotional timbre they hoped to achieve in the studio. By setting the stage, producers aimed not just to produce a positive atmosphere but to buy each project contributors' good will and establish a willingness to push themselves in new directions.

Producers wanted musicians and engineers to improvise and experiment with the producers' suggestions even if those suggestions put their performances at risk. One technique producers used was to keep the composition of players fresh so that every member would be motivated to impress each other. As Sam explained: "I rotate musicians, you have to keep changing all the time so things don't start sounding all the same. Otherwise it starts sounding mechanical, technically perfect, but emotionally dry." Producers also set the stage by sharing

their experiences and taking personal interest in the stories and areas of expertise of project participants. Jesse, another producer, explained how important setting the stage was and of the performance differences that could result from a "warm" versus a "cold" start. "Get it going so that when you start it's not like, oh, hi! I just got here. Here's what we're doing today. That's starting off stiff, a cold start. You need to have everything warmed up." To ensure that all of the experts in the room were comfortable experimenting and making suggestions to each other, a "warm" start was crucial to cultivating creative ideas. Setting the stage may have created psychological safety (Edmondson, 1999), but it was with the goal of fostering experimentation.

Foster a generative network. Since producers never knew which songs would ultimately make a great match with the label's needs and the artist's voice and translate into market success, they repeatedly drew from pools of talent and songs over the course of their projects. Thus, producers went to great lengths to foster a generative network with label personnel, songpublishers, songwriters and musicians to ensure an open pipeline of raw inputs to their projects. For example, songs could be submitted to producers from many different sources (e.g. an artist, songpublisher or label). If a producer decided not to use a particular song, he spent time contacting the author or owner to let them know exactly why that particular song had not made the cut. This process took time but helped producers accomplish a number of objectives: 1) it allowed the song writer to submit the song elsewhere for consideration; 2) it provided the songwriter with more information about the producer and the artist's preferences; and 3) it helped maintain cordial relations which could foster an on-going pipeline of songs.

Thus, producers focused considerable attention on fostering a generative network with members of the songwriting community to explicitly build creative capacity. As Hank explained:

> These are the songs I played for [the artist] the other day that she passed on. I have to call all these [song publishers] and let them know. These songs are ones that I kept out of many, many listening sessions. So I need to call these people back personally. Say, "I played it for her, but it didn't ring her bell. Keep them coming." I have to. It's the relationship.

As he turned down songs for projects, Hank simultaneously reinforced and maintained his network of song suppliers by following up with publishers and songwriters; stroking their egos and asking them to continue sending him songs. The flood of songs passing through any producer's office made personally following up with songwriters an overwhelming task (Hank had stacks and stacks of cds laying around his office). Although this process was time consuming, Hank could not afford not to do it, adding, "I have to go through thousands-- of junk. And I have to write nice things to people, when maybe I don't feel like it." Hank feared that by not doing this type of relational work, he could be cut off from the future supply of 'good' songs.

John, a producer who quit his producer role by the end of the study, by his own admittance did not use this practice deftly. When he turned down a fellow songwriter's song he caused major tensions in the relationship, "I had one writer, he was a good friend. He called and said, 'Oh! I've got just the song for you.' And then I'd have to tell him it didn't work. And it killed me to say that. And he got real angry, and said, Oh, now you're a big time producer..." Not fostering a generative network effectively was not solely responsible for undermining this particular project's success, but it did have negative implications not only for John's friendship but also for his access to song pipelines.

While producers strove to bring together the best talent and resources they could to a creative project, they freely acknowledged that there was no recipe for producing a hit song and that there were many aspects of the creative process that were not replicable or controllable despite one's experience. We found that producers did not attempt to reduce this type of

ambiguity, but instead created slack resources, set the stage, and fostered a generative network in order to build creative capacity.

Conclusion. We found that those in the nexus role confronted three types of ambiguity and drew upon a repertoire of relational practices to differentiate their responses to each type. To reduce ambiguity over the quality of work produced, producers helped *create a shared quality aesthetic*. To reduce ambiguity over who was responsible for what, producers *articulated role boundaries*. However, producers did not attempt to reduce ambiguity over the creative transformation process but instead *built creative capacity* to enable the project to develop options and respond to unforeseen contingencies. Thus, the repertoire of nexus work practices we identified constitute a coping strategy to influence the creative process when the formal control and authority mechanisms long associated with traditional project management techniques in organizations are lacking.

As presented in Figure 1, this type of relational brokerage work affected project outcomes, including the ability of those in the nexus role to influence the creative product, the viability of the project, the career prospects of those in the nexus role and the potential for repeat collaborations among all parties. A project had market viability if it had a reasonable chance of success in finding a market audience – based on the internal (production) resources provided as opposed to the external dynamics involved in bringing the product to market. In terms of outcomes, the importance of preserving project relationships cannot be underestimated. Since the producers in our study were located in Nashville, a city marked by dense networks, bringing a project to fruition in a way that did not allow the possibility for the parties to work together again in the future was not an alternative.

Insert Figure 1 about here

Because the projects in our sample resulted in a broad range of creative outputs – pitch packages, songs and recorded material, and because our unit of analysis was on the producer as opposed to the producer's output, comparable commercial outcomes are not available. However, we can conclude that producers that made better use of nexus work practices were better able to address ambiguity an exert influence over the creative process and achieve positive outcomes than those who were not.

When producers did not use certain nexus practices at the appropriate time, they had a more difficult time managing the creative process and the project suffered. Failure to use certain practices, such as absorbing challenges to expertise or checking in, were associated with unsuccessful or aborted projects, compromised careers, and damaged relationships. For example, one producer recounted how his bracketing of record label executives without checking in resulted in a failed project.

> Ultimately we made the record without much input from the label. At least one of the dissenters was out of the way, and so it was just between me and the artist. But what ended up happening was that they [the label] were out of the way for the production, and she [the artist] got the songs she wanted, but they [the label] obviously won, because they didn't sell it.

He concluded that because the label was bracketed from too much of the production process, they did not develop a vested interest in marketing the album. "How could they sell this record if they didn't have any interest emotionally? How could they sell it if they didn't have any say in it, since they know what they can sell?" This suggests that certain nexus work practices might be particularly important at critical transition moments in the creative transformation process

(McGinn, Long Lingo, and Ciano, 2004) and that effective producers developed the capability to identify such transition points.

DISCUSSION

Organizational theorists have devoted much attention to the role of structurally central brokers (Hargadon and Sutton, 1997; Burt, 2004; Obstfeld, 2005) and boundary spanners (Tushman, 1977; Ancona and Caldwell, 1992; Allen, 2000) and the ability of those in these roles to transfer unique information from one source to another. While these conceptions are slightly different – brokers create unique connections among individuals that would otherwise not be connected and boundary spanners create external connections that may or may not be unique (Fleming and Waguespack, 2007), neither conception has benefited from an understanding of the relational practices that underlie either role. In concluding his seminal piece, Tushman posed a question: "Do persons filling these [boundary spanning] roles simply transfer (or filter) information, or are they involved in a wider range of activities?" (1977: 602). Because network studies do not often study the work practices of those in such roles, this question has remained unanswered.

Our research answers this question with a theoretically grounded explanation of the nexus role. The defining characteristics of those in the nexus role are threefold: 1) they are structurally central to a project and connect all project contributors; 2) they must integrate contributions from many parties that do not necessarily share the same organization into a unified product; and 3) they do not necessarily have direct authority over all parties to a project. Those in the nexus role are structurally central but instead of wielding their position to accumulate power, they must actually integrate or *transform* the contributions of many experts into a coherent whole. While

prior work has shown how the work of transformation can be a more complex and demanding task than that of merely transferring or translating knowledge (Bechky, 2003a, 2003b; Carlile and Rebentisch, 2003; Carlile, 2004), there has been little appreciation of the relational work involved by those in the nexus role. This relational form of brokerage offers stark contrast to network conceptions of brokerage that focus on the unique contact and informational advantages that can accrue to those who are structurally central to a network.

By studying one type of nexus role, independent Country music producers, we found that they regularly encountered three types of ambiguity. Without shared agreement about what makes a 'hit song'; without agreement on the roles that each expert would play; and without agreement on how the creative contributions of everyone would be transformed into a coherent whole, producers relied upon a distinct form of relational work that we call nexus work.

Producers educated, introduced references, praised and deferred decisions to cultivate a shared quality aesthetic. The goal of creating a shared quality aesthetic was to reduce ambiguity over what constituted 'success' on the project, but one of these practices, in action, actually strategically maintained ambiguity. By deferring decisions, producers hoped to maintain the flow of creative ideas and critical opinions needed to develop a viable project and enhance their control over the project outcome. When nexus workers created a shared quality aesthetic, they used a blending strategy, comprising relational practices that both reduced and maintained ambiguity.

Because producers were responsible for integrating each parties' creative input without necessarily having authority over everyone involved, perhaps it is not a surprise that the bulk of their relational work was directed toward managing ambiguous occupational jurisdictions. To reduce ambiguity over occupational jurisdictions, producers articulated role boundaries by

defining domains, recognizing expertise, bracketing parties from creative decisions, checking in with stakeholders, and absorbing challenges to expertise. With the exception of the absorbing challenges to expertise practice, which was used to reduce tensions when role conflict did arise, all of the practices in this strategy reduced ambiguity. Reducing ambiguous occupational jurisdictions was one of the most important types of relational work that producers performed since it could critically affect all of the project outcomes. If producers were not successful in reducing this type of ambiguity, role conflict could (and occasionally did) materialize which could interrupt the flow of creative inputs critical to a project's viability; damage relations among all involved, and affect career outcomes.

Even producers who had produced 'hit songs' in the past could not be sure that once they had assembled all of the individuals and ingredients necessary to produce a creative music project that the 'magic' they hoped for would materialize. We found that this type of ambiguity was inherent to the creative process and could not be reduced through relational work. Instead, producers took action to build creative capacity in their network and in their studio. Not knowing what inputs could be critical nor how long the process might take, producers created slack, set the stage, and fostered a generative network. These actions did not necessarily reduce ambiguity. They did however, provide the project with more resources and capabilities to generate options and enable producers to respond to unanticipated contingencies materializing in the creative process that could not be articulated a priori. As such, this strategy's primary outcome was to enhance the viability of the project and the nexus actors' career prospects with resource gatekeepers.

Contributions

Despite the fact that project based work involving independent experts as well as contributors from multiple organizations is common to creative industries such as film (Faulkner and Anderson, 1987; Lampel and Shamsie, 2003; Jones, 2006), theatre (Goodman and Goodman, 1976; Uzzi and Spiro, 2005); art (Becker, 1982; DiMaggio, 1991), and music (Faulkner, 1983), we lack a deep appreciation of how individuals at the center of these projects manage the challenges of their role. Network forms of organizing are not unique to creative industries (Adler, 2001; Powell and Snellman, 2004), but also occur frequently in traditional industries such as technology (Barley and Kunda, 2004; Fleming and Waguespack, 2007; O'Mahony and Ferraro, 2007); construction (Eccles, 1981a) and production and manufacturing (Smith, 1997).

As knowledge becomes more important to our economy, Adler (2001) predicted that community, network and project forms would be likely to proliferate. More work is likely to take place in projects or ventures that cross organizational boundaries (e.g. Faulkner and Anderson, 1987; Jones, 1996; Powell, Koput, and Smith-Doerr, 1996) or utilize contract experts (e.g., Eccles, 1981b; Powell, 1990; Kalleberg, 2000; Barley and Kunda, 2004). Those in the nexus role are the architects of such projects. Yet, as Barley and Kunda (2001) argue, our conceptions of post-bureaucratic forms of organizing are not likely to keep pace with this phenomenon without serious study of the work practices that underlie such forms in situ. This research takes a step towards narrowing this gap by focusing on the work practices that those in the nexus role use to craft or 'organize' a project in a network. Such an approach focuses on the actions and verbs involved in *organizing* (Weick, 1979) when the traditional structures associated within organizations are less salient.

While network theorists have long argued that roles may emerge from the patterns of ties that people hold (Burt, 1992), little research has examined the work practices used by those who hold structurally central roles (Ibarra, Kilduff, and Wenpin, 2005). By pursing a work practice approach (Barley and Kunda, 2001; Brown and Duguid, 2001; Orlikowski, 2002), we learned how those who are structurally central integrate contributions from many parties without depending on formal authority to do so. We found that managing ambiguity was a central task. By unpacking these findings, we make three contributions to organizational theory: 1) an explanation as to how projects are managed without direct lines of authority; 2) specification of an under appreciated type of relational brokerage role; and 3) a deeper understanding of the role of ambiguity in creative work – in particular, delineating the types of ambiguity that can and can not be resolved through relational work.

Managing without formal authority. Much scholarship has suggested that vertical authority systems associated with hierarchical forms should be less relevant to project and network based forms (Ouchi, 1980; Bradach and Eccles, 1989; Powell, 1990; Adler, 2001; Barley and Kunda, 2001), but few theoretical frameworks have illuminated the ensuing challenge of managing equivocality or ambiguity (Weick, 1995). While few would be so naïve as to argue that any effective manager or leader relies on formal authority alone (e.g. Barnard, 1948; Bennis, 1959; Dalton, 1959; Mintzberg, 1973) some degree of positional authority helps align subordinate behavior toward congruent goals (Simon, 1976; Coleman, 1980). A shared basis of authority provides an important resource that distinguishes members of common organizational settings (Simon, 1976) and without this, relational work practices prove to be critical.

In his development of a theory of 'social skill', Fligstein (2001) makes a powerful argument about the importance of relational work to institutional entrepreneurs. 'Social skill' is

equally important in the context of nexus work, largely because of the 'authority gap' (Lawrence and Lorsch, 1967; Hodgetts, 1968) that nexus workers confront. Organizational theorists have long recognized that workers inside organizations may not be provided with the authority they need to carry out projects. For example, when organizations overlay project work on top of functional lines, project managers may lack full authority over resources upon which they depend and compete with functional managers for resources necessary to complete a project (Hodgetts, 1968). Without some resolution of the 'authority gap' and the ambiguity that can ensue (Weick, 1995), any form of organizing is destined to be less effective (Etzioni, 1959). When individuals confront ambiguity that can impair progress on the project, the "confusion created by multiple meanings call[ed] for social construction and invention" (1995: 95).

By showing specifically how those in the nexus role responded to this call for invention, we contribute a more refined understanding of network based projects – a critical post-bureaucratic form of organizing (Barley and Kunda, 2001). By specifying the precise types of relational work practices that individuals in the nexus role use to reduce ambiguity and cultivate a creative contribution from those upon whom they depend, we also identify a more relational type of brokerage where individuals use their unique position to achieve mutual benefit as opposed to political advantage.

Specification of brokerage role. Our conception of the nexus role, its defining characteristics, and the relational work practices associated with it explicate a specific type of relational brokerage that has likely been always apparent but under appreciated by existing theory. As Fleming and colleagues (2007) point out, brokers are typically characterized as politically astute individuals unafraid to wield their power, while boundary spanners are characterized as respected connecters between a project and critical external resources. Our

research suggests that one explanation for this distinction may be the degree to which integration work is needed.

When integration work is required, brokers can not extract advantages from their structural position on their own, but must use relational skill to transform raw inputs for individual and mutual benefit. In our study, where integration work was required, we did not find producers using their unique structural position to achieve individual advantage. When producers leveraged their unique structural position, they did so to help individuals master their performances, save face, inhibit conflict, or create an environment conducive to creativity. Thus, we would expect that brokers who engage in integration work to utilize nexus relational practices more so than brokers who do not.

Thus, our research identifies a very specific type of broker – one that is structurally central (they alone connect all of the parties to a project) and is considered a respected integrator. Distinct from the extant conception of brokers, nexus workers do not leverage their structural position vis-à-vis others to accumulate power but to buffer competing visions of the project from running into each other and impeding the creative flow of ideas. Their job is to create synthesis. Distinct from the extant conception of boundary spanners, nexus workers do more than just act as conduits of information and ideas but use their role to scope, cultivate and guide the talents of all of the parties involved into a coherent whole.

This suggests that our understanding of integration or transformation work is under theorized and potentially critical to parsing current conceptions of brokerage and boundary spanning (e.g., Fleming and Waguespack, 2007). Scholars have shown that 'knowledge transfer' is often an inadequate term to characterize the actions needed to transform knowledge and understanding from one source to another (Bechky, 2003b, 2003a; Carlile and Rebentisch, 2003;

Carlile, 2004). Although boundary objects and acts of translation can help transform individual understandings, what fosters the integration of competing or divergent ideas into a common product, recording, movie, book or building? How are competing and equally valid conceptions of a project reconciled? These questions are especially critical when individual roles and responsibilities are not defined a priori. The de-contextualization of negotiation and conflict research from work practice and project outcomes (Barley, 1991) has led to an under examined but critical feature of project work that can not be explained by the current project management literature (e.g., Goodman, 1967; Wilemon and Cicero, 1970; Butler Jr., 1973; Liberatore and Titus, 1983). While our research suggests that the presence of an astute nexus worker may help reduce two critical forms of ambiguity that can lead to conflict on projects, it also suggests that not all ambiguity can be resolved.

The role of ambiguity in creative work. Research in the cultural industries has focused on demand uncertainty (Hirsch, 1972) and risk adverse gatekeepers (Baker and Faulkner, 1991; Elsbach and Kramer, 2003). In contrast, our theory of nexus work emphasizes ambiguity rather than uncertainty, focusing attention on the lack of clarity over what, how and who is involved in the creation of a cultural product. Our theoretical framework of how individuals in the nexus role manage ambiguity complements the rich practice-based work in cultural industries examining coordination in temporary projects (Bechky, 2006), how gatekeepers evaluate pitch packages (Elsbach and Kramer, 2003) and the challenges of music composers (Faulkner, 1983). Scholars of creative work typically recognize that some degree of ambiguity is inherent in the production of a creative work, because neither the process nor the outcome can be specified a priori (Amabile, 1996). How this ambiguity is addressed by individuals integrating potentially competing contributions into a coherent whole is less clear.

The nexus worker's recognition that not all aspects of ambiguity could be reduced may intrigue scholars of creative work. In our study, producers actively tried to reduce ambiguity over occupational jurisdictions and the emerging quality aesthetic to avoid task conflict transitioning into personal conflict (e.g., Jehn, 1997) and impair the creative flow of ideas. Producers seemed to recognize that when competing values were at stake, the conflation of task and emotional conflict could become all too easy (Edmondson and Smith, 2006).

However, producers sought to maintain some ambiguity over the transformation process to help generate creative ideas, preserve relationships, and create the conditions likely to foster creative work (e.g., Amabile, et al., 1996). Instead of trying to reduce ambiguity over how everyone's creative inputs would become transformed, producers used multiple practices to build creative capacity – in terms of written songs, recorded material, backup singers and musicians, studio time, and budget. In the event that unforeseen circumstances could delay progress, producers worked to sustain a positive project narrative and foster positive affect – an important antecedent to creativity (Amabile, et al., 2005). This suggests that individuals pursuing creative work might want to manage ambiguity differently – directing their attention to building creative capacity where ambiguity can not be reduced.

Future research

Although nexus work may be more prevalent than our extant theories would suggest, this research focused only on type of nexus work in one industry. Future research would benefit from testing these ideas among a larger sample and comparing across industries. Our specification of the three defining characteristics of the nexus role and the three types of ambiguity to be managed (shown in Figure 1) offers a useful framework for comparing work in

industries where individuals perform a similar role. While the role of 'producer' is common to fields as diverse as event management, graphic arts, advertising, music, theatre, and film, we would not be surprised to find nexus workers crafting entrepreneurial ventures for business or social enterprise.

If "entrepreneurship is a process by which individuals – either on their own or inside organizations – pursue opportunities without regard to the resources they currently control (Stevenson, Roberts, and Grousbeck, 1989)" (Stevenson and Jarillo, 1990: 23) rather than the creation of new organizations, then understanding how those in the nexus role manage the transformation process has implications for entrepreneurial research. Producers pursued the creation of music 'hits', without necessarily controlling or even knowing all of the elements they will need. Reducing ambiguity over occupational jurisdictions, creating a shared quality aesthetic, and building creative capacity helped producers manage ambiguity and bring a creative project to fruition, but future research would do well to explore whether these practices apply to other entrepreneurial settings. Furthermore, if this form of organizing becomes more prevalent, it will be critical to understand how nexus work practices link more explicitly to project outcomes such as: contributors' perceptions of nexus role performances; contributor's satisfaction with a project's process and critical and commercial success; and contributor's perceptions of conflict, psychological safety, and their willingness to be creative.

While it is likely that some elements of the nexus role may be similar within organizations, nexus individuals in a market context lack the authority base and control mechanisms that a common organizational backdrop (Simon, 1976) can provide. However, the degree to which nexus work practices are required may be contingent upon the amount of authority that nexus individuals can accrue – and this is a parameter that can vary even within

organizations. Thus, we would expect our findings to hold where the features of nexus work are present within organizations. Because the producers in our study were embedded in dense artistic networks local to Nashville, this likely exacerbated the need to engage in relational practices in a way that permitted potential repeat collaborations (Jones, Hesterly, and Borgatti, 1997). Thus, it remains an open question whether the same relational work practices would be found by those in a nexus role in a less dense network. Our research suggests that Powell was right – those in the nexus role do face "novel problems of control" (1990) and their use of relational work to respond to different sources of ambiguity affected their ability to bring a network based project to fruition.

REFERENCES

Adler, P. S.
2001 "Market, hierarchy, and trust: The knowledge economy and the future of capitalism." Organization Science, 12: 215-234.

Allen, D.
2000 "Doing occupational demarcation: The 'boundary-work' of nurse managers in a district general hospital." Journal of Contemporary Ethnography, 29: 326-356.

Amabile, T. M.
1996 Creativity in Context. Boulder, Co: Westview Press.

Amabile, T. M., S. G. Barsade, J. S. Mueller, and B. M. Staw
2005 "Affect and creativity at work." Administrative Science Quarterly, 50: 367-403.

Amabile, T. M., R. Conti, H. Coon, J. Lazenby, and M. Herron
1996 "Assessing the work environment for creativity." Academy of Management Journal, 39: 1154-1184.

Anand, N., and R. A. Peterson
2000 "When market information constitutes fields: Sensemaking of markets in the commercial music industry." Organization Science, 11: 270-284.

Ancona, D., and D. F. Caldwell
1992 "Bridging the boundary: External activity and performance in organizational teams." Administrative Science Quarterly, 37: 634-665.

Baker, W. E., and R. R. Faulkner
1991 "Role as resource in the Hollywood film industry." American Journal of Sociology, 97: 279-309.

Baker, W. E., and D. Obstfeld
1999 "Social capital by design: Structures, strategies, and institutional context." In R. Leenders, and S. M. Gabbay (eds.), Corporate Social Capital and Liability: 89-105. Boston: Kluwer Academic.

Barley, S. A., and J. Orr
1997 Between Craft and Science: Technical Work in U.S. Settings. Ithaca, NY: ILR Press.

Barley, S. R.
1991 "Contextualizing conflict: Notes on the anthropology of disputes and negotiations." In M. H. Bazerman, et al. (eds.), Research on Negotiations in Organizations: 165-199. Greenwich, CT: JAI Press Inc.

Barley, S. R., and G. Kunda
2001 "Bringing work back in." Organization Science, 12: 76-95.

2004 Gurus, Hired Guns, and Warm Bodies: Itinerant Experts in a Knowledge Economy. Princeton, NJ: Princeton University Press.

Barnard, C.
1948 Functions of the Executive. Cambridge, MA: Harvard University Press.

Bechky, B. A.
2003a "Object lessons: Workplace artifacts as representations of occupational jurisdiction." American Journal of Sociology, 109: 720-752.

2003b "Sharing meaning across occupational communities: The transformation of understanding on a production floor." Organization Science, 14: 312-332.

2006 "Gaffers, gofers, and grips: Role-based coordination in temporary organizations." Organization Science, 17: 3-21.

Becker, H. S.
1951 "The professional dance musician and his audience." American Journal of Sociology, 57: 136-144.

1982 Art Worlds. Berkeley: University of California Press.

Bell, D.
1973 The Coming of Postindustrial Society.

Bennis, W.
1966 "Changing organizations." Journal of Applied Behavioral Science, 2: 247-263.

Bennis, W. G.
1959 "Leadership theory and administrative behavior: The problem of authority." Administrative Science Quarterly, 4: 259-301.

Bielby, D. D., and W. T. Bielby
1994 ""All hits are flukes": Institutionalized decision making and the rhetoric of network prime-time program development." American Journal of Sociology, 99: 187-1313.

Bielby, W. T., and D. D. Bielby
1999 "Organization mediation of project-based labor markets: Talent agencies and the careers of screenwriters." American Sociological Review, 64: 64-85.

Bradach, J. L., and R. G. Eccles
1989 "Price, authority, and trust: From ideal types to plural forms." Annual Review of Sociology, 15: 97-118.

Brown, J. S., and P. Duguid
1991 "Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation." Organization Science, 2: 40-56.

2001 "Knowledge and organization: A social-practice perspective." Organization Science, 12: 198-213.

Burt, R. S.
1992 Structural Holes: The Social Structure of Competition. Cambridge, MA: Harvard University Press.

2004 "Structural holes and good ideas." American Journal of Sociology, 110: 349-399.

Butler Jr., A. G.
1973 "Project management: A study in organizational conflict." Academy of Management Journal, 16: 84-101.

Carlile, P.
2004 "Transferring, translating and transforming: An integrative framework for managing knowledge across boundaries." Organization Science, 15: 555-568.

Carlile, P. R., and E. S. Rebentisch
2003 "Into the black box: The knowledge transformation cycle." Management Science, 49: 1180-1195.

Caves, R. A.
2000 Creative Industries: Contracts Between Art and Commerce. Cambridge, MA: Harvard University Press.

Coleman, J. S.
1980 "Authority systems." Public Opinion Quarterly, 44: 143–163.

Coser, R. L.
1959 "Some social functions of laughter: A study of humor in a hospital setting." Human Relations, 12: 171-182.

Daft, R. L., and A. Y. Lewin
1993 "Where are the theories for the "new" organizational forms? An editorial essay." Organization Science, 4: i-vi.

Dalton, M.
1959 Men Who Manage. New York, NY: John Wiley and Sons, Inc. .

DiMaggio, P. J.
1991 "Constructing an organizational field as a professional project: U.S. art museums, 1920 - 1940." In W. W. Powell, and P. J. DiMaggio (eds.), The New Institutionalism in Organizational Analysis. Chicago: University of Chicago Press.

Dougherty, D.
1992 "Interpretive barriers to successful product innovation in large firms." Organization Science, 3: 179-202.

Dubinskas, F. A.
1992 "Culture and conflict: The cultural roots of discord." In D. M. Kolb, and J. Bartunek (eds.), Hidden Conflict in Organizations. Newbury Park, CA: Sage.

Eccles, R. G.
1981a "Bureaucratic versus craft administration: The relationship of market structure to the construction firm." Administrative Science Quarterly, 26: 449-469.

1981b "The quasi-firm in the construction industry." Journal of Economic Behavior & Organization, 2: 335-357.

Edmondson, A. C.
1999 "Psychological safety and learning behavior in work teams." Administrative Science Quarterly, 44: 350-384.

Edmondson, A. C., and S. E. McManus
2007 "Methodological fit in management field research." Academy of Management Review, 32.

Edmondson, A. C., and D. M. Smith
2006 "Too hot to handle? How to manage relationship conflict." California Management Review, 49: 6-31.

Eisenhardt, K. M., and S. L. Brown
1998 "Time pacing: Competing in markets that won't stand still." Harvard Business Review, 76: 59-69.

Elsbach, K. D., and R. M. Kramer
2003 "Assessing creativity in Hollywood pitch meetings: Evidence for a dual-process model of creativity judgments." Academy of Management Journal, 46: 283.

Etzioni, A.
1959 "Authority structure and organizational effectiveness." Administrative Science Quarterly, 4: 43-67.

Faulkner, R. R.
1983 Music on Demand: Composers and Careers in the Hollywood Film Industry. New Brunswick, NJ: Transaction Books.

Faulkner, R. R., and A. B. Anderson
1987 "Short-term projects and emergent careers: Evidence from Hollywood." American Journal of Sociology, 92: 879-909.

Fleming, L., S. Ming, and D. Chen
2007 "Collaborative brokerage, generative creativity, and creative success." Administrative Science Quarterly, 52: 443-475.

Fleming, L., and D. M. Waguespack
2007 "Brokerage, boundary spanning, and leadership in open innovation communities." Organization Science, 18: 165-180.

Fligstein, N.
2001 "Social skill and the theory of fields." Sociological Theory, 19: 105-125.

Glaser, B. G., and A. L. Strauss
1967 The Discovery of Grounded Theory. New York: Aldine de Gruyter.

Goffman, E.
1959 The Presentation of Self in Everyday Life. New York: Doubleday Anchor Books.

Goodman, R. A.
1967 "Ambiguous authority definition in project management." Academy of Management Journal, 10: 395-407.

Goodman, R. A., and L. Goodman, Peter
1976 "Some management issues in temporary systems: A study of professional development and manpower-the theater case." Administrative Science Quarterly, 21: 494-501.

Hargadon, A., and R. I. Sutton
1997 "Technology brokering and innovation in a product development firm." Administrative Science Quarterly, 42: 716-749.

Hargadon, A. B., and B. A. Bechky
2006 "When collections of creatives become creative collectives: A field study of problem solving at work." Organization Science, 17: 484-500.

Hargadon, A. B., and Y. Douglas
2001 "When innovations meet institutions: Edison and the design of the electric light." Administrative Science Quarterly, 46: 476-501.

Harrison, P. M.
1960 "Weber's categories of authority and voluntary associations." American Sociological Review, 25: 232-237.

Heydebrand, W. W.
1989 "New organizational forms." Work and Occupations, 16: 323-357.

Hirsch, P. M.
1972 "Processing fads and fashions: An organization-set analysis of cultural industry systems." American Journal of Sociology, 77: 639-659.

Hochschild, A. R.
1983 The Managed Heart. Berkeley: University of California Press.

Hodgetts, R. M.
1968 "Leadership techniques in the project organization." Academy of Management Journal, 11: 211-219.

Ibarra, H., M. Kilduff, and T. Wenpin
2005 "Zooming in and out: Connecting individuals and collectivities at the frontiers of organizational network research." Organization Science, 16: 359-371.

Jehn, K. A.
1997 "A qualitative analysis of conflict types and dimensions in organizational groups." Administrative Science Quarterly, 42: 530-557.

Jones, C.
1996 "Careers in project networks: The case of the film industry." In M. B. Arthur, and D. M. Rousseau (eds.), The Boundaryless Career: A New Employment Principle for a New Organizational Era. New York: Oxford University Press.

2006 "From technology to content: The shift in dominant logic in the early American film industry." In J. Lampel, et al. (eds.), The Business of Culture: Strategic Perspectives on Entertainment and Media. Mahwah, New Jersey: Lawrence Erlbaum Associates.

Jones, C., W. S. Hesterly, and S. P. Borgatti
1997 "A General theory of network governance: Exchange conditions and social mechanisms." Academy of Management Review, 22: 911-945.

Kalleberg, A. L.
2000 "Nonstandard employment relations: Part-time, temporary and contract work." Annual Review of Sociology, 26: 341-365.

Lampel, J., and J. Shamsie
2003 "Capabilities in motion: New organizational forms and the reshaping of the Hollywood movie industry." Journal of Management Studies, 40: 2189-2210.

Lawrence, P. R., and J. W. Lorsch
1967 "Differentiation and integration in complex organizations." Administrative Science Quarterly, 12: 1-30.

Lewicki, R. J., B. Barry, J. W. Minton, and D. M. Saunders
2002 Negotiation, 4th ed. Homewood, IL: McGraw Hill Education.

Liberatore, M. J., and G. J. Titus
1983 "The practice of management science in R&D project management." Management Science, 29: 962-974.

McCaskey, M. B.
1982 The Executive Challenge: Managing Change and Ambiguity. Marshfield, MA: Pitman.

McGinn, K. L., E. Long Lingo, and K. Ciano
2004 "Transitions through out-of-keeping acts." Negotiation Journal, 2: 171-184.

Meyerson, D., K. E. Weick, and R. M. Kramer
1996 "Swift trust in temporary groups." In R. M. Kramer, and T. R. Tyler (eds.), Trust in Organizations: Frontiers of Theory and Research. Thousand Oaks, CA: Sage.

Miles, M. B., and A. M. Huberman
1994 Qualitative Data Analysis. Thousand Oaks, CA: Sage.

Miles, R. E., and C. C. Snow
1986 "Organizations: New concepts for new forms." California Management Review, 28: 62-73.

Miller, D., and J. Shamsie
1999 "Strategic responses to three kinds of uncertainty: Product line simplicity at the Hollywood film studios." Journal of Management, 25: 97-116.

2001 "Learning across the life cycle: Experimentation and performance among the Hollywood studio heads." Strategic Management Journal, 22: 725-745.

Mintzberg, H.
1973 The Nature of Managerial Work. New York, NY: Harper & Row.

Mortensen, M.
2008 "Fuzzy teams: Why do teams disagree on their membership, and what does it mean?" MIT Sloan Working paper.

Murnighan, J. K., and D. E. Conlon
1991 "The dynamics of intense work groups: A study of British string quartets." Administrative Science Quarterly, 36: 165-186.

Murray, F., and S. O'Mahony
2007 "Exploring the foundations of cumulative innovation: Implications for organization science." Organization Science, 18: 1006-1021.

O'Mahony, S. C., and B. A. Bechky
2006 "Stretchwork: Managing the career progression paradox in external labor markets." Academy of Management Journal, 49: 918-941.

O'Mahony, S. N., and F. Ferraro
2007 "The emergence of governance in an open source community." Academy of Management Journal, 50: 1079-1106.

Obstfeld, D.
2005 "Social networks, the *tertius iungens o*rientation, and involvement in innovation." Administrative Science Quarterly, 50: 100-130.

Orlikowski, W. J.
2002 "Knowing in practice: Enacting a collective capability in distributed organizing." Organization Science, 13: 249-273.

Orr, J.
1996 Talking About Machines: An Ethnography of a Modern Job. Ithaca: Cornell University Press.

Ouchi, W. G.
1980 "Markets, bureaucracies, and clans." Administrative Science Quarterly, 25: 129-141.

Powell, W. W.
1990 "Neither market nor hierarchy: Network forms of organization." In B. M. Staw, and L. L. Cummings (eds.), Research in Organizational Behavior: 295-336. Greenwich, CT: JAI Press Inc.

Powell, W. W., K. W. Koput, and L. Smith-Doerr
1996 "Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology." Administrative Science Quarterly, 41: 116-145.

Powell, W. W., and K. Snellman
2004 "The knowledge economy." Annual Review of Sociology, 30: 199-220

Pruitt, D. G., and J. Z. Rubin
1986 Social Conflict: Escalation, Stalemate, and Settlement. New York, NY: Random House.

Ritzer, G.
1977 Working: Conflict and Change. Englewood Cliffs, NJ: Prentice-Hall.

Romanelli, E.
1991 "The evolution of new organizational forms." Annual Review of Sociology, 17: 79-103.

Simmel, G.
1950 "The triad." In K. Wolff (ed.), The Sociology of Georg Simmel: 145-169. New York, NY: The Free Press.

Simon, H. A.
1976 Administrative Behavior. New York: The Free Press.

Smith, V.
1997 "New forms of work organization." Annual Review of Sociology, 23: 315-339.

Spradley, J. P.
1979 The Ethnographic Interview. New York: Harcourt Brace Jovanovich.

Stevenson, H. H., and J. C. Jarillo
1990 "A paradigm of entrepreneurship: Entrepreneurial management." Strategic Management Journal, 11: 17-27.

Stevenson, H. H., M. J. Roberts, and H. I. Grousbeck
1989 New Business Ventures and the Entrepreneur. Homewood, IL: Irwin.

Strauss, A., and J. Corbin
1990 Basics of Qualitative Research: Grounded Theory Procedures and Techniques. Newbury Park, CA: Sage.

Tushman, M. L.
1977 "Special boundary roles in the innovation process." Administrative Science Quarterly, 22: 587-605.

Uzzi, B., and J. Spiro
2005 "Collaboration and creativity: The small world problem." American Journal of Sociology, 111: 447-504.

Weick, K. E.
1979 The Social Psychology of Organizing. Reading, MA: Addison-Wesley.

1995 Sensemaking in Organizations. Thousand Oaks, CA: Sage.

1998 "Introductory essay: Improvisation as a mindset for organizational analysis." Organization Science, 9: 543-555.

Wilemon, D. L., and J. P. Cicero
1970 "The project manager: Anomalies and ambiguities." Academy of Management Journal, 13: 269-282.

Zuboff, S.
1988 In the Age of the Smart Machine: The Future of Work and Power. New York: Basic Books.

TABLE 1:

NEXUS WORK PRACTICES: DEFINITIONS AND STRENGTH OF EVIDENCE

Types of Ambiguity	Nexus Work Practice	Definition	Type of Evidence	% Using practice	% using 1 or more practice
Ambiguous Quality Metric	Educate	Instruct other contributors about industry norms and nexus actors' aesthetic	PI, OI, O	74%	100%
	Introduce references	Refer to other songs, musicians or artists to convey desired aesthetic	PI, O, O	100%	
	Praise	Lavish praise on contributors; often used as means to shape quality aesthetic	PI, OI, O	70%	
	Defer decisions	Defer decisions to a later point, without excluding actors from the process	PI, OI, O	70%	
Ambiguous Occupational Jurisdictions	Define domains	Instruct other contributors about role relations	PI, OI, O	48%	96%
	Recognize expertise	Recognize others' expertise and occupational jurisdictions	PI, OI, O	65%	
	Bracket	Exclude others from decisions	PI, OI, O	70%	
	Check in	Include others in decisions when they are not immediately involved	PI, OI, O	78%	
	Absorb challenges to expertise	Reframe or does not pass along one contributor's challenge to another's expertise	PI, OI, O	52%	
Ambiguous Transformation Process	Create slack	Create a resource buffer to draw from in case problems arise	PI, OI	52%	100%
	Set the stage	Create positive energy and positive working environment among actors involved in creative process	PI, OI, O	91%	
	Foster a generative network	Reinforce relations with resource gatekeepers to enhance access to information and scarce market resources	PI, OI, O	57%	

KEY: * PI: Producer Interview; OI: Other Interview; O: Observation

TABLE 2

THE NASHVILLE COUNTRY MUSIC PRODUCTION PROCESS:
ACTIVITIES AND INDIVIDUALS INVOLVED

Activities	**Individuals Involved**					
Selecting songs and talent for the project	**Producer**	**Artist**	**Label personnel**	**Musicians**	**Engineers**	**Artist's manager**
1. Selecting songs	X	X	X			X
2. Casting the session musicians and engineers	X	X	X	X	X	
Cultivating the "magic"						
3. Preparing songs	X	X		X	X	
4. Tracking (recording) the songs	X	X	X	X	X	X
5. Mixing (editing) the songs	X	X	X		X	X
Delivering the creative product						
6. Delivering the product and choosing singles	X	X	X			X

TABLE 3

NEXUS WORK AND AMBIGUITY

Source of Ambiguity	Nexus Work Practice	Effect on Ambiguity	Nexus Strategy
Ambiguous quality metric	Educate	-	***Create Shared Quality Aesthetic*** – *a blending strategy that reduces ambiguity over what constitutes 'success' on the project, but strategically maintains ambiguity to generate creative options*
	Introduce references	-	
	Praise	-	
	Defer decisions	+	
Ambiguous occupational jurisdictions	Define domains	-	***Articulate Role Boundaries*** – *a strategy that reduces ambiguity around occupational jurisdictions and any conflict arising from challenges to expertise*
	Recognize expertise	-	
	Bracket	-	
	Check in	-	
	Absorb challenges to expertise	**0**	
Ambiguous transformation process	Create slack	**0**	***Build Creative Capacity*** – *a strategy that does not have any effect on ambiguity, but provides the project with slack and resources needed to generate options and respond to unanticipated contingencies*
	Set the stage	**0**	
	Foster a generative network	**0**	

Key = + increase ambiguity, - decrease ambiguity, 0 no effect on ambiguity

FIGURE 1

NEXUS WORK: MANAGING AMBIGUITY IN NETWORK BASED PROJECTS